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Research article

African Growth and Opportunity Act and trade performance in Nigeria

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ABSTRACT

This study examines the implementation status of the African Growth Opportunity Act (AGOA) and its performance in Nigeria using socio-economic indicators. Also, the study provides recommendations on how Nigeria can harness the opportunities latent in AGOA using statistical inference and in-depth interview with relevant stakeholders. The findings show that despite the privileged economic relations with the United States of America (USA), Nigeria is yet to optimise the benefits derivable from the AGOA initiative. Weak adherence to international products packaging and standards, weak manufacturing base, and inadequate infrastructural provision, among others, have limited Nigeria's possible gains from AGOA. Hence, this study submits that Nigeria can improve its export performance under AGOA, given the considerable untapped potentials in many AGOA-product sectors.

1. Introduction

Despite the privileged economic ties with the United States of America (USA), Nigeria still encounters significant challenges of economic development and shared prosperity, among others. Such that even with 'seemingly unlimited' oil wealth, the country continues to house many poor people (Abebe, 2007; African Union-AU, 2018; Thompson, 2004; World Trade Organisation-WTO, 2017). In 2011, oil generated a reasonable sum of about US$52 billion. However, the country is ranked 152 out of 186 countries on the Human Development Index (HDI), with a score of 0.53 in 2015, and an estimated 70% of the populace living below the poverty line.

With respect to trade, Nigeria relies on oil exports, with little diversification. For example, under the African Growth Opportunity Act (AGOA), which gives an opportunity for beneficiary countries to export more than 6,000 commodities to the USA, about 90% of Nigeria's export under this trade promotion initiative is in oil (Thompson, 2004). Associations with the USA has not yielded the expected benefits, nonetheless there are enormous prospects for economic development and inclusive growth (African Union Commission-AUC, 2017; Brenton and Hoppe, 2006; Thompson, 2004). Although Nigeria is recognised as one of the largest exporters of crude oil in the world, the country ironically imports approximately $10 billion in refined fuel annually (about 156,000 barrels daily for domestic usage (Famutimi, 2016).

The comparatively satisfactory economic performance, discovery of various natural resources, and conducive political environment have provoked the interest of many advanced countries including the USA, the European Union (EU), China, Russia, India, Japan, Brazil, among others to initiate trade relations with several African countries (Davies and Nilsson, 2020; Hurreeram and Little, 2004; Mahabir et al., 2020; Sorgho and Tharakan, 2019; Thompson, 2004). The establishment of multilateral frameworks in Africa countries has become a significant feature in international relations among major economic powers and various regional economic communities as they strive to deepen their economic cooperation and address the challenges faced in a globalised world (Davis and Nilsson, 2020; Mahabir et al., 2020; Musah et al., 2020; Osabuohien et al., 2019; Salau, 2018).

Currently, it can be argued that multidimensional engagements are turning out to be crucial avenues by which problems relating to development, trade and investment inclusive, infrastructure, agriculture, ICT, among others (Adeleye et al., 2020; Adeleye and Eboagu, 2019; Musah et al., 2020). Given this, some of the multidimensional structures the continent and other main economic powers and/or regional economic blocs include The Forum on China-Africa Cooperation (FOCAC), India-Africa Forum, Tokyo International Conference on African Development (TICAD), EU-Africa summit and Arab-Africa Summit (African Capacity Building Foundation-ACBF, 2017). AGOA has been at the centre of the USA's trade and investment policy towards Africa. By providing duty-free and quota-free access for over 6,400 products from eligible countries in Africa, AGOA builds on the market access provided by the USA under the generalised system of preferences (GSP) and expands

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these preferences in favour of Africa (Sorgho and Tharakan, 2019; Thompson, 2004).

Signed into law on 18th May 2000 as Title 1 of the USA Trade and Development Act 2000, AGOA is a non-reciprocal and unilateral preference programme that provides duty-free, quota-free access to the USA market for qualifying goods from eligible Africa countries not included for duty-free treatment under the GSP (Mahabir et al., 2020). On 29th June 2015, President Barrack Obama signed into law the Trade Preferences Extension Act (TPEA) of 2015, extending AGOA for ten years through 2025 (Froman, 2016). Section 104 of AGOA sets requirements that a beneficiary country is expected to meet to qualify for AGOA. The essential requirements to note include: a market-based economy upholding the rule of law, political pluralism, and the right to due process, the elimination of barriers to USA trade and investment, economic policies to reduce poverty, a system to combat corruption and bribery, and the protection of internationally recognised worker rights.

Against this background, the purpose of this study is to examine how AGOA has contributed to the trade performance of Nigeria. This study further provides recommendations on the comparative advantage of Nigeria and the specific products and sectors that should be promoted, so that the country would benefit more from AGOA. In achieving the above general aim, the study evaluates Nigeria's trade policies and how trade initiatives may boost or impede exports trend under AGOA. The hypothesis, stated in the null form, is that there is no significant difference between the average export from USA to Nigeria and from Nigeria to USA under AGOA.

2. Evaluating Nigeria's pre- and Post-AGOA participation

According to Schneidman and Lewis (2012), seven markets in Africa are identified as key to its strategy of actualising the goals of AGOA using the Export-Import Bank as one of the channels. These are South Africa and Nigeria, which have been designated as “strategic markets” as well as Angola, Ghana, Kenya, Mozambique, and Tanzania. These seven countries account for 75% of USA exports to Sub-Saharan Africa (SSA), while South Africa and Nigeria together account for more than half of the trade volume (Naumann, 2016; Seyoum, 2007). Also, within the regional performance, USA commercial presence in Africa is not large, but it is increasing.

Statistics show that the USA investment position in SSA is less than 1% of USA direct investment globally. According to the Commerce Department, USA, direct investment in the region at the end of 2009 was $22.6 billion. This was a 17% increase from the previous year and an even more significant increase in certain countries such as Nigeria with 63%; Mauritius 35%; and South Africa at 20% (Schneidman and Lewis, 2012). Hence, to appraise Nigeria's trade performance as an AGOA beneficiary, it is crucial to analyse the trade position to observe if there had been any meaningful gains from trade. Opinions differ on whether the country has benefitted from trade collaborations with the USA. The volume of total imports, exports and the trade balance are shown in Table 1.

Nigeria's trade position before the commencement of AGOA (pre-year 2000), during AGOA (2001–2015), and the extension period (2016–2017) is depicted in Figure 1. The figure indicates that the highest positive trade balance of $32.4 billion was recorded in 2008. The statistics reveal, among others, that Nigeria's trade position, though favourable, was considerably low. About $10.8 billion in 2000, before the commencement of AGOA. Trade resurgence occurred, and the trade balance rose to $32.4 billion, which culminated with the start of the global financial and economic crises. In line with this, the study by Thompson (2004) found that AGOA trade policy has not impacted on the macroeconomies of African countries in a positive way nor brings any significant transformation in the economic conditions of the workforce. On the contrary, Sorgho and Tharakan (2019) found that AGOA has positively impacted African countries.

The study by Sorgho and Tharakan (2019) applied the Logit regression and the Propensity Score Matching (PSM), shows that though, AGOA has a positive impact on the economy, however, one of the reasons, while most African countries did not experience a positive impact of AGOA trade policy, is as a result of an institutional framework. The study found

Table 1. Volume of total Imports, Exports and Trade Balance.

Year	HS Code	Imports	Exports	Trade Balance
1996	H0	893.24	4,248.37	3,355.14
1997	H0	993.72	4,639.75	3,646.03
1998	H0	807.87	2,933.63	2,125.76
1999	H1	700.07	5,470.11	4,770.04
2000	H1	660.33	11,499.76	10,839.43
2001	H1	822.92	7,320.89	6,497.97
2002	H1	1,123.47	5,830.13	4,706.66
2003	H1	2,326.15	9,210.85	6,884.71
2006	H2	3,590.74	26,656.48	23,065.75
2007	H2	4,893.16	25,157.31	20,264.15
2008	H2	2,313.08	34,758.31	32,445.23
2009	H3	2,041.59	13,618.24	11,576.65
2010	H3	7,936.54	29,755.94	21,819.39
2011	H3	11,517.28	28,327.51	16,810.22
2012	H3	4,886.97	24,139.34	19,252.37
2013	H3	3,900.04	7,669.90	3,769.87
2014	H3	4,833.55	3,954.74	-878.82
2016	H4	2,818.66	3,976.14	1,157.47
2017	H4	2,494.13	5,672.19	3,178.05
2018	H4	2656.395	4824.165	2167.76
2019	H4	2575.2625	5248.1775	2672.905

Note: The HS Codes H0 to H4 is the classification of goods as indicated by the “Harmonised System (HS)” which was created and administered by the Brussels-based World Customs Organisation (WCO). It consists of numerical codes that allow the systematic definition and classification of all goods in international trade, within the tariffs of signatory countries. There was no data for 2015.
Source: Authors' compilation from www.agoa.info.

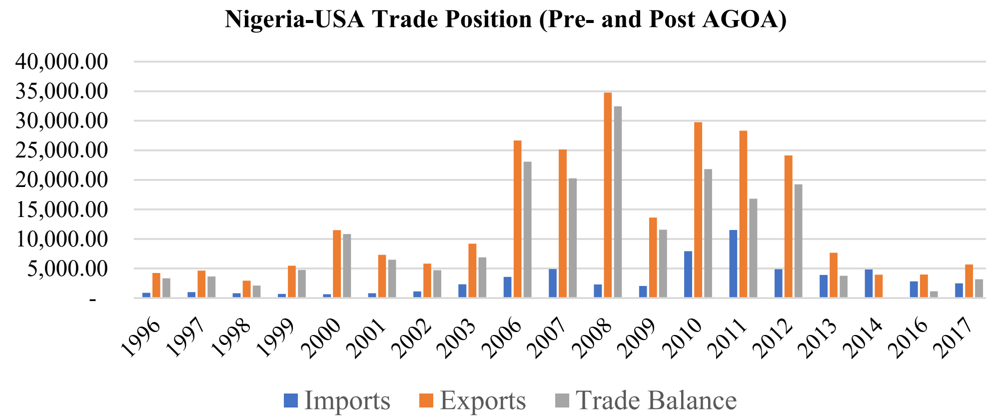

Figure 1. Nigeria's Trade Position Pre- and Post-AGOA (US $' Millions). Note: Data was not available for the missing years. Source: Authors' computation using data from www.agoa.info.

that a higher level of political stability of a given country and of the quality of its economic regulation strongly increase its probability to be eligible in the AGOA programme. The results also show that a higher level of freedom of expression of a given country increases its probability to be covered in AGOA and its impact on the economy. The crises adversely affected the country's trade position with a lull in 2009 at $11.5 billion but later peaked at $19.25 billion in 2012. AGOA was further extended beyond 2015 for another 10 years (to end in 2025), but not much has been recorded in trade for Nigeria post-2015. The country's trade balance for 2017 was $3.17 billion a drastic reduced from the previous trend.

3. Overview of AGOA in African countries

Trade engagements at the national, regional, and global levels are necessary for economic growth, job creation, rising per capita income of the populace, reducing the inequality gap and above all, eliminating poverty at all levels (Adegboye et al., 2020; Osabohien et al., 2021; Sorgo and Tharakan, 2019). Among the integration levels: free trade area, customs union, common market, economic union and political union, Nigeria is actively involved in free trade, customs union and common market while partially involved in economic union and not involved in a political union. Trade openness is essential to the actualisation of Nigeria's Sustainable Development Goals (SDGs) aside from being an active player in the regional bloc of the Economic Community of West African States (ECOWAS) which was formed in 1975 (Osabuohien et al., 2019). The country signed several bilateral and multilateral trade agreements to achieve its socio-economic objectives.

Aligning with a regional body tends to give the country the possibility of specialisation, the advantage of economies of scale and the possibility of intra-industry trade (Adegboye et al., 2020; Osabohien et al., 2021). To respond to trade and investment prospects evolving in the continent, the USA endeavoured to add to Africa's state of businesses. It is with this view that AGOA trade law was enacted. AGOA is a trade penchant agenda that aims to enhance USA-African trade and investment relation by providing duty-free entry into the USA. Qualified countries in the continent aims to utilise the merits of a list of 6,999 commodities. The main aim of AGOA trade policy is to spread special entrance to imports from authorised African countries that can be sent to USA duty-free (Naumann, 2016). AGOA commodity suitability is agricultural produces, forest commodities, chemicals and related products, energy-related products, textiles and apparel, footwear, minerals and metals, machinery, transportation equipment, electronic products and miscellaneous manufactures (Okon, 2016).

One of the requirements of AGOA is that beneficiary countries should make efforts to eliminate barriers to the USA trade with Nigeria ranked as the first of top five beneficiaries of the scheme. The first phase of AGOA lasted from October 2000 to September 2008. During this period, Nigeria's total exports which stood at US$5.5 billion in 1999 rose to an all-time-high value of US$34.8 billion in 2008, representing a 53.3% increase between 1999 and 2008 (See Table 2). However, during the second phase, which ended in 2015, Nigeria's overall export to the USA declined from US$13.6 billion in 2009 to US$2.0 billion in 2015, representing a decline of about 85%. On the other hand, the USA's overall export to Nigeria, which stood at US$0.7 billion in 1991 increased to US$ 2.3 billion, representing about 22.9% increase during the first phase of AGOA. Likewise, the USA's overall export to Nigeria increased by 70% during the second phase of AGOA. The above scenarios could be related to the 2007/2008 global financial and economic meltdown on bilateral trade between the two countries.

Nigeria's total exports to the USA under AGOA was US$5.6 billion in 2001 and increased to US$35.4 billion at the end of 2008 representing a 53.2% increase during the first phase of AGOA that ended in 2008. However, during the second phase, exports to the USA declined from US$ 17.2 billion in 2009 to US$ 1.4 billion in 2015, representing a 92% decline during this phase which ended in 2015. Nigeria's export to the USA; however, increased from US$1.4 billion in 2015 to US$ 6.1 billion at the end of 2017, representing about 33.6% growth but most of this growth was in the oil sector.

Over the years, Nigeria's AGOA exports have centred on the oil and gas sector (Thompson, 2004). This was reiterated during the vital informant in-depth interview (IDI) that "AGOA's trade and investment impact is largely dominated by oil and gas, moderate impact on light manufactures, minimal impact on agriculture and food processing. AGOA's impact across African countries has been very disparate -concentration of AGOA exports and USA investments in only a handful of countries". However, there are some signs of diversification from oil, as Nigeria's total agricultural exports to the USA under AGOA increased from about US$ 3 million in 2015 to US$ 7 million in 2017. Nevertheless, the level is still very insignificant compared with some African beneficiaries such as Kenya and South Africa (see Table 2).

Table 3 reveals that while the average agricultural exports of Nigeria to the USA between 2005 and 2017 stood at about US$5 million, Kenya and South Africa recorded US$27.14 million and US$162.50 million, respectively. It is against the above background that Nigeria is prioritising diversifying her trade structure to create many jobs as well as maximise her benefits from AGOA. Table 4 presents a sectoral analysis for Nigeria and some selected Africa beneficiaries.

Table 3 indicates that Nigeria performed below Ghana and South Africa in exports of agricultural and forest products to the USA under the AGOA scheme. While Nigeria recorded about US$3.2 million and US$ 39 million in 2017 for agricultural and forest products, respectively, Ghana recorded US$29.20 million and US$2.70 million in 2017 for the exports of agricultural and forest products to the USA under AGOA. Similarly,

Table 2. Total Value of Nigeria's Exports to USA versus USA's Exports to Nigeria (US$ billion).

Year	Export from Nigeria	Export from USA	Year	Export from Nigeria	Export from USA
1996	4.2	0.9	2008	34.8	2.3
1997	4.6	1.0	2009	13.6	2.0
1998	2.9	0.8	2010	29.8	7.9
1999	5.5	0.7	2011	28.3	11.5
2000	11.5	0.7	2012	24.1	4.9
2001	7.3	0.8	2013	7.7	3.9
2002	5.8	1.1	2014	4.0	4.8
2003	9.2	2.3	2015	2.0	3.4
2004	17.1	1.6	2016	4.0	2.8
2005	25.2	1.6	2017	7.3	2.2
2006	26.7	3.6	2018	5.7	2.5
2007	25.2	4.9	2019	6.5	2.4

Source: Authors' compilation from UN Comtrade Database (https://comtrade.un.org/data).

South Africa, the leading beneficiary in Africa, recorded US$ 41 million and US$ 6.3 million for exports of agricultural; and forest products to the USA, respectively. Minerals & metals and chemicals & related products are the leading sectors in South Africa as the sectors recorded exports value of US$536.6 million and US$235.3 million, respectively in 2017.

4. Methodology, results and discussions

4.1. Summary of key information from in-depth interview

In appraising the overall performance of AGOA, Schneidman and Lewis (2012) noted that the pact had had success in creating jobs and building stronger commercial ties between USA and Africa, at a time when the region is poised for economic take-off and has remained resilient in the wake of the 2008 global economic downturn. Since the legislation went into effect, exports under AGOA have increased more than 500%, from US$8.15 billion in 2001 to US$53.8 billion in 2011.

To achieve the objective of the study, in addition to content analysis of AGOA related documents, the research was conducted with in-depth interviews that were held with various stakeholders, using a structured discussion guide. The stakeholders interviewed include officials from the Ministry of Industry, Trade and Investment (FMITI); the Nigerian Export Promotion Council (NEPC); organised private sector notably the Manufacturers Association of Nigeria (MAN), Nigerian Textile Manufacturers Association (NTMA) as well as AGOA specialists at the US Agency for International Development (USAID) West Africa. Basically, in the respective departments (organisations) where the in-depth (face-to-face) interviews were conducted, the Heads of Departments were interviewed. That is, one person was interviewed in each of the respective departments. The reason for selecting the Head of Department is because they have better access to detailed information regarding the operations of the respective agencies (departments).

The above approach helped to ascertain the current situation of AGOA in Nigeria; by identifying key issues that AGOA is facing from different perspectives, and identifying some of the key initiatives taken by the stakeholders to maximise benefits, while minimising the associated risks. This is essential as it provides more insights into AGOA implementation in Nigeria, and enhances understanding of the opportunities and challenges it poses. Thus, it helps in the crafting of recommendations from an informed point of view. It also enabled the researchers to put forth an informed argument on the current and potential impacts of AGOA on Nigeria's trade outcomes. The summary of their views is presented in Table 5.

Table 3. Agricultural Exports to the USA under AGOA ($'1000).

Year	Nigeria	Ghana	Kenya	South Africa
2005	30	288	5,072	131,142
2006	19	184	6,490	154,285
2007	21	81	3,736	136,818
2008	26	28	6,586	137,913
2009	17	23	9,471	126,682
2010	41	109	19,117	161,884
2011	40	67	28,109	144,476
2012	114	19	33,458	163,052
2013	167	93	29,806	184,274
2014	152	175	41,791	174,809
2015	229	395	58,121	207,531
2016	582	189	48,700	178,042
2017	4,924	4,317	62,386	211,615
2018	2753	2253	55543	194828.5
2019	3838.5	3285	58964.5	203221.75
Average	**864**	**767.07**	**31,157**	**167,372**

Source: Authors' compilation from www.agoa.info.

Table 4. Sectoral analysis of Nigeria, Kenya, Ghana and South Africa exports to USA ($'1000).

Countries	Sectors	2015	Sectoral %	2016	Sectoral %	2017	Sectoral %	2018	Sectoral %	2019	Sectoral %
Nigeria	Agricultural Product	2,434	55.31	2,939	93.96	3,216	59.93	3077.5	76.945	3146.75	68.4375
	Forest Product	82	1.86	42	1.34	39	0.73	40.5	1.035	39.75	0.8825
	Chemical & Related Products	785	17.84	139	4.44	1,327	24.73	733	14.585	1030	19.6575
	Textiles and Apparel	NA	NA	3	0.1	3	0.06	3	0.08	3	0.07
	Minerals and metals	1,100	24.99	5	0.16	781	14.55	393	7.355	587	10.9525
	Sectors Total	**4,401**	**100**	**3,128**	**100**	**5,366**	**100**	**1169.5**	**100**	**3267.75**	**100**
Kenya	Agricultural Product	3,544	78.04	2,613	71.69	2,477	66.64	2545	69.165	2511	67.9025
	Forest Product	461	10.15	408	11.19	690	18.56	549	14.875	619.5	16.7175
	Chemical & Related Products	302	6.65	341	9.36	46	1.24	193.5	5.3	119.75	3.27
	Textiles and Apparel	119	2.62	106	2.91	171	4.6	138.5	3.755	154.75	4.1775
	Minerals and metals	115	2.53	177	4.86	333	8.96	255	6.91	294	7.935
	Sectors Total	**4,541**	**100**	**3,645**	**100**	**3,717**	**100**	**3681**	**100**	**3699**	**100**
Ghana	Agricultural Product	22,646	92.12	32,321	88.55	29,185	90.49	30753	89.52	29969	90.005
	Forest Product	1,846	7.51	2,638	7.23	2,737	8.49	2687.5	7.86	2712.25	8.175
	Chemical & Related Products	4	0.02	3	0.01	20	0.06	11.5	0.035	15.75	0.0475
	Textiles and Apparel	20	0.08	53	0.15	69	0.21	61	0.18	65	0.195
	Minerals and metals	68	0.28	1,484	4.07	240	0.74	862	2.405	551	1.5725
	Sectors Total	**24,584**	**100**	**36,499**	**100**	**32,251**	**100**	**34375**	**100**	**33313**	**100**
South Africa	Agricultural Product	41,050	4.78	48,302	6.86	40,994	5	44648	5.93	42821	5.465
	Forest Product	3,650	0.43	5,702	0.81	6,326	0.77	6014	0.79	6170	0.78
	Chemical & Related Products	318,886	37.16	215,926	30.68	235,342	28.72	225634	29.7	230488	29.21
	Textiles and Apparel	604	0.07	304	0.04	273	0.03	288.5	0.035	280.75	0.0325
	Minerals and metals	493,983	57.56	433,571	61.6	536,637	65.48	485104	63.54	510870.5	64.51
	Sectors Total	**858,173**	**100**	**703,805**	**100**	**819,572**	**100**	**761688.5**	**100**	**790630.25**	**100**

Source: Authors' compilation from www.agoa.info/profile/nigeria.html.

4.2. Economic and social impacts of AGOA in Nigeria: stakeholders perspectives

This discusses the implication of AGOA on the general economy of Nigeria. It ascertains whether AGOA has facilitated the country's industrial growth and promoted value addition, improving Nigeria's trade share, economic growth, domestic revenues/resource mobilisation, and the related benefits accruing from such market preferences. Since the implementation of AGOA in 2002, opinions on its economic impact have been diverse. To some, trade collaboration has greatly improved Nigeria's trade position and macro-economic performance. In contrast, others opined that the country is yet to harness the opportunities embedded in the pact with the US having more gains from the partnership.

Analysis of U.S-Africa AGOA trade reveals that the total US trade with SSA rose by 16.8% from US$33 billion in 2016 to US$38.5 billion in 2017, and US exports to SSA increased by 4% to US$13.1 billion, while African exports to the United States rose by more than 24% to more than US$24 billion. Likewise, there were some encouraging signs of diversification from oil, with African agricultural exports to the US rising by 10% to US$2.7 billion in 2017. African non-oil exports to the US under AGOA have grown from US$1.3 billion in 2001 to US$4.2 billion in 2016. Nigeria is among the most significant US trading partners in Africa and saw the most considerable exports growth (0.43%) in 2017. The level of exports under AGOA went up from about US$3.4 billion to US$6 billion, and most of that growth was in the oil sector. Also, Nigeria's agricultural exports to the United States under AGOA increased from about US$3 million to US$9 million in 2017, but the level is still modicum.

From the stakeholders' perspective, AGOA is yet to positively impact Nigeria because some of Nigeria's produce from industrial firms is yet to be accepted under the AGOA accord. This view is similar to the empirical findings by Thompson (2004), which indicated that AGOA trade policy has not impacted the macroeconomies of African countries positively or brought about significant transformation in the workforce's economic conditions. This has brought a challenge to the economy as Nigeria's manufactured goods find it challenging to get into the US market.

According to the stakeholders, some factors that hinder the Act's realisation include sanitary and Phyto-sanitary (SPS) requirements, the problem of labelling, packaging and quality. Others are lack of product-specific standard, supply-side constraints such as inability to meet up with the large volume of orders from the US and weak competitiveness as a result of inadequate infrastructural facilities and lack of finance. Exports to the US under AGOA plummeted between 2008 and 2016 due to weak demand for Nigerian crude oil imports. Hence, an urgent need for export diversification to increase Nigeria's exports to the US, particularly in sectors with strong demand like value-added agricultural products, leather, food, spices, and beverages.

In addition, following the stakeholders' opinions' the problem about Nigeria's single-commodity build around oil, and apparent inadequate devotion to values and commodity arranging approaches alongside insufficient industry base and infrastructural problems, among others, are known to influence the performance of trade in Nigeria. In addition, the country was unable to utilise the opportunities accrue from trade to enhance export base to steer the US market, partially as a result of the country's inability to enhance the standardisation of commodity, particularly in the packaging aspect. The problem has to do with product standardisation. USA being an industrialised nation, that may not accept substandard commodities. In addition, domestically produced commodity and services lack global excellence certification. Therefore, they are denied access to markets in industrialised nations. The situation elucidates the rationale manufacturers' efficiency and effectiveness suffer, which results in some deduction that Nigeria is not making progress under AGOA.

On sectoral appraisal, there are three sectors under AGOA, namely "energy-related products," "textiles" and "transportation equipment" which is responsible for more than 90% of total exports, presently qualifying for AGOA benefits. Nevertheless, for the last two decades, of applying the trade policy, Nigeria has only been able to feature

Table 5. Summary of key findings from stakeholders view.

Agency	Summary of Views
Nigerian Export Promotion Council	Some of the eligible SSA countries have greatly benefited from AGOA. From 2000 - 2011, there was a substantial increase in exports from sub-Saharan Africa to the US. Under AGOA" USAID should work closely with each eligible Africa country now that West Africa Trade and Investment Hub project is over; the US government should have investments in different sectors in Nigeria to set the pace, employ and train Nigerians so that Nigerians could continue in trade with other African countries and the entire world".
Nigerian Textile Manufacturers Association	"The lack of garment production facilities - factories, affordable power, skilled workforce, necessary technology, research and training institutions offering relevant courses to meet up required international industry standard, and lack of competitiveness due to poor product quality and high prices are the major obstacles affecting the utilisation of AGOA in the Textile sector in Nigeria.
USAID West Africa	AGOA has allowed many eligible countries to establish and expand market linkages in the US. For instance, non-oil exports to USA under AGOA rose from $1.4 billion in 2001 to $4.3 billion in 2017 due to increased.
Federal Ministry of Industry, Trade and Investment	Trade and investment express the mixed impact of AGOA by putting it this way: "To a large extent, the success of AGOA is mixed. Some African countries (e.g., Kenya, South Africa and Lesotho) have used the trade advantage to improve on their trade performance. However, many beneficiaries (e.g., Nigeria) have not utilised AGOA for maximum benefit. Nigeria's plight is due to her over-dependence on oil". Infrastructure deficit with respect to the power supply, roads, rails is significant concerns. It has not been comfortable with Nigerian manufacturers due to the level of infrastructural deficit in the country. Most of them have to generate power by fuelling their generators with its attendant effects on the cost of production. They also suffer a lot of post-harvest losses due to inadequate transportation facilities.

Source: Authors' compilation using stakeholders' view. The interview guide is available upon request.

prominently in the energy-related commodities sector. Nigeria performed insufficiently in textiles and apparel, agricultural products and mineral and metals sectors. Inappropriately, these are parts that the country has huge prospect. Alternative aspect for under-performance is the country's failure to diversify her economy away from its over-dependence on oil. The oil and gas sector, which provides the bulk of Nigeria revenue, contributing as much as 95% of foreign exchange earnings and about 80% of its budgetary revenues, made it difficult for agricultural exports to play an essential role in Nigeria-US trade under AGOA.

Agriculture provides 70% of employment in SSA and 30% of the region's GDP. Nevertheless, agricultural products constitute less than 1% of AGOA exports due to quality and standardisation. As a result of Nigeria's weak infrastructural base and inadequate laboratories to ensure that exportable agricultural and other commodities are up international standard, as well as inadequate product value addition, among others. Nigeria was unable to utiliser opportunities under AGOA trade policy. The poor environment, especially, weak institutional base, mainly the energy sector, that has constantly increasing the cost of production, is also known to be somewhat accountable for the lack of competitiveness of the manufacturing sector, Small and medium-scale enterprises (SMEs). For example, at a recent Bank of Industry (BoI) - AGOA training agenda in Lagos, high production cost, lack of adherence to contractual terms, and ignorance of local and US customs regulations were identified as some of the hindrances to the export capacities of most Nigerian SMEs.

The social impact of AGOA is embedded in the extent to which the gains from trade is rationalised. For instance, trade-in oil exports constitute a more significant proportion of volume and value of total exports under the pact since its inception. In contrast, other sectors (like agriculture) which employ a more significant percentage of the populace recorded lower trade volume. The implication of this is that; there will be relative poverty and income inequality within the labour force. Therefore, agriculture should not be treated as just a social sector intervention for managing poverty but more as a business to create wealth and empower citizens. Essentially, sectoral diversification from oil-export dependence must be expedited to diversify revenue, reduce import dependency, create jobs, assist poor households and develop rural areas. One way to boost agricultural value-chain, drive economic diversity and productivity in the agricultural sector, is to engage in agri-industrialisation and implement innovative financing models that cater to the needs of both low-income farmers and high-income processors.

4.3. Statistical results

The simple independent *t*-test is used to ascertain if there is a significant difference between average Nigeria's exports to the USA and the USA's export to Nigeria. The justification for the choice of approach is mainly to guide policy direction, which is the focus of this study. Furthermore, to examine the impact of AGOA on Nigeria's export to the USA, the data is split into two periods: pre-AGOA and post-AGOA periods and the data evaluated using a paired sample *t*-test to establish if the average exports of Nigeria to the USA during the pre-AGOA and post-AGOA are significantly different. The hypothesis tested are surmised herewith.

Hypothesis I. H_0: $\overline{\mathbf{X}}_{\mathbf{Nigeria}} = \overline{\mathbf{X}}_{\mathbf{USA}}$, Versus H_1: $\overline{\mathbf{X}}_{\mathbf{Nigeria}} > \overline{\mathbf{X}}_{\mathbf{USA}}$.

To test HypothesisI, the two-sample independent t-test in the Statistical Package for Social Sciences (SPSS) software is used.

The independent t-test is given as $\mathbf{t} = \frac{\overline{X}_1 - \overline{X}_2}{\sqrt{\frac{S^2{}_1}{n_1} + \frac{S^2{}_2}{n_2}}}$, where $\overline{X}_1$= average export from the USA,

$\overline{X}_2$= average export from Nigeria, $S^2{}_1$= variance of USA exports, $S^2{}_2$= Variance of Nigeria exports, n_1 = number of observations for USA exports, n_2 = number of observations for Nigeria exports. The results of the analyses are presented in Table 6 (a and b).

Table 6a. Group statistics of USA-Nigeria bilateral exports.

	Comtrade	N	Mean	Std. Deviation	Hypothesis Validation
General Commodity	USA Exports to Nigeria	17	3.6336	2.7018	Reject H_0
	Nigeria Exports to the USA	17	15.9984	10.9051	

Note: The analysis started in 2001 since AGOA became effective in May 2000.

Table 6b. Two-sample independent test for Nigeria-USA exports.

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F-cal	Sig.	t-cal	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	6.557	0.002	4.5378	32	0.0001	12.3649	2.7248	6.8146	17.9152
Equal variances not assumed			4.5378	17.96	0.0003	12.3649	2.7248	6.6392	18.0905

Source: Authors'.

The results in Table 6a indicate that the average value of Nigeria's export of goods to the USA for the period of study is approximately $16 billion. In comparison, that of the USA to Nigeria stood at about US$4 billion. The t-test results displayed in Table 6b rejects the null hypothesis (H_0) at the 5% significance level, because, the two means are statistically different. Also, because Nigeria's average exports to the USA are significantly higher than that of the USA to Nigeria.

The finding is similar to that of Naumann (2016), who argued that SSA-AGOA countries, Nigeria exceeds other countries in terms of average export. In a related way, Mahabir et al. (2020), engaged the Gravity Model and found that a strong positive impact of the bilateral trade between the US and Africa. The study found that, for every proportion rise in exports to the USA, there is a less than proportionate increase in exports to the EU, indicating a higher utilisation of the special waiver. On the contrary, Seyoum (2007) applied the Wilcoxon signed-rank test and time-series regression analysis and found that AGOA has a positive, but insignificant impact on beneficiary exports to the USA, for all substantial exporters except Lesotho. A similar finding was obtained by Lall (2005).

Also, to the result present in Table 6 (a and b), to assess the impact of AGOA on Nigeria's export of goods to the USA, and vice versa, we split the export data into three sub-samples: pre-AGOA, 1st Phase-AGOA and 2nd Phase-AGOA periods. This is to ascertain significant differences between pre-AGOA and 1st Phase-AGOA, and pre-AGOA and 2nd Phase-AGOA.

The sub-samples data are presented in Table 7. The data reveals that the average of Nigeria export of goods to the USA in the pre-AGOA, 1st Phase-AGOA and 2nd Phase-AGOA regimes are US$5.76 billion, US$18.90 billion and US$15.61 billion, respectively. This implies that Nigeria experienced about 228% and 171% changes in the value and volumes of goods exported to the USA in the pre-AGOA period compared with the 1st Phase-AGOA and 2nd Phase-AGOA, respectively.

Third, using the data in Table 7, we test the hypotheses for Nigeria's export (pre-AGOA versus 1st Phase-AGOA; and pre-AGOA versus 2nd Phase-AGOA) as well as the hypothesis for USA's export (pre-AGOA versus 1st Phase-AGOA; and pre-AGOA versus 2nd Phase-AGOA). The statistical test was carried out by employing the respective paired samples t-test[1] and the findings are presented in Tables 8 and 9. Table 8 summarises the respective summary statistics between the paired samples, the respective hypotheses tested, and their results are reported in Table 8.

Part I of Table 8 shows that the average export of goods from Nigeria to the USA during the pre-AGOA period was US$ 5.76 billion, while the average exports for the 1st Phase-AGOA period were US$ 12.93 billion. This implies that in the volume of exports increased during the 1st Phase-AGOA when compared to pre-AGOA era. While the results in Part A of Table 9 indicate that the average exports of goods from Nigeria to the USA during the pre-AGOA and 1st Phase-AGOA regimes are significantly different at 5% level of significance. This implies that Nigeria has exported more to the USA during the 1st Phase-AGOA compared to the pre-AGOA era. However, the results indicate that the impact of AGOA is lower during the 1st Phase-AGOA era since the null hypothesis can only be rejected at 5% significant level.

In Part II of Table 8, the average export of goods from Nigeria to the USA during the pre-AGOA period was approximately US$ 5.8 billion, while the average exports for the 2nd Phase-AGOA period were US$ 20.7 billion. This evidences that exports under AGOA have been increasing over time. However, more impact is felt in the 2nd Phase-AGOA than in the earlier periods. Furthermore, the results in Part B of Table 9 indicate that the average exports of goods from Nigeria to the USA during the pre-AGOA and 2nd Phase-AGOA regimes are significantly different only at 10% level of significance. The inference from this is that Nigeria has exported more to the USA during the 2nd Phase-AGOA than the pre-AGOA era. Nevertheless, the results indicate that the impact of AGOA was weaker during the 2nd Phase-AGOA era since the null hypothesis cannot be rejected at 5% significant level.

The values in Part III of Table 8 reveal that the average export of goods from the USA to Nigeria under AGOA during the pre-AGOA period was US$ 0.81 billion, while the average export for the 1st phase AGOA is about US$ 1.49 billion. This represents an 88% increase in USA exports during the 1st Phase-AGOA compared with the pre-AGOA era. From the results in Part C of Table 8, it is apparent that the average exports from the USA to Nigeria during the pre-AGOA and 1st Phase-AGOA regimes are significantly different at 10% level of significance but not significant at 5% level. The implication is that the USA has exported more to Nigeria during the 1st Phase-AGOA compared to the pre-AGOA era. However, the results indicate that the impact of AGOA was not very strong during the 1st Phase-AGOA era since the null hypothesis can only be rejected at 10% significant level.

More so, the results in Part IV of Table 8 show that the average export from the USA to Nigeria under AGOA during the pre-AGOA period is approximately US$ 0.8 billion, while the average export for the 2nd phase AGOA is about US$ 6.1 billion. This connotes that the impact on exports under AGOA has been increasing over time; though, more glaring impact

[1] The summary of the formula used in testing hypotheses II to V is given as: $t = \frac{\bar{d}}{\sqrt{\frac{s^2}{n}}}$, where d bar is the mean difference between Nigeria Pre-AGOA and Post-AGOA export of goods to the USA, s^2 is the sample variance, n is the sample size, and t is a Students' t-test statistic with n-1 degrees of freedom; vice versa.

Table 7. Total Value of Nigeria Exports to USA versus USA Exports to Nigeria (US$ billions).

Pre-AGOA			1st Phase AGOA			2nd Phase AGOA		
Year	Export from Nigeria	Export from the USA	Year	Export from Nigeria	Export from the USA	Year	Export from Nigeria	Export from the USA
1996	4.25	0.89	2001	7.32	0.82	2009	13.62	2.04
1997	4.64	0.99	2002	5.83	1.12	2010	29.76	7.94
1998	2.93	0.81	2003	9.21	2.33	2011	28.33	11.52
1999	5.47	0.70	2004	17.11	1.55	2012	24.14	4.89
2000	11.50	0.66	2005	25.16	1.62	2013	7.67	3.90
-	-	-	2006	26.66	3.59	2014	3.95	4.83
-	-	-	2007	25.16	4.89	2015	2.00	3.44
-	-	-	2008	34.76	2.31			
-	-	-	-	-	-			
Average	**5.76**	**0.81**		**18.90**	**2.28**		**15.61**	**5.51**

Source: Authors' compilation from UN Comtrade Database (https://comtrade.un.org/data).

Table 8. Summary statistics amongst paired samples (Nigeria-USA exports).

Pairs	Mean	Observations	Standard Deviation	Standard Error Mean
Part I Paired Samples Results of Nigeria's Exports				
Pre-AGOA	5.76	5	3.338	1.493
1st Phase AGOA	12.93	5	8.105	3.625
Part II Paired Samples Results of Nigeria's Exports				
Pre-AGOA	5.76	5	3.338	1.493
2nd Phase AGOA	20.70	5	9.644	4.313
Part III Paired Samples Results of US's Exports				
Pre AGOA	0.81	5	0.135	0.061
1st Phase-AGOA	1.49	5	0.573	0.256
Part IV Paired Samples Results of USA's Exports				
Pre-AGOA	0.81	5	0.135	0.061
2nd Phase AGOA	6.06	5	3.726	1.667

Note: For paired comparison, only the first five data points in the respective phases are used.
Source: Authors' computation.

Table 9. Results from the Hypotheses tested with Paired Samples (Nigeria-USA Exports.

Paired Differences	Mean	Standard Deviation	Standard Error Mean	95% Confidence Interval		t-Stat.	Degree of Freedom	Sig (2-tailed)
				Lower	Upper			
Part A Paired Samples Test Results for Nigeria's Exports to the USA Hypothesis II: H_0: $\overline{X}_{1st\ Phase-AGOA} = \overline{X}_{Pre-AGOA}$; H_1: $\overline{X}_{1st\ Phase-AGOA} > \overline{X}_{Pre-AGOA}$								
Pre AGOA –1st Phase-AGOA	-7.17	5.373	2.403	-13.839	-0.497	-2.983	4	0.041*
Part B Paired Samples Test Results for Nigeria's Exports to the USA Hypothesis III: H_0: $\overline{X}_{2nd\ Phase-AGOA} = \overline{X}_{Pre-AGOA}$; H_1: $\overline{X}_{2nd\ Phase-AGOA} > \overline{X}_{Pre-AGOA}$								
Pre AGOA–2nd Phase-AGOA	-14.95	12.352	5.524	-30.283	0.391	-2.706	4	0.054**
Part C Paired Samples Test Results for USA's Exports to Nigeria Hypothesis IV: H_0: $\overline{X}_{1st\ Phase-AGOA} = \overline{X}_{Pre-AGOA}$; H_1: $\overline{X}_{1st\ Phase-AGOA} > \overline{X}_{Pre-AGOA}$								
Pre AGOA–1st Phase-AGOA	-0.68	0.648	0.290	-1.482	0.126	-2.341	4	0.079**
Part D Paired Samples Test Results for USA's Exports to Nigeria Hypothesis V: H_0: $\overline{X}_{2nd\ Phase-AGOA} = \overline{X}_{Pre-AGOA}$; H_1: $\overline{X}_{2nd\ Phase-AGOA} > \overline{X}_{Pre-AGOA}$								
Pre AGOA–2nd Phase-AGOA	-5.25	3.697	1.653	-9.839	-0.657	-3.174	4	0.034*

Note: * and ** means significant at 5% and 10%, respectively.
Source: Authors'.

occurred in the later period after AGOA (2nd Phase-AGOA) than the earlier periods. Finally, from the results in Part D of Table 9, it is inferred that the average exports from the USA to Nigeria during the pre-AGOA and 1st Phase-AGOA regimes are significantly different at 5% level of significance. This gives the implication that the USA has exported more to Nigeria during the 2nd Phase-AGOA compared to the pre-AGOA era. The results indicate that the impact of AGOA on USA exports to Nigeria is stronger during the 2nd phase-AGOA era than the 1st phase since the null hypothesis is rejected at a 5% significant level.

5. Conclusion and recommendations

Although African countries have performed relatively well in economic terms, their natural resources and the relative political stability of the continent have elicited trade interest from many advanced and emerging market economies leading to the establishment of multilateral frameworks with Africa. Multilateral arrangements are becoming an important means for addressing development issues including trade, investment, infrastructure, science and technology, peace and security, agriculture, health, capacity building, information and communication technology and Nigeria is uniquely positioned to be immensely impacted given her natural resource endowment.

In the stakeholders' opinion, the issues around Nigeria's mono-product economy centre on oil, and perceived lack of adherence to standards and product packaging methods as well as a weak manufacturing base and infrastructural challenges, among others, are said to have militated against the country's economy the opportunity of optimising the possible benefits of AGOA. The issue could possibly be related to the 'Dutch Disease' challenge that could affect Nigeria's economic performance, including trade, which could be taken up in further studies. In addition, Nigeria has not taken full advantage of the policy to boost her export drive to the USA market due partly to challenges relating to products standardisation, especially in the area of packaging.

In the years of implementing AGOA trade policy, Nigeria was only able to feature prominently in the energy-related products sector. The country performed poorly in the textiles and apparel, agricultural products and mineral and metals sectors. Unfortunately, these are areas Nigeria has huge potentials; yet, the country's failure to diversify her economy substantially away from its over-dependence on oil has not helped matters. The oil and gas sector, which provides the bulk of Nigeria's revenue, contributes as much as 95% of foreign exchange earnings and about 80% of its budgetary revenues, made it difficult for agricultural exports to play an essential role Nigeria-USA trade under AGOA. Similarly, the high cost of production, lack of adherence to contractual terms, and ignorance of local and US customs regulations were identified as some of the hindrances to most Nigerian SMEs' export capacities.

Therefore, the main conclusions of the study are surmised herein. First, the Nigerian government adopt and implement the National AGOA strategy. The strategy has been developed and validated by stakeholders, but yet to be approved by the government. Hence, through the Honourable Minister of Industry, there is a need for the government, Trade and Investments to urgently adopt and approve the document. In addition, the government should ensure the integration of AGOA into National Planning and Budgeting process. One way to boost agricultural value chain drive economic diversity and productivity in the agricultural sector is to embark on agricultural industrialisation and implement innovative financing models that cater to the needs of both low-income farmers and high-income processors.

Second, the Federal Government of Nigeria (FGN) should ensure that export-related agencies collaborate to achieve the desired result of exporting under AGOA. The NEPC-AGOA Desk, Ministry of Industry, Trade and Investment, Nigerian Export-Import Bank and Bank of Industry should synergise addressing the challenges confronting AGOA implementation in Nigeria developed plan and strategy for post-2025. Also, establishing genuine business relationships with buyers in the USA is very necessary. This process should be done consistently as executives and business contacts in USA's firms change jobs and positions frequently. Cultivating business reputation and trust with buyers is an ongoing activity that requires efforts and time. This is crucial, especially when exporters are new to the market. The best promotional strategy is to provide realistic expectations of quality and volume for buyers. Participating firms should, hence, strive to build lasting relations by sticking to the simple principle of reliability of product quality, promptness of delivery, avoiding overpromising or any move that might destroy the firm's reputation among existing and potential buyers.

Declarations

Author contribution statement

Romanus Osabohien: Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Ngozi Adeleye: Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Evans Osabuohien: Conceived and designed the experiments; Contributed reagents, materials, analysis tools or data; Wrote the paper.

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Data availability statement

Data will be made available on request.

Declaration of interests statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

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