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Factors Affecting Indonesian Seaweed Exports

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Abstract

The purpose of this study is to examine the variables affecting Indonesian seaweed exports to ten destination nations between 2012 and 2021. Data analysis is multiple linear regression. The data was processed using the MS computer program. Excel, SPSS with multiple linear regression analysis. Simultaneously, the variables of Indonesian seaweed exports in the previous year, value Seaweed exports in the export destination country, real GDP per capita in the export destination country and the real exchange rate of the export destination country have a significant effect. Partially, in the variable volume of Indonesian seaweed exports in the previous year, the value of seaweed exports in export destination countries was significant, while the real GDP per capita variables of export destination countries and the real exchange rate of export destination countries were not significant.

Keywords: Seaweed, Factors affecting, Exports.

INTRODUCTION

Southeast Asia's largest nation is Indonesia. In addition, with a vast maritime region, Indonesia is the world's largest archipelagic nation. There are roughly 81,000 km of coastline. With over 17,000 islands, 5.8 million km^2, or nearly 70% of the country's total area, is made up of sea. The 3.1 million km^2 of sovereign sea area and the 2.7 million km^2 Indonesian Exclusive Economic Zone (ZEEI) make up Indonesia's maritime territory. Based on these data, it can be determined that 64.97% of Indonesia's land area is made up of its sea area (Ali et al., 2021).

As per the findings of Daryanto (2007) (Kusdiantoro et al., 2019), the fishing industry in Indonesia is a fundamental sector that possesses the potential to influence the country's economy. In addition to being a vital resource for human life, the fishing industry has the potential to significantly influence the US economy. Based on four facts, this is said. First,

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both in terms of quantity and variety, Indonesia has outstanding fishing resources. Second, there are connections between the fishing industry and other sectors. In addition, Indonesia has a strong comparative advantage in the fisheries sector due to the potential of its resources. Third, the fisheries industry is based on national resources and is owned as such. The enormous territorial waters of Indonesia also prove that all Indonesian provinces are proven to have beaches(Arrazy & Primadini, 2021). The fisheries sector is considered to have been proven as a sector that can survive in crises and provide food for the community, a source of income, and absorb a large number of workers. This suggests that the fishing industry makes a contribution to GDP (gross domestic product). Table 1 shows how much Indonesia's GDP (gross domestic product) comes from the fisheries industry.

Table 1. Gross Domestic Product (GDP) Based on Current Prices and Percentage of Fisheries GDP for 2017-2021 (Billions of Rupiah)

FieldBusiness			Year		
	2017	2018	2019	2020	2021*
Based on the Current Price					
Fishery	226 833.20	238 616.20	252 278.60	254 112.30	267 966.60
Total GDP	1 258 375.70	1 307 253.00	1 354 399.10	1 378 331.40	1 403 710.00
GDP Without Oil and Gas	1 883 616.70	1 973 536.60	2 059 265.60	2 007 316.60	2 081 054.80
Fisheries GDP Percentage					
To Total GDP	18.02	18.25	18.62	18.43	19.08
GDP Without Oil and Gas	12.08	12.09	12.25	12.65	12.87

Source: (BPS Indonesia, 2022)

Based on Table 1, 2017, the fisheries sub-sector contributed to the Gross Domestic Product (GDP) of 226,833.20 billion Rupiah from a total GDP of 1,258,375.70 billion Rupiah or 18.02 percent of total GDP. This figure continued to increase the following year until it reached 19.08 percent of total GDP in 2021, with a value of 1,403,710.00 billion Rupiah. However, there are more results than this that the Indonesian fisheries sub-sector can provide. If all existing potential can be optimized, the fisheries sub-sector will play a more significant role in increasing Indonesia's GDP.

Shrimp, tuna, skipjack, grouper, pearls, and seaweed are examples of potential commodities in the fishing industry with extremely high economic value. One of the many marine and fisheries products that, when grown correctly, can have a big impact is seaweed.

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Seaweed farming on 1,110,900 hectares of land supports Indonesia's potential for seaweed raw materials. The lack of distinction between the stems, roots, and leaves of a class of marine plants known as seaweed. Seaweed called Eucheuma cottonii is widely grown in Indonesia. This species is frequently grown because it can be combined to make food, medicines, and cosmetic ingredients (Gultom et al., 2019). Seaweed has several advantages over other aquaculture commodities. These include simple cultivation technology, high export market opportunities, a short maintenance period, relatively little capital, and versatile processed products with production-technical and ecological functions. Nevertheless, improvements in seaweed cultivation technology continue to increase production performance, including the production of superior seeds from tissue culture (Indonesian Ministry of Health, nd).

Somalia (2002) (Safia, 2020) explained that seaweed could be used as a source of nutrition because it generally contains carbohydrates, protein, and a small amount of fat, most of which are salt compounds such as sodium and calcium. Seaweed is also a source of vitamins such as A, B1, B2, B6, B12, and C and contains minerals such as K, Ca, P, Na, Fe, and Iodine. According to the Department of Maritime Affairs and Fisheries (2009) in Ofori et al. (2020). Seaweed is one of the leading marine commodities that has received a renewal program from the government. Because the seaweed commodity has wide open export opportunities, it can become a source of foreign exchange income from exporting marine products.

Table 2. Export Volume and Value According to Main Marine Commodities 2017 - 2021

Commodity	2017	2018	2019	2020	2021	Trends(%)
Volume (Kg)	1,078,106,548	1,126,068,399	1,184,195,690	1,262,847,993	1,221,904,609	3.25
Shrimp	180,592,220	197,433,608	207,702,651	239,282,011	250,715,434	8.63
Seaweed	191,853,522	212,961,523	209,241,303	195,573,600	225,612,160	4.52
Tuna-Tuna-Skipjack tuna	198,151,578	168,433,759	184.130.234	195,759,299	174,764,040	-2.52
Cuttlefish-Octopus	120,399,288	152,108,581	143,847,343	140,036,315	168,225,555	9.60
Layur, Gulama, Reeve's	22,919,453	21,377,639	23,487,746	48,867,564	43,894,404	25,26
Other	364,190,487	373,753,288	415,786,413	443.329.203	358,693,016	0.35
Value (USD)	4,524,416,249	4,860,903,582	4,935,964,801	5,205,214,009	5,718,827,844	6.08
Shrimp	1,748,135,758	1,742,119,193	1,719,172,129	2,040,184,255	2,228,947,835	6.57
Tuna-Tuna-				724,095,088		

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Skipjack tuna	660.154.424	713,919,147	747.538.122		732,944,408	2.73
Cuttlefish-Octopus	397,333,386	554,594,192	556,290,651	509,223,240	618,934,663	13.24
Crab- Crab	409.816.291	472,962,123	393,497,774	367,519,713	613,245,483	14.72
Seaweed	204,871,977	291,837,226	324,849,979	279,582,592	345.114.331	15.82
Other	1,104,104,412	1,085,471,701	1,194,616,147	1,284,609,122	1,179,641,124	1.93
Source: (BPS Indonesia, 2022)						

Based on Table 2, the fisheries sector commodities exported are shrimp, seaweed, tuna, tuna, tuna, squid, squid, octopus, seaweed, gourd, and reeve's croakers. Meanwhile, fisheries export commodities with the most significant value in 2021: shrimp, tuna, tuna, squid, squid, octopus, crab, and seaweed. In the last 5 years, the trend in seaweed volume has increased by 4.52%. Realizing the vast market potential for seaweed in the global market, the Indonesian government has taken the initiative to increase the competitiveness of seaweed to increase profits in the global seaweed trade and improve the welfare of society, especially coastal communities. Increasing seaweed by increasing the value of Indonesian seaweed export products and implementing standardization as the primary reference for maintaining the quality of seaweed products(Khaldun, 2017). Indonesian seaweed export activities show that Indonesia can relatively meet domestic and foreign consumer demand, and Indonesian seaweed raw materials can compete with seaweed raw materials from other producing countries.(Dharmawan & Marhaeni, 2018).

Table 3. World Seaweed Exporters in 2021

Exporter	2021 Export Volume (Tons)	Percentage of Total Volume Export 2021	2021 Export Value (Thousand USD)	Percentage of Total Value Export 2021	Price per Ton (Thousand USD)
China	158,089,334	86.87	185,637,420	89.16	1.17
Chile	2,870,232	1.58	4,561,942	2.19	1.59
South Korea	5,192,848	2.85	5,403,064	2.59	1.04
Hong Kong	495.212	0.27	322.64	0.02	0.06
Philippines	1,388,863	0.76	2,225,631	1.07	1.60
Japan	896,525	0.49	771,285	0.37	0.86
France	2,470,125	1.36	3,134,892	1.51	1.27
Denmark	-	-	-	-	-
Vietnamese	8,612,700	4.73	5,437,530	2.61	0.63

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Spanish	1,974,520	1.08	1,039,697	0.50	0.53

Source: (UN Comtrade, 2022)

Table 3 shows world seaweed exporting countries' export volume and value in 2021. China has the largest export volume among these countries, with an export volume of 158,089,334 tons, and in 2021, Indonesia will not export to Denmark because processed seaweed for industrial purposes is decreasing in that country. If the government can regularly provide knowledge to fishermen, this will enable the Indonesian economy to be supported more by fishery exports, especially seaweed. With the above background, researchers are interested in conducting research titled "Factors Affecting Seaweed Exports in Indonesia."

METHODOLOGY

Indonesia was specifically chosen as the study area with purpose. Data from UN Comtrade from 2012 to 2021, which shows that Indonesia is still exporting seaweed to ten nations, corroborate this. Secondary data collection is the method employed. The World Bank, UN Comtrade, Ministry of Trade, Ministry of Agriculture, and Indonesian Central Statistics Agency (BPS) provided secondary data. Analyzing the variables affecting Indonesian seaweed exports to ten export destination nations is the research methodology. The MS software was used to process the data. Multiple linear regression analysis in Excel and SPSS.

RESULTS

Determination Coefficient (R^2)

The regression model for seaweed exports from Indonesia to ten nations. The R-squared value for export was 0.9833. This figure indicates that 98.33 percent of variations in Indonesian seaweed exports can be attributed to model independent variables, with variables outside the model accounting for the remaining 1.67 percent of the variation. It is determined that the model is free of violations of classical assumptions based on the outcomes of the model evaluation using econometric criteria and statistical criteria. An estimated equation, LnVXit = 54.38851 + 0.323658LnVXit-1 + 0.679816LnPXit + 0.036735LnGDPit + 0.34295-2LnERit + μi*t*, is obtained after regression is performed on the data.

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F test

The statistical F test is used to determine the effect of all independent variables on the dependent variable at a confidence level of 95 percent or at (α) 95 percent. In the table the probability value of F statistics has the value is 0.000000 which is smaller than alpha 0.05. This means that in together the dependent variables in the model have a significant effect on dependent variable at a real level of 95 percent.

T-test

The statistical t-test is used to determine the effect of the coefficient of each independent variable on the dependent variable. In the model equation shows that the independent variable is the volume of seaweed exports Indonesia's in the previous year (0.0000) and the value of seaweed exports in the country export destination (0.0000), that is mean the volume of seaweed exports Indonesia in the previous year and the value of seaweed exports in the country export destination have significant effect on the variable dependent, while real GDP per capita of export destination country (0.2190). and value the real exchange rate of the export destination country has a value of (0.7735), greater than alpha 0.05 So it does not have a significant effect on Indonesian seaweed exports 2012-2021.

CONCLUSION

Simultaneously, the variable volume of Indonesian seaweed exports in the previous year, value Seaweed exports in the export destination country, real GDP per capita in the export destination country and the real exchange rate of the export destination country have a significant effect. Partially, in the variable volume of Indonesian seaweed exports in the previous year, the value of seaweed exports in export destination countries was significant, while the real GDP per capita variables of export destination countries and the real exchange rate of export destination countries were not significant.

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