

## Analysing The Factors Hampering Tanzanian Agricultural Export To The European Union

### *Analysing The Factors Hampering Tanzanian Agricultural Export To The European Union*

Francis Raphael Sendalo<sup>1</sup>, Ary Bakhtiar<sup>1</sup>, M. Zul Mazwan<sup>1</sup>  
<sup>1</sup> Universitas Muhammadiyah Malang



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).

Copyright (c) 2023 Jurnal Agribest



Corresponding Author: Francis Raphael Sendalo, Universitas Muhammadiyah Malang, [raphaelfrancis3@gmail.com](mailto:raphaelfrancis3@gmail.com)

### ABSTRACT

*The supply of Agricultural Products to the EU country has not been able to meet the consumers demand so that the fulfillment of demand, Agricultural production must be improved. This study aims to analyze the factors that influence Agricultural exports in Tanzania to the EU countries. The research method uses quantitative analysis techniques, namely Panel data regression. This research was conducted in Tanzania using secondary data from 2002-2020 obtained at the National Bureau of Statistics, World Bank and the Ministry of Agriculture and other literature related to research. Research variables include Value of Exports, exchange rates, GDP per capita, Proximity distance, and Ecolabing. The results showed that variables GDP per capita, milk exports, and milk production have a positive influence. Meanwhile, the exchange rate has negative influence for agricultural exports..*

Keywords: *Export, Agricultural products, Real exchange rate, Ecolabing, Gross Domestic Product.*

### PENDAHULUAN

Agriculture is certainly the largest and most important sector of the Tanzanian economy, with the country benefiting from a varied production base that includes livestock, staple food crops, and a number of income crops. Tanzania's agricultural business is one of the most important economic sectors. Over 80% of Tanzanians work in agriculture and live in rural areas. Moreover, Agriculture, being as one of Tanzania's mainstay backbone economy, also faces challenges in the international market, the demand of those products raw materials and its processing products are very high, especially for people who stay in America, Asia and European Union (EU). Therefore, Tanzania is trying to increase the volume export of agricultural products to the world.

Tanzania has rich natural resources for agricultural development. The country has 94.5 million hectares of land of which 44 million hectares are classified as arable, but only 24% of the arable land is under cultivation. Of the 50 million hectares, suitable for livestock, only 26 million hectares is under use while the rest cannot be accessed mainly due to tsetse fly infestation. It has the third largest livestock population in Africa after Sudan and Ethiopia.(Chiv et al. 2016).

The main export destination countries of Tanzania's agricultural commodities are India, China, Pakistan, Germany, Belgium, U.S, Netherlands and U.K, for commodities like tobacco, cashew nuts, sesame seed, sunflower and so on, in all the main export destinations of Tanzania are European Union, US, and Asian countries. The total market share of some countries reached in 2010 was 31.7% of the overall Tanzania exports to the world. This indicates the importance of the EU market for the export of agricultural products.

Due to significant performance in the exports of travel, tourism, and other business services between 2005 and 2011, the balance of trade in services was positive and receipts climbed by 80%. In 2011, service revenue increased to US\$2.36 billion, of which 83% came from travel and transportation services. According to (Fiankor, Haase, & Brümmer, 2021) analysis shows that standards reduce trade but even more so for countries that trade smaller volumes Improvements in cargo clearing at Dar es Salaam port and an increase in the volume of transit commodities to and from neighboring countries were also factors in the rise in

transportation receipts. Increases in the number of foreign visitors, the average length of stay, and the average cost per person per night all contributed to an increase in travel revenues. Services payments totaled US\$ 2.16 billion in 2011, up nearly 17% from the prior year., , representing an increase in international freight rates (associated with an increase in goods imports) and travel. (“Annex 4 Tanzania,” n.d.)

The purpose of this study was to analyze the factors hampering Tanzania’s agricultural export and does the implementation of the EU’s Ecolabelling Regulation have an impact on Tanzania’s agricultural export performance between 2002-2020. Exchange rates, GDP per capita, Proximity distance, Dummy of Ecolabelling and value of Real Export are some of the variables examined.

### METODE PENELITIAN

According to the previous model of export determinant factors, the export of goods is determined by both supply and demand factors. On the demand side,(Khan 2019), Gunawardhana, and Gu cite the gross domestic product (GDP) of destination countries as a factor influencing export. GDP is used to calculate the economic size of nations by serving as a proxy for their trade partner countries' income. Meanwhile, Gunawardhana and Gu factored in the sending country's per capita GDP. Khan, Gunawardhana, and Gu conducted prior research that identified the real exchange rate as a factor influencing export. The final independent variable introduced by Gunawardhana and Gu in their study is proximity distance

The model suggested in this thesis would utilize the most significant variables from previous studies on the determinants of export demand.(Gu 2008)He has wrote the research about the reason’s behinds China’s fast export growth. He used Gravity Model approach Furthermore, the dummy variable of time implementation has been added as a proxy of EC Regulation No.2002/2013 (before 2013 the variable is 0 and after the year is 1) as one of the variables influencing Tanzania’s agricultural export:

$$\text{LnRX}_{ijt} = \beta_0 + \beta_1 \text{LnPGDP}_{jt} + \beta_2 \text{LnPGDP}_{it} + \beta_3 \text{LnDIS}_{ijt} + \beta_4 \text{LnRER}_{ijt} + B5 \text{DNTB} + e_{ijt} \dots \dots \dots (1)$$

Whereas: Ln RX<sub>ijt</sub> = Real Export value of country i for country j and time t, β<sub>0</sub> is constant, LnPGDP<sub>jt</sub> = Real GDP per capita of partner country j in time t, LnPGDP<sub>it</sub> = Real GDP per capita of country i (Tanzania) in time t (GDP nominal of Tanzania divided by GDP deflator of Tanzania multiplied 100 and divided by the total population of destination countries), LnDIS<sub>ijt</sub> = Proximity distance of country i to country j multiplied by Oil Price, as a proxy of transportation cost, Ln RER<sub>ijt</sub> = Real Exchange Rate between country j and I (P<sub>f</sub> is the foreign price level and P the domestic price level. P and P<sub>f</sub> must have the same arbitrary value in some chosen base year, DNTB = Dummy for EU’s non-tariff barriers on Agricultural products (0 = pre of EC Regulation No.2002/2013 validation, 1= post of EC Regulation No.2002/2013 validation), e<sub>ijt</sub>= Error term.

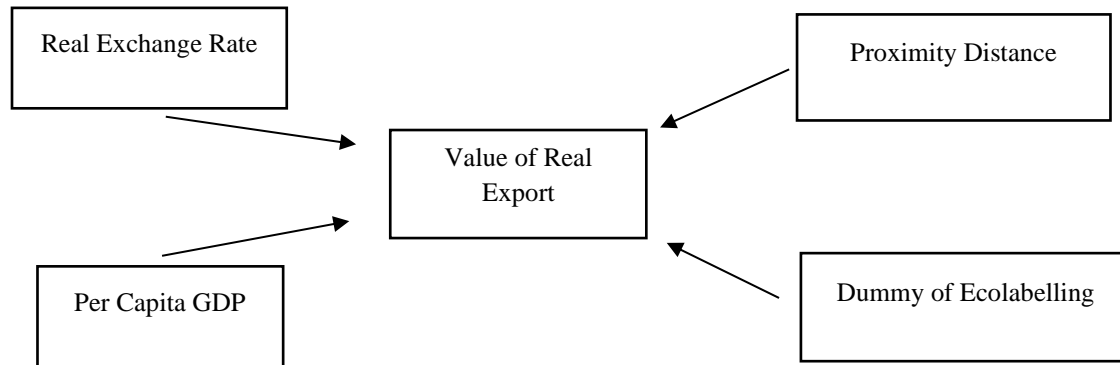


Figure 1. Research Model

The equation for F-test or Chow Test as follows:

$$F = \frac{(SSR1 - SSR2) / (N - 1)}{SSR2 / (NT - N - k)} \dots \dots \dots (2)$$

whereas:

- SSR1 = The residual sum squares of restricted model (PLS Model).
- SSR2 = The residual sum squares of unrestricted model (FEM).
- N = The number of cross-sectional units.
- T = The number of time series.
- K = The number of explanatory variables (including the intercept).

The data panel regression combines cross-sectional and time-series statistics. This thesis will use panel data to study how various commodities behaved over a specific time span. Data panels can also be thought of as cross section data repeated, which may provide any researcher with the chance to quickly learn about dynamic change. According to (Gujarati & Porter 2003), The quality and quantity of the data could be improved by combining cross section and time series data, which is not feasible when using just one of the two demission forms.

## HASIL DAN PEMBAHASAN

According to the summary of estimation results presented in the table.1.the adjusted  $R^2$  of the model is 0.6136, which means that the model can explain the determinant factors for Tanzania's agricultural export demand to 11 European Union and the impact of Ecolabelling regulation and the rest can be explained by other variables. Except for the dummy of Ecolabelling regulation, four variables have the same signs as the expected signs (the real per capita GDP of partner countries, the real per capita GDP of Tanzania, distance, and RER). Three of the five variables—the real per capita GDP of Tanzania, the proximity distance, and the real exchange rate—are significant, whereas the other two—the real per capita GDP of the partner countries and the dummy of the Ecolabelling Regulation—are not significant at any of the significant levels.

The real per capita GDP the variable exhibits a positive sign. It means that an increase of 1% in Tanzania's real per capita GDP will result in an increase of 0.01% in agricultural exports from Tanzania. (ceteris paribus). Additionally, Tanzania's GDP growth at the indicated level ( $\alpha = 5\%$ ) is important. The simulation result's GDP coefficient value likewise shows an inelastic relationship between Tanzania's GDP and export value, indicating that Tanzania's GDP growth is not very responsive to changes in its agricultural export. This supports the findings of research by Gunawardhana and Gu that a country's export benefits from the GDP per capita of an exporting nation

The Proximity distance the regression's findings, the distance independent variable has a negative sign. Distance has a negative impact on export value, which is indicated by the probability level of 95%. Additionally, every 1% increase in distance will result in a 0.001% decrease in export value.(ceteris paribus). Additionally, the relationship between distance and export value change is not elastic.

Real exchange rate displays a positive sign, as anticipated. It indicates that the real exchange rate has a favorable impact on the export value. Tanzania's exports will decline as a result of its currency's appreciation (in terms of foreign exchange) because its products will become more expensive. Instead, because Tanzanian goods will be more affordable, the depreciation of the country's currency will increase exports. This is in line with studies by Khumar and Dhaman, Gunawardhana, and Gu(Kristjánsdóttir 2005) that found that a country's export success was influenced by its real exchange rate.

Unexpectedly, the regression results show that Dummy Regulation No 2002/2013, the independent variable, has a positive sign. When attributing this favorable impact to the value of exports, there is a 40% chance that a Type I error will be made. The coefficient value indicates that the application of EC No. 2002/2013 has little impact on Tanzania's agricultural exports and is not a major component in the expansion of those exports.(Hillman 2010)he used this on the non- tariff barriers .The rise in Tanzania's export value is probably due to other factors.

**Table 1.** The Result of Classical Assumption Test

Information	Critical Value	Result
Normality test	p value > 0,05	0,305042
Multicollinearity test	VIF < 10	< 10
Heteroscedasticity test	Prob. Chi Square > 0,05	0,4874
Autocorrelation test	Prob. Chi Square > 0,05	0,9093

**Tabel 2.** The coss-section effects of the European Countries

Cross-section	Fixed Effects
Spain	6794081
Germany	1431012
Uk	9739639
France	5155790
Canada	-1341901
Italy	5899107
Poland	-1121612
Denmark	-9815698
Sweden	-1548649
Belgium	8644995

Source : Secondary data processed (2023)

### KESIMPULAN

From the objective we have, it can be conducted that the regression using panel data. In accordance with the result and analysis of relapse, there are several points can be concluded, which are stated as follows, Real per capita Gross Domestic Product (GDP) of trading partners has a positive impact on Tanzania's Agricultural export to EU countries meanwhile real per capita GDP of Tanzania also has a positive and significant impact on Tanzania's Agricultural export to EU countries also shows that proximity distance affects Tanzania's Agricultural export to EU countries negatively and significantly. Tanzania's agricultural exports to EU countries are strongly and positively influenced by the real exchange rate. Additionally, the four variables mentioned above are either too inflexible or not responsive enough to the changes in Tanzania's agricultural export.

The Dummy Ecolabelling Regulation No 2002/2013 does not affect Tanzania's Agricultural export. Because agricultural exports within the EU increased significantly after the establishment of the Ecolabelling regulation, the imposition of the standard has a positive impact on the EU. On the other hand, the introduction of the Ecolabelling standard has a negative impact on the exporting nation that must adopt the standard because it will result in significant costs as they must modify their products to comply with new regulations.

Therefore, to manage and increase Tanzania's Agricultural export, Government should take policies and strategies to meet the requirement and fulfill the standard.

### DAFTAR PUSTAKA

- "Annex 4 Tanzania." n.d.
- Chiy, Rachana, Fengying Nie, Shu Wu, Sokea Tum, Nwalem Monday Patrick, Ukpe Udeme Henrietta, Raoul Fani, et al. 2016. "The United Republic of Tanzania Final Draft Agricultural Sector Development Strategy-Ii." *Journal of Sustainable Development* 9 (1): 1–5.
- Fiankor, Dela Dem Doe, Oliver Ken Haase, and Bernhard Brümmer. 2021. "The Heterogeneous Effects of Standards on Agricultural Trade Flows." *Journal of Agricultural Economics* 72 (1): 25–46. <https://doi.org/10.1111/1477-9552.12405>.
- Gu. 2008. "A GRAVITY ANALYSIS OF CHINA ' S EXPORT GROWTH By PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF." <https://core.ac.uk/download/pdf/56373014.pdf>.
- Gujarati, Damodar N, and Dawn C Porter. 2003. "Panel Data Regression Models." *Basic Econometrics* 4.
- Hillman, Jimmie s. 2010. "Nontariff Barriers: Major Problem in Agricultural Trade." *American Journal of Agricultural Economics* 60 (3): 491–501. <https://doi.org/10.2307/1239946>.
- Khan, Saad Uddin. 2019. "Exchange Rate Volatility and Aggregate Bilateral Exports of Pakistan: An Empirical Analysis." *Scholars Bulletin* 05 (12): 775–86. <https://doi.org/10.36348/sb.2019.v05i12.012>.
- Kristjánsdóttir, Helga. 2005. "A Gravity Model for Exports from Iceland." *Centre for Applied Microeconometrics Working Paper No 2005-14*, 1–57. <http://core.kmi.open.ac.uk/download/pdf/6679353.pdf>.