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Determinants of South African agricultural exports to African markets

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Orientation: The 'Africa we want, 2063 Agenda' is slowly becoming a reality. On 01 January 2021, business operations of the African continental free trade area officially took off. Member states are currently negotiating concessions and are in the process of fully eliminating trade barriers to allow duty-free access into their markets.

Research purpose: The purpose of this study is to clearly identify constraints that could potentially jeopardise the long-run success of the free trade area by exploring the fundamental constraints limiting increased intra-African agricultural trade.

Motivation for the study: Results of the study will help South Africa to better leverage the African free trade area and take advantage of export market opportunities.

Research approach/design and method: Using panel data that span from 2000 to 2021, the study estimated an augmented gravity model to evaluate the influence of selected explanatory variables on South African agricultural exports to African markets.

Main findings: The results of the fixed effect model revealed that South African agricultural exports are directly proportional to gross domestic product (of both the importer and exporter) and inversely proportional to geographic distance. The results also showed that dummy variables such as infrastructure and participating in the same regional bloc play an important role in exacerbating export-led growth.

Practical/managerial implications: In practice, when structural policies are put in place to address issues such as infrastructure development, countries will experience increased export participation.

Contribution/value-add: The study seeks to contribute to knowledge by identifying the main determinants of greater intra-African trade.

Keywords: regional trade integration; trade liberalisation; gravity model; agricultural exports; African continental free trade area.

Introduction

As South Africa becomes a great superpower in Southern Africa and one of the largest exporting countries in Africa, regional integration and export diversification have become a central focus of the South African trade policy. As a result, South Africa's exports to the world reported a steady increase over the past decade (International Trade Center [ITC] 2021). This is partly because of international trade agreements that have enabled South Africa to benefit from preferential trade treatments. Some of these trade agreements include the Southern African Customs Union (SACU) and the recently established African Continental Free Trade Area (AfCFTA).

The AfCFTA is a continent-wide free trade area for all member states that have deposited instruments of ratification with the African Union (AU). The Free Trade Area (FTA) was established in January 2012 by 54 African countries and started its operations on 01 January 2021 (Tralac 2020). The free trade area encompasses high-level goals aimed at enhancing trade integration in Africa and advancing the single African market initiative as envisioned in the 2063 African Agenda project (Mkandawire 2005). The AfCFTA, although still at its infant stages of doing business, is expected to create a more diversified export market for South Africa's agricultural sector. The FTA will potentially lead to strategic regional value chains for African countries. Diversifying South African exports to the rest of the African continent is among the main goals of South Africa's trade policy. However, efforts to diversify agricultural exports

beyond the Southern African region have become impossible. During the past decade, South Africa experienced a trade deficit with East, West and North Africa (ITC 2021).

Trade data extracted from the ITC (2021) reveal that South Africa's agricultural exports are concentrated within the SADC, and South Africa is enjoying a trade surplus in this region. Studies exploring factors influencing South Africa's agricultural trade with the rest of Africa are limited and scant. Therefore, it is still not clear what drives trade integration in Africa.

Against this background, this study constitutes one of the first attempts to understand the determinants of South Africa's agricultural exports to the rest of the African continent. The study's findings will make it possible for South African policymakers to reprioritise efforts in an agricultural export promotion strategy and enhance cooperation between AU member states.

South Africa's trade performance with African markets

South Africa is a member of multiple trade arrangements with certain African nations, particularly, with Southern African counties. These trade treaties are intended to promote economic integration by fostering free movement of goods and services, elimination of trade barriers and investment in agriculture (Daya, Ranoto & Letsoalo 2006). Some trade agreements include SACU, SADC-FTA and the AfCFTA. Despite committing to bilateral and multilateral partnerships in Africa, it is not clear whether South African agricultural trade fully benefits from these trade arrangements or not. This assertion is supported by the recent and previous non-tariff barriers imposed by some SACU member states on South African food imports. If not addressed appropriately, non-tariff barriers could pose the greatest threat to trade integration in Africa.

Figure 1 (a) depicts South Africa's major agricultural exports to African markets for the period 2017–2021. South Africa's top three agricultural exports to African markets included beverages, cereal and edible preparations, each contributing an average of R8.1 million, R5.6 million and R5.6 million to the total value of all agricultural exports, respectively. Figure 1 (b) details South Africa's top three agricultural imports from Africa, which include sugar, live animals and fish, each contributing an average of R4.5 million, R2.4 million and R1.8 million, respectively.

Figure 2 (a) depicts South Africa's major export destinations to both the world and Africa for the period 2017–2021. The analysis shows that South Africa's leading export destinations for agricultural products are the Netherlands and the United Kingdom, contributing an average of R14 million and R12 million, respectively. These findings contradict with international trade theory postulating that countries trade more when they are geographically close to each other (Tinbergen 1962).

The cause of this contradiction is not clear, and this study will unveil some of the significant determinants of South Africa's agricultural trade. Another important observation from Figure 2(a) is that South Africa's major export destinations are concentrated in the Southern African region. These findings can partly be explained by the fact that South Africa has a preferential trade agreement with Mozambique and share a customs union with Namibia and Botswana.

Figure 2 (b) shows South Africa's top agricultural import sources from 2017 to 2021. Thailand, Brazil and Argentina are leading exporters of agricultural products to the South African market, each exporting products with an average value of R7 million, R5 million and R5.1 million, respectively. Given the currently negotiated AfCFTA, the results reflect potential export opportunities for African countries to tap

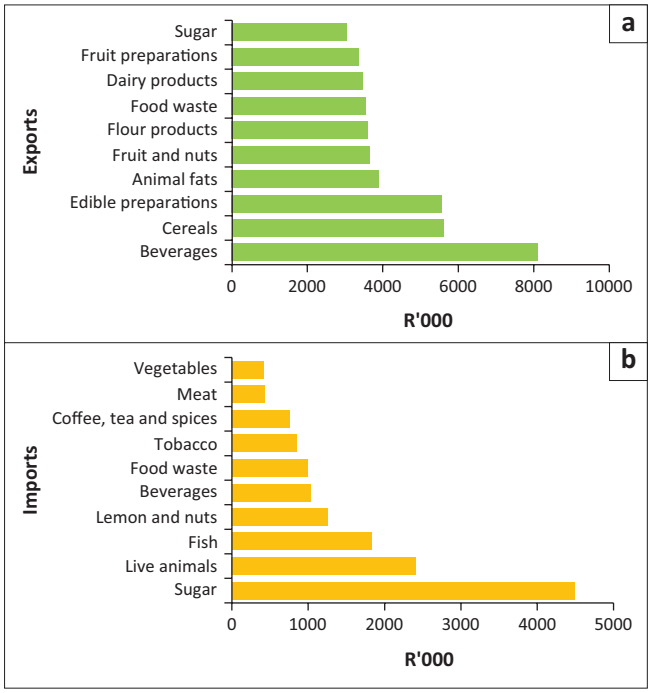

FIGURE 1: South Africa's agricultural trade with African markets (2017–2021).

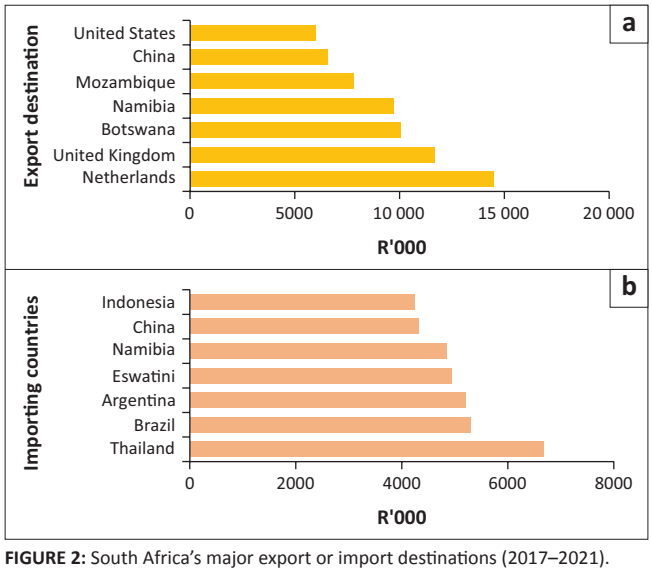

FIGURE 2: South Africa's major export or import destinations (2017–2021).

into the South African market and compete with agricultural imports from Thailand, Brazil, Argentina and other non-member states of the AfCFTA.

South Africa maintained a positive trade balance with the rest of Africa over the 5 years (2017–2021), as shown in Figure 3. The trade surplus grew at an average rate of R55 million to R66 million over the 5 years under study. Surprisingly, the COVID-19 pandemic did not impede trade flows during the 2020–2021 period; agricultural exports grew from R64 million to R66 million. Even though South Africa has boosted a positive trade balance with African countries for the period under study, the nation's export basket is still concentrated in the Southern African region. The establishment of the AfCFTA will play a crucial role for South Africa in penetrating East, West and North African export markets.

Literature review

The concept of trade openness may be attributed to the theories of absolute advantage by Adam Smith and competitive advantage by David Ricardo, which emerged throughout the 18th century. According to Adam Smith (1776), nations have the potential to accrue wealth through the process of international trade and specialisation, leveraging from absolute advantage in terms of labour productivity (Abbott, Bentzen & Tarp 2008; Chang; Kaltani & Loayza 2009). Classical economists assume that free trade is the driver of prosperity and that trade restrictions contribute to wasteful resources, negatively affecting economic growth (Balassa 1978; Chandran & Munusamy 2009; Chang, Kaltani & Loayza 2005; Krugman & Obstfeld 2006).

Contrary to the given assertion, trade liberalisation critics claim that trade openness is risky and may even harm economic growth (Chang et al. 2009; Rodriguez & Rodrik 2001; Stiglitz & Charlton 2005). Trade liberalisation does not improve the economic condition of rural households or the middle class; instead, it leaves them in the worst state. Whether or not a country gains from international trade depends on a string of variables, and some will be quantified in this study.

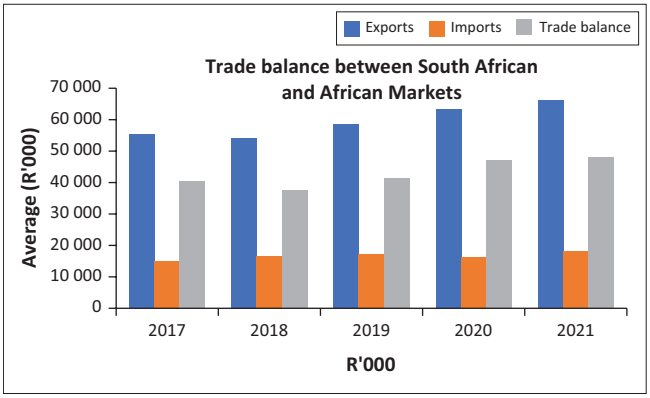

FIGURE 3: South Africa's agricultural trade balance with Africa (2017–2021).

Empirically, the main determinants of trade integration in developed and developing countries have been the topic of interest for decades. For example, Rashad (2001) investigated the determinants of intra-regional trade in Southern Africa using a gravity model. Findings revealed that both economic and structural factors are the main drivers of trade flows in the Southern African region. Contributing factors included transaction cost, changes in per capita income and the growth path of economies.

Ntembe and Tawah (2012) applied an augmented gravity model on panel data to analyse the factors influencing trade integration between member states of the Central African Economic and Monetary Union. The study showed that distance between members and being landlocked were the main obstacles to trade flow.

Seid (2013) conducted a study exploring the main determinants of African intra-regional trade. The study followed the theoretical gravity framework of Anderson-van Wincoop (Anderson 1979). Factors such as distance, real exchange rate, language, population and gross domestic product (GDP) (both importer and exporter) were reported to be the main determinants of trade integration in Africa.

A study conducted by Potelwa, Lubinga and Ntshangase (2016) investigated the factors influencing South African exports' growth to international markets. The study applied a gravity model covering the period 2001–2014. The findings revealed that political stability, strong economic growth, the distance between trading partners, population and the existence of a trade agreement positively influenced South Africa's agricultural exports to the world.

A more recent study undertaken by Abdullahi et al. (2021) applied an extended gravity model to identify factors that influence Nigeria's agricultural exports to the European Union for the 1995–2019 period. The study concluded that both trading partner' economic size (GDP) and distance positively influence agricultural trade flows. On the contrary, both trading partners' income (per capita GDP) and bilateral exchange rate affected trade flow negatively.

Conclusively, based on the literature reviewed here, it was discovered that several trade-related studies relied heavily on the basic gravity model to assess the determinants of trade integration. Furthermore, only a few of these studies centred around intra-agricultural trade, implying less research has been published on this sector. This study seeks to extend the basic gravity model and estimate an augmented model in order to assess more variables that are significant in determining export growth. Adding more variables to the basic model will allow for a better interpretation and understanding of what exactly influences South African agricultural exports to African countries.

Research methodology and data sources

Evidence from literature suggests that the gravity model is a valuable analytical tool for quantifying the determinants of trade integration and is applied chiefly to evaluate the relationship between trade volume and bilateral trade direction. Tinbergen (1962) was among the early pioneers of integrating the idea of Newton's Law of Gravity to explain bilateral trade flows. He added that the mass of a given nation, generally measured by its GDP, is the most significant element in a country's attractiveness to other nations. However, the attractiveness aspect will be minimised by the distance between trading nations, which acts as an obstacle to trade integration.

Therefore, the basic form of the traditional gravity model of trade incorporates the total trade volume of the product, economic mass of trading partners and the distance between trading partners (Krugman et al. 2012). The relationship between these variables is denoted as:

$$T_{ij} = \frac{A^{\gamma_i \gamma_j}}{D_{ij}}$$

Where i represents the exporting country; j represents the importing country; T_{ij} represents trade volume between country i and j; represents a constant; γ_i represents the GDP of the exporting country i; γ_j represents the GDP of the importing country j; and D_{ij} represents the distance between trading countries i and j.

Evidence from empirical literature postulates that the traditional form of the gravity model is commonly estimated in its log-linear version. As a result, using natural logarithms, the original form of the model is denoted as:

$$lnT_{ij} = lnA + \alpha_1\ lnY_1 + \alpha_2 lnY_j + \alpha_3 lnD_{ij} + \varepsilon_{ij}$$

Where D_{ij} is expected to return a negative coefficient because trade volume and distance are inversely proportional. Numerous authors such as Marimoutou, Peguin and Peguin-Fessoille (2009) have developed and augmented the basic form of the gravity model, with the aim of enhancing the analytical strength and empirical applicability of the model. In line with these authors, the basic gravity model is augmented to investigate other factors influencing trade integration in Africa.

Dummy variables, such as infrastructure, common language and the existence of a regional trade agreement (RTA), are augmented to the traditional gravity model to understand better the determinants of trade flow between nations (Martinnez-Zarzoso & Nowak-Lehmann 2003). In his study, Bergstrand (1985) added the population size variable to the traditional gravity model, while Oguledo and MacPhee (1994) included the infrastructure variable. Several experiments, such as those conducted by Matyas (1997) and Tri Do (2006), have expanded the traditional gravity model by adding the exchange rate variable. This study also follows an augmented gravity model applied by several scholars (Breusch & Egger 1999; Jakab, Kovacs & Oszlay 2001; Martinnez-Zarzoso & Nowak-Lehmann 2003; Oguledo & MacPhee 1994). The equation for the augmented gravity model is expressed as follows:

$$\begin{aligned} \ln EXP_{it} = {} & \beta_0 + \beta_1 lnVNGDP_{it} + \beta_2 lnICGDP_{ij} \\ & + \beta_3 REXCH_{it} + \beta_4 lnDIS_i + \beta_5 RTA_{it} \\ & + \beta_6 INFRA_{it} + \beta_7\ MLANG_{it} + \mu it \end{aligned}$$

Where lnEXPit is the logarithm of South Africa's agricultural exports to country i in the year t; lnVNGDP it is the logarithm of South Africa' GDP at the year t; $\ln ICGDP_{jt}$ is the logarithm of importing country i's GDP at the year t; $REXCH_{it}$ is the real bilateral exchange rate between South Africa and country i's currency at the year t; $\ln DIS_i$ is the logarithm of the distance between South Africa and importing country; RTA_{it} is a dummy variable, which is equal to 1 if South Africa and the importing country belong to a regional trade arrangement, and 0 otherwise; $\beta_7 INFRA_{it}$ is an index containing a comprehensive rating for the infrastructure of each country. The higher the rating, the greater the infrastructure of the country; β_8COMLANG is a dummy variable, which is equal to 1 if South Africa and the importing country have a common language, and 0 otherwise; μit is the error term, and β_0 … B7 are parameters to be estimated.

The researcher chose the given model variables because of their relevance to trade integration in Africa, their use in past research and data availability. A description of the variables selected in the model is summarised in Table A1 under the appendix section.

Data

An augment gravity model was estimated using panel data from 54 African countries covering a period of 18 years, from 2000 to 2018. The period 2000–2018 was selected because of the availability of trade data and other macro-economic level data required to run the model. The data sources for the model included GeoDist; World Bank's World Development Indicators; and World Bank's Trade, Production and Protection database. Data for agricultural trade (imports and exports) were obtained from the international trade centre's trade map. A list of all the countries included in the model is provided in Table A2, under the appendix section.

Panel data estimation procedure

Panel data allow for the estimation of a wide range of models such as the pooled ordinary least squares (OLS), fixed effects and random effects models. The pooled OLS model was estimated in this study following the ordinary least square regression. However, this model was not the best fit, as it does not account for country heterogeneity. It excludes country-specific variations and assumes homogeneity (Gujarati & Porter 2009). To acquire robust findings and

avoid apparent statistical problems, it was critical to utilise either the fixed effects or random effects model.

To achieve this, the Hausman test was used to determine whether the fixed effects and random effects estimators vary considerably, that is, to test the null hypothesis that both methods are consistent and provide comparable coefficients. If the *p*-value (Prob > chi^2) is less than 0.05 and significant, the fixed effects model will be employed. If the *p*-value is more than 0.05, the random effects model is the most efficient. The presence of heteroscedasticity in the model residuals is confirmed using the modified Wald test.

Ethical considerations

This article followed all ethical standards for research without direct contact with human or animal subjects.

Results and discussion

The study's main objective is to identify factors that influence the growth of South Africa's agricultural exports to African markets. This section provides a comprehensive discussion of the results of the augmented gravity model applied to achieve the study's objective.

Model selection

The Hausman test was employed to determine the best model between the pooled OLS, random effects and fixed effects models. Initially, the study compared the fixed effects and random effects models against the pooled OLS model, and the findings are summarised in Table 1. The results unequivocally indicate that both the fixed effects and random effects models outperform the pooled OLS model.

Subsequently, the author conducted a direct comparison between the fixed effects and random effects models. The estimation results revealed that the fixed effects model exhibits superior performance over the random effects model (*p*-value < 0.01).

Heteroscedasticity and serial autocorrelation check

Diagnostic tests were conducted to evaluate the presence of heteroscedasticity and serial autocorrelation within the best-performing model. Specifically, the modified Wald test was performed to examine groupwise heteroscedasticity, and the Wooldridge test was used to assess autocorrelation within panel data.

The results of the diagnostic tests indicated insignificance in both cases, suggesting that neither heteroscedasticity nor autocorrelation significantly influenced the model's performance. The chi-square statistic for heteroscedasticity was 6.189 with a corresponding *p*-value of 0.045, indicating that the variations in error terms across observations were not significantly different. Similarly, the F-statistic for autocorrelation was 4.652, yielding a *p*-value of 0.063, suggesting that temporal dependencies within the data did not materially affect the model's outcomes.

TABLE 1: Hausman test results.

Parameters	Fixed effects	Random effects
Chi-square test value	82.084	93.543
Prob > chi^2	0.000	0.000

Model estimation results

The results of the augmented gravity model are presented in Table 2. The model regressed the dependent variable (South African agricultural exports) against a set of independent variables: the exporter's GDP, common language, RTA, population, distance, exchange rate, importer's GDP and infrastructure. The model results show that the per capita GDP of both the domestic and partner countries, the distance between trading countries, the existence of the RTA and the current state of infrastructure are statistically significant and retain a *p*-value below the 5% significance level.

Exporter and Importer's GDP: The per capita influence of GDP reflects a country's economic growth and the effectiveness of trade integration. This means a higher GDP will most definitely have a favourable impact on economic growth (Oleh & Peter 1997). According to the fixed effects results presented in Table 2, the elasticities of the traditional gravity model variables, domestic (GPD_i), partner (GPD_j) and distance between trading partners ($DIST_{ij}$) yielded their expected signs and are statistically significant as expected (Hatab, Romstad & Huo 2010). Therefore, South Africa's agricultural exports are directly proportional to its domestic GDP and the GDP of her trading partner and inversely

TABLE 2: Fixed effects, random effects and pooled ordinary least squares estimation results (2000–2018).

Variables	Fixed effects	Random effects	Pooled OLS
Log (GDP_i)	2.112**	2.071	1.905***
	(0.015)	(0.000)	(0.00)
Log (GDP_j)	0.159**	0.217	0.033
	(0.0307)	(0.217)	(0.716)
Log (POP_{ij})	0.126	0.058	0.34***
	(0.663)	(0.93)	(0.00)
Log ($Dist_{ij}$)	-1.116**	0.00	-0.127
	(0.042)	(0.00)	(0.630)
Log (ExchangeR)	-.014	-0.010	-0.136***
	(0.74)	(0.791)	(0.00)
Log (Infrastructure)	2.01**	-	2.00
	(0.011)	-	(0.50)
ComLanguage	0.092	-	0.645
	(0.918)	-	(0.00)
RTA	2.93**	-	2.134***
	0.020	-	(0.001)
Constant	-61.69	-51.078	-42.148
Sigma u	7.405	3.111	-
Sigma e	1.204	1.2044	-
rho	0.974	0.866	-
Wald test chi	6.189	-	-
Wooldridge F	4.652	-	-
Observations	1227	1227	1227

OLS, ordinary least squares; GDP, gross domestic product; RTA, regional trade agreement.
Note: ***, $p < 0.01$; **, $p < 0.05$; *, $p < 0.1$.

proportional to the geographic distance between countries. Based on the parameter coefficients, a 1% increase in the domestic country's GDP will lead to a 2.11% increase in agricultural exports. Similarly, a 1% increase in the importing countries' GDP will lead to a 0.16% increase in imports.

Regional trade agreement: Suppose South Africa and any African Union country share a regional trade agreement; it is expected that the model will return a positive coefficient of the dummy variable as both countries are trading duty free. Likewise, a negative coefficient represents the trade diversion effect (Bayoumi & Eichengreen 1995). The RTA variable was included in the model to assess the role of the existing RTA on South African agricultural exports to African markets. The model results for the RTA variable are statistically significant at $p = 0.020$. Similar findings by Alam (2010) were also recorded between ECOWAS trading partners.

The coefficient (2.93) is highly significant and implies that countries belonging to the same regional trade area traded with each other more than they would have if they did not have a common regional agreement. In other words, South Africa will export more agricultural commodities to SADC countries because of the preferential treatment offered between trading partners. It will export less to other African regions because of the absence of an RTA as reported by the study results.

Distance: It is expected that South Africa will export fewer agricultural products to African countries that are geographically located far from its borders, mainly because of transport costs. The model results are consistent with this sentiment returning a negative and statistically significant coefficient of -1.116. The results of the model suggest that South Africa's agricultural exports to African markets are dependent on distance, similar to the findings reported by Markheim (2009). In addition, it is paramount to mention that the impact of distance on trade flow is highly debated in trade theory. Traditionally, distance was viewed as an obstacle to the flow of goods between countries (Tinbergen 1962). However, findings from recent studies claim that there is no relationship between distance and export growth (Marimoutou et al. 2009), in contrast to the results of this study.

Infrastructure: The infrastructural index is extracted from a systematic evaluation of a country's infrastructural systems and incorporates different variables, from logistics and telecommunications, institutions and ports. The index was developed by the World Economic Forum, translating that a higher rating suggests improved infrastructure and a lower rating suggests deteriorating infrastructure. Improved infrastructural systems are proven to encourage international trade, even if countries are far from each other. Through infrastructural improvements, countries can gain from specialisation and economies of scale. The results of the model showed that South Africa exported more to countries with a higher infrastructural rating, returning a positive coefficient of 2.01. These results are consistent with literature findings by Chen, Rau and Chiu (2011), reporting weak infrastructural systems as a non-tariff barrier.

Conclusion

The study applied an augmented gravity model to identify factors influencing South Africa's export growth to the African market. The results of the study reveal evidence that South African agricultural exports to Africa are not only influenced by tariff barriers (Seti & Daw 2022). There are various economic and structural factors that will also play a significant role in the success of the AfCFTA. This study revealed that these factors include the economic size of trading partners, infrastructural development, the distance between trading partners and the existence of a regional trade agreement.

The findings of the study reported a strong relationship between South Africa's export growth and the traditional gravity model. This means that South African agricultural exports increase proportionally to her GDP_i and the GDP_j of the importing country and decrease proportionally to the distance between trading partners. The results of the model suggest that, for South Africa to expand its agricultural export basket on the African continent, it should concentrate on increasing exports to large economies (in terms of real GDP).

Moreover, considering that long-distance is associated with high transport costs and is seen as an obstacle to greater trade integration in Africa, seeking solutions to decrease transport costs is critical. The main areas for reducing transport costs between AU member states can involve upgrading transport networks, such as rail, road, ports and logistics systems. The findings of the gravity model are valuable and insightful for both the South African public and private sectors in developing relevant export policies and goals. Addressing all trade barriers identified in the study will ensure the long-term success of the AfCFTA and increased growth of South African agricultural exports to the African market.

Finally, the lessons for the AfCFTA that can be derived from the study outcomes are twofolds:

- Trade integration should not solely depend on tariff and non-tariff liberalisation. The long-term success of the AfCFTA heavily depends on infrastructural development. Thus, African Union member states need to prioritise investing in their logistics and infrastructural systems. This will reduce transport costs and help trading partners increase their exports to the rest of the continent.

Economic and physical market size will play an essential role in a nation's export growth. Therefore, for countries to mutually benefit from the FTA, they need to increase their domestic production and invest in value addition initiatives.

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Competing interests

The author declares that no financial or personal relationships inappropriately influenced the writing of this article.

Authors' contributions

T.M.S. is the sole author of this article.

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Data availability

All the data used in the model were accessed through various databases. Please see the links below to access the database.

For trade data (imports and exports), two databases were accessed: https://wits.worldbank.org/ and https://www.trademap.org/Index.aspx

For the distance variable, data were accessed from: http://www.cepii.fr/CEPII/en/bdd_modele/bdd_modele_item.asp?id=6

Other macro-economic variables of the model were accessed from the World Bank: https://databank.worldbank.org/source/world-development-indicators

Disclaimer

The views and opinions expressed in this article are those of the author and do not necessarily reflect the official policy or position of any affiliated agency of the author.

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Appendix 1

TABLE 1-A1: Model expectations.

Independent variables	Measurement	Sign	Explanation
Exporter GDP	In US dollar	+	As GDP increases, exports increase
Importer GDP	In US dollar	+	Countries with a growing economy import more products
Common language	-	±	The existence of a common language between trading partners encourages trade, vice versa
Real exchange rates	-	±	An appreciation of the import country's currency promotes exports or hinders imports
Regional trade agreement (RTA)	-	-	Trade agreements will enhance trade between those countries
Infrastructure	-	-	The deteriorating infrastructural system will increase trade costs between trading countries
Distance	In kilometres	-	Long distance between trading partners discourages trade because of high transport cost

Source: Adopted from Hellvin, L. & Nilsson, L., 2000, *Trade flows between trading blocs: The case of the EU's trade with Asia and NAFTA*, Ministry for Foreign Affairs, Stockholm, 28 December 2021, from http://www.snee.org/filer/papers/36.pdf

GDP, gross domestic product.

TABLE 2-A1: African Union countries included in the gravity model, according to their regional economic communities (RECs).

Trading blocs	Member states	Total
CEN-SAD	Morocco, São Tomé and Principe, Burkina Faso, Niger, Senegal, Ghana, Egypt, Guinea-Bissau, Tunisia, Cabo Verde, Togo, Gambia, Central African Republic, Somalia, Eritrea, Chad, Sierra Leone, Comoros Sudan Côte d'Ivoire, Nigeria, Mauritania, Sierra Leon, Djibouti, Benin, Guinea, Kenya, Liberia, Libya, Mali	29
EAC	Tanzania, Kenya, Uganda, Rwanda, Burundi	5
ECCAS	Republic of the Congo, Rwanda, Angola, Central African Republic, Congo, Equatorial Guinea, São Tomé and Principle, Gabon, Burundi, Cameroon, Chad	11
COMESA	Burundi, Zimbabwe, Democratic Republic of the Congo, Uganda, Djibouti, Eritrea, Egypt, Kenya, Ethiopia, Libya, Malawi, Madagascar, Mauritius, Seychelles, Rwanda Sudan, Swaziland, Zambia, Comoros	20
ECOWAS	Benin, Burkina, Faso Cabo Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo	15
IGAD	Ethiopia, Djibouti, South Sudan, Eritrea, Somalia, Kenya, Uganda, Sudan	8
UMA	Tunisia, Libya, Morocco, Mauritania, Algeria	5
SADC	Angola, Botswana, Democratic Republic of the Congo, Madagascar, Lesotho, Malawi, Mauritius, Namibia, United Republic of Tanzania, Swaziland, Zimbabwe, Zambia, Mozambique, Seychelles	15

CEN-SAD, Community of Sahel-Saharan States; EAC, East African Community; ECCAS, Economic Community of Central African States; COMESA, Common Market for Eastern and Southern Africa; ECOWAS, The Economic Community of West African States; IGAD, Intergovernmental Authority on Development; UMA, Arab Maghreb Union; SADC, Southern African Development Community.