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DETERMINANTS OF THE EFFICIENCY EFFECTS OF FREE TRADE AGREEMENTS ON SERVICES SECTOR PRODUCTIVITY GROWTH IN NIGERIA

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ABSTRACT
The study examines the determinants of the efficiency effect of Free Trade Agreements (FTAs) on services sector productivity growth in Nigeria from 1970 to 2022. The data was analyzed using the Autoregressive Distributed Lag (ARDL) technique. Empirical results showed that the significant factors responsible for efficiency effect of FTAs on services sector productivity growth in the long run were inflation and corruption. Export competitiveness and democratic accountability were found to be significant factors responsible for the efficiency effect of FTAs on services sector productivity growth in the long run. In the short run, the findings showed that electricity was a significant factor responsible for the efficiency effect of FTAs on services sector productivity growth. It was found that corruption was also a significant factor responsible for the short-run efficiency effect of FTAs on services sector productivity growth. While utilising inflation control, export competitiveness, and democratic accountability, policymakers should concentrate on tackling structural problems like corruption and electricity shortages.

KEYWORDS: *Free Trade Agreements; productivity growth; Efficiency*
***JEL Classifications**: F15, O47, C24*

1.INTRODUCTION

Economic and trade performance play critical roles in development, particularly in emerging countries. Success in this setting is multifaceted and can be judged using a variety of indicators. Productivity growth is an important indicator of economic success because it shows how efficiently an economy employs labour and physical capital to produce output. Increased productivity is recognised as a key driver of economic growth and development in both the private and governmental sectors. In emerging nations such as Nigeria, productivity trends are increasingly centred on the services sector, where the value of services exceeds the value of inputs used. Formal growth theory provides the primary theoretical underpinning for understanding this phenomenon. Regional trade agreements and free trade agreements are common forms of regional economic integration (REI) that can affect productivity outcomes (Alinsato, 2022; Chand, 2022; Australian Productivity Commission, 2013).

FTAs, such as the African Continental Free Trade Area (AfCFTA), North American Free Trade Agreement (NAFTA), US-Mexico-Canada Trade Agreement (USMCA), EU-Japanese Free Trade Agreement, and DR-CAFTA, entail countries agreeing to reduce tariffs but keeping external import taxes. These agreements promote international trade, specialisation, consumer access to high-quality foreign products, competition, and market growth. They also promote economic growth, including higher living standards, job creation, and revenue generating. Economists consider efficiency as an important criterion to evaluate policies and programs such as free trade agreements (FTAs), because increased efficiency has the potential to boost productivity, real income, and economic well-being (Chappelow, 2019; and Onwuka & Udegbunam, 2019).

FTAs can enhance productivity growth in the services industry by more efficiently allocating resources and strengthening international competition. These agreements have the potential to open markets, lower trade barriers, and boost competition, resulting in greater efficiency and innovation. They also encourage international investment, technology transfer, and skill exchange. FTAs also standardise practices, which reduces transaction costs. Finance, logistics, and information and communication technology (ICT) are critical services for industry and trade, and FTAs might indirectly boost service sector productivity by increasing demand for effective service inputs. However, the actual benefits of these accords are contingent on the efficacy of FTA, which could be dependent on several factors including institutional quality, electricity supply, export competitiveness, and infrastructure among others.
Nigeria's governance indices are poor, scoring 45.7 on the Ibrahim Index of African Governance and ranking 140th on Transparency International's Corruption Perceptions Index (ISS Africa, 2023; Transparency

International, 2024). The country's power generation capacity barely matches a fraction of demand, resulting in an estimated $29 billion in yearly economic losses. Nigeria's total competitiveness score remained low at 48.3. Infrastructure development has made mixed progress, with issues such as poor road quality, underutilised airports, and traffic congestion (Asadu, 2023; World Economic Forum, 2019).

Nigeria has pursued a number of strategies to enhance productivity growth, including joining the World Trade Organisation and participating in three major African free trade agreements (ECOWAS). However, doubts have been raised about Nigeria's ability to gain from these agreements, given previous trade deals have had little impact on the country's economy. The country's slow industrialisation and lack of growth in its service sector raise concerns about the benefits of free trade agreements, which may impede Nigeria's competitiveness and productivity. Thus, raising concerns about the factors responsible for the efficiency effect of FTAs on productivity growth, especially in the services sector.

Although empirical research has looked at the impact of free trade agreements on Nigeria's economic performance (Ihua et al., 2018; Titus & Abiodun, 2017, etc.), there is still a lack of understanding about the factors responsible for the efficiency effects of FTAs on productivity growth especially in the services sector. This study seeks to fill this vacuum by looking into the factors responsible for the efficiency effects of FTAs in Nigeria's services industry. The findings can help Nigeria and other African economies maximize free trade agreements to promote sustainable development and inclusive growth.

2.LITERATURE REVIEW

2.1 Conceptual Literature

Productivity is a measure of production efficiency that indicates how well a country's economy uses its resources to generate output and wealth. It is an important feature of economic growth since it compares the quantity of inputs such as labour and capital utilised to manufacture items to the economic output. Productivity is defined differently by Dieppe et al. (2022), the Reserve Bank of Australia (2023), and the Department for International Trade (2018). Dieppe et al. (2022) define productivity as output per unit of labour input, while the Reserve Bank of Australia (2023) defines it as total output produced with a given set of inputs.

A free trade agreement (FTA) is a bilateral agreement between countries that eliminates tariffs while keeping import duties separate from other countries. FTAs can also be defined as regions or countries that have reached agreements to promote commerce among themselves (Chappelow, 2019). Trade is boosted by lowering tariff and non-tariff trade barriers. FTAs are reciprocal agreements on export and import liberalisation policies that require signatories to commit to eliminating tariffs between partner countries while keeping independent levies on imports from non-members (Cisse and Fofana, (2013). FAT allows for full tariffs, whereas trade openness allows for full tariffs. This study focusses on service sector productivity, which is calculated as the change in production divided by the labour force.

2.2 Empirical Literature

Hsu-Mike (2021) investigated the effects of tariff reductions on manufacturing input productivity in Uruguay's service industries. The study used data from 1998 to 2005. Tariff reduction had a positive and significant influence on trade liberalisation and productivity in the services and manufacturing industries. Fusacchia et al. (2021) examined the effects of regional trade liberalisation on production fragmentation and networks across 121 nations. The study employed a computable general equilibrium model. The findings indicated that trade agreements had a significant impact on trade patterns in terms of value-added structure and extra- or intra-regional destinations. Kaushal (2022) used a stochastic frontier version of the gravity model to investigate the influence of RTAs on India's export efficiency. The study examined the period from 2008 to 2018. The findings demonstrated that the regulatory quality of importing countries had a significant positive impact on India's export efficiency. Zhou et al. (2022) used the difference-in-difference method to investigate the effect of reducing regional trade policy uncertainty on the productivity of Chinese export companies. The study period lasted from 2007 to 2013. The findings revealed that signing the China-ASEAN Free Trade Area greatly reduced regional trade policy uncertainty, hence improving the efficiency of Chinese firms exporting to ASEAN. Edeme et al. (2020) used the covariance matrix to analyse the potential impact of free trade regions and common currencies on agricultural exports in 45 African countries, adjusting for both heteroscedasticity and autocorrelation. The data period spanned from 1996 to 2018. The findings revealed that free trade agreements had a positive marginal effect on agricultural exports, although the impact was not instantaneous. Marouani and Mouelhi, (2015) investigated the dynamics of sectoral productivity growth in Tunisia. The study period covered from 1997 to 2002. The study used the Olley and Pakes (1996) approach to Total Factor Productivity (TFP). The result showed that labour market and trade reforms did not improve because of the incompetence of factor markets, barriers to entry in some sectors, and the

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focus of the firms' advancement program only on some selected sectors. Baier and Bergstrand (2015) investigated the cross-sectional impact of preferential trade agreements and free trade agreements on the value of bilateral merchandise trade in the U.S. for 40 years. The study adopted the gravity equation model. The result showed that Nations pairs with higher GDPs had a positive correlation with preferential trade agreements, indicating improved welfare benefits from an FTA and better trade formation between the pair.

From the empirical literature reviewed, most research on trade, particularly in Nigeria, concentrated on trade liberalisation or free trade agreements, rather than the causes or determinants of the efficiency impacts of FTAs, as in this study. On the empirical front, the drivers of the efficiency benefit of FTAs on productivity growth have been overlooked in prior research, particularly in developing countries like Africa. This study aims to fill this gap in the literature on FTAs and productivity growth.

3.METHODOLOGY

The following functional form is specified,

$$U_t = f(INSQ, ELECTRIC, XCOMPET, INFRA, INF) \quad 1$$

Where: U_t is an efficiency (inefficiency) variable to be generated. INSQ is institutional quality (proxied by corruption, and democratic accountability), ELECTRIC is electricity supply, XCOMP is export competitiveness – measured by Bela Balassa index of competitiveness, $INFRA$ is infrastructure – measured by transport services (% of service exports), while INF inflation. Substituting the proxies for institutional quality and re-specifying Equation 1 in an econometric equation yield:

$$U_t = \alpha_0 + \alpha_1 \mathrm{COR} + \alpha_2 \mathrm{DACC} + \alpha_3 ELECTRIC + \alpha_4 XCOMP + \alpha_5 INFRA + \alpha_6 \mathrm{INF} + e_2 \quad 2$$

Where e_2 is the error term. Equation 1 is expressed in an autoregressive distributed lag (ARDL) form as:

$$U_t = \alpha_0 + \alpha_1 U_t_{t-1} + \alpha_2 \mathrm{COR} + \alpha_3 \mathrm{DACC} + \alpha_4 ELECTRIC + \alpha_5 XCOMP + \alpha_6 INFRA + \alpha_7 \mathrm{INF} + \sum_{j=1}^{p} \phi_j U_t_{t-j} + \sum_{s=0}^{q} \rho_s \mathrm{COR}_{t-s} + \sum_{m=0}^{q} \delta_m \mathrm{DACC}_{t-m} + \sum_{z=0}^{q} \vartheta_z ELECTRIC_{t-z} + \sum_{z=0}^{q} \varphi_z XCOMP_{t-z} + \sum_{w=0}^{q} \varphi_w INFRA_{t-w} + \sum_{v=0}^{q} \varphi_v \mathrm{INF}_{t-v} + \sum_{z=0}^{q} h_z ECM1_{t-z} + e_3 \quad 3$$

The different terms in the Equation 3 model the short-run while the lag terms model the long-run process. e_3 is the error term while a_i (i = 1,2,3, …8) and ϕ,ρ, δ,ψ, ϑ, φ, w, and v are the parameters of the variables in the long and short run. The Akaike Information Selection Criteria will be used to select the optimal lag length. A good thing about the ARDL model is that it has a small sample property and produces unbiased parameter estimates of the short and long-run variables as well as valid t-statistics even if some of the regressors are endogenous. The ARDL model is also appropriate for use even if the underlying regressors (the explanatory variables) are stationary at level – I(0) or order 1 – I(1) or a mix of both at level or order 1 variables but none of the variables should be integrated of order 2. Following the Granger representation theorem, if cointegration exits among the regression variables, then there is a mechanism (to be modelled by an error correction model) that explains the adjustment process of the cointegrated variables towards equilibrium. On this basis, an error correction model is specified as:

$$\Delta U_t = a_0 + \sum_{j=1}^{p} \phi_j U_t_{t-j} + \sum_{s=0}^{q} \rho_s \mathrm{COR}_{t-s} + \sum_{m=0}^{q} \delta_m \mathrm{DACC}_{t-m} + \sum_{z=0}^{q} \psi_z \mathrm{BUQ}_{t-z} + \sum_{z=0}^{q} \vartheta_z ELECTRIC_{t-z} + \sum_{z=0}^{q} \varphi_z XCOMP_{t-z} + \sum_{w=0}^{q} \varphi_w INFRA_{t-w} + \sum_{v=0}^{q} \varphi_v \mathrm{INF}_{t-v} + \gamma ECM1_{t-1} + e_3 \quad 4$$

Where $\mathrm{ECM1}_{t-1}$ is the error correction term.

First, an efficiency (inefficiency) variable (data) will be generated by estimating an equation through the frontier estimation framework using a productivity measures – services sector output as a proportion of the labour force. Then, the efficiency (inefficiency) variable to be generated (U_t) will be used as the dependent variable against explanatory variables as factors responsible for the efficiency (inefficiency) effect of FTAs on productivity.

Construction of the Index of Export Competitiveness – The Bela Balassa Index of Competitiveness

Export competitiveness can be measured using different measures. Some of the commonly used models or measures are the Balassa Index proposed by Bela Balassa, the double diamond model as credited to D'Cruz and Verbeke, and the trade intensity index and the share of the market in total exports. The Bela Balassa index is preferable as it is proven empirically to be theoretically sound (Nwokoye et al., 2020; Hinloopen & van Marrewijk, 2001; Hinloopen & van Marrewijk, 2006; Sargsyan, 2018).

The Balassa Index was originally developed by Liesner (1958) but was improved and made popular by Bela Balassa (1965, 1989). The index is alternatively called the index of revealed comparative advantage (RCA) because the flow of actual exports discloses the strong sectors of a country. This model is efficient in determining the export competitiveness of a country. The Balassa index reveals the relevance of certain goods or sectors within the exports of a country. Balassa's ideal is that a country has several producing and exporting manufactured goods.

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To determine the export competitiveness of a country (Nigeria), the share of the manufacturing exports of the total exports of country A (Nigeria) has to be compared with the share of the manufacturing exports of the total exports of a reference country – for this study, the reference countries are South Africa and Ghana respectively. The Balassa index is, therefore, a normalized share of a country's exports. Let BI_k^A represent the Balassa index for country A (Nigeria) and industry k (the manufacturing industry), then, it is specified as (Nwokoye et al., 2020):

$$BI_k^A = \frac{share\ of\ Industry\ k\ in\ Country\ A\ total\ Exports}{share\ of\ Industry\ k\ in\ the\ total\ Exports\ of\ the\ Reference\ Country} \quad 5$$

The country under consideration (the exporting country A) is assumed to be having a revealed comparative advantage in industry k over the reference country if $BI_k^A > 1$. This means that the industry is of higher importance for country A's export performance than (compared to) the importance of the industry to the export performance of the reference country. However, if $BI_k^A < 1$, then, it means that the reference country is having a revealed comparative advantage in industry k over country A's export performance in the same industry (that is, country A has a comparative disadvantage).

For example, taking Nigeria as the country under consideration (country A) and letting South Africa be the reference country, and the industry is the manufacturing industry, then, the equation for consideration is:

$$BI_{manufacturing}^{Nigeria} = \frac{share\ of\ the\ Manufacturing\ Industry\ in\ Nigeria's\ total\ Exports}{share\ of\ the\ Manufacturing\ Industry\ in\ the\ total\ Exports\ of\ South\ Africa} \quad 6$$

From Equation (3.33) above, we can see that Nigeria's (exports) competitiveness is the share of the manufacturing industry in Nigeria's exports (Nigeria's manufacturing industry exports divided by Nigeria's total exports) as a ratio of the share of the manufacturing industry in the total exports of South Africa (South Africa's manufacturing industry exports divided by South Africa's total exports). Again, for this study, South Africa and Ghana are chosen as the reference countries. This is because the countries are Nigeria's top trading partners in Africa and, especially for South Africa, no FTAs were in place with Nigeria before the recent signing of the AfCFTA (Nwokoye et al. 2020).

The ARDL model that modelled the factors that may be responsible for the efficiency (inefficiency) effect of FTAs on productivity growth can be estimated using the Ordinary Least Square (OLS) technique with the identification of the order of the ARDL. Therefore, the OLS technique will be employed to estimate the ARDL model after determining the order of the ARDL using the Akaike Information Selection criteria. After estimating the ARDL, a cointegration test would be conducted using the bounds test developed by Pesaran et al. (2001) and Shin et al. (2011). The bounds test is a Wald F-test. The null hypothesis is that there is no cointegration of the variables. The alternative hypothesis is that the variables are cointegrated. Depending on the outcome of the test, if cointegration is found, then the error correction model would be estimated to determine the speed of adjustment at which the variables adjust back to equilibrium in the long run when there is disequilibrium in the short run. Then, inferences on the long-run and short-run factors responsible for the efficiency (inefficiency) of productivity growth will be made.

4. RESULTS

4.1 Unit root Test

Augmented Dickey-Fuller (ADF) and the Kwiatkowski, Phillips, Schmidt, Shin (KPSS) tests were employed to test the stationary of the variables and the result is presented on Table 1.

Table 1: Unit Root Test Results

Variable	Augmented Dickey-Fuller (ADF) Result		Kwiatkowski, Phillips, Schmidt, Shin (KPSS) Result		Lag Order	~I(d)
	Level	1st Diff.	Level	1st Diff.		
U_t	-1.884	-4.616	0.135	0.049*	2	I(1)
COR	-0.319	-2.285*	0.155	0.076*	2	I(1)
DACC	-1.173	-4.745*	0.174	0.106*	2	I(1)
ELECTRIC	-3.400*	-	0.039*	-	2	I(0)
INFRA	-1.147	-3.842*	0.184	0.075*	2	I(1)
BUQ	-1.611	-4.201*	0.132	0.039*	2	I(1)
XCOMP	-0.117	-3.145*	0.211	0.079*	2	I(1)
INF	-1.338	-4.846*	0.174	0.043*	2	I(1)

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	The null hypothesis is: the variable contains a unit root	The null hypothesis is: the variable is trend-stationary		
Where * denotes significance at 5% and the rejection of the null hypothesis of the presence of unit root. The optimal lag lengths were chosen according to Akaike's Final Prediction Error (FPE), and Akaike's information criteria. The ADF 5% critical value at the level and 1st difference is -1.950. The Kwiatkowski, Phillips, Schmidt, Shin (KPSS) 5% critical value, on the other hand, at level and 1st difference is 0.146.				

Source: Computed by the researchers

Electricity supply showed significant test statistics at level, while the rest of the variables showed insignificant test statistics. This implies that the variable was stationary at level, while the rest of the variables were nonstationary at level. Therefore, the nonstationary variables were differenced once to determine the stationarity status at 1st difference. The result showed significant test statistic, suggesting that the variables were stationary at 1st difference.

4.2 Factors Determining the Efficiency Effect of FTAs on Services Sector Productivity Growth

An efficiency variable (data) was generated through the frontier estimation framework. Then, the efficiency variable generated was used as the dependent variable against explanatory variables as factors determining the efficiency effect of FTAs on services sector productivity growth. The variables were tested for cointegration using the Bounds test and the result is presented on Table 2.

Table 2: Bounds Test Result

	10%		5%		1%		p-value	
	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)
F	2.851	4.124	3.496	4.952	5.046	6.925	0.000	0.000
t	-2.509	-3.408	-2.868	-3.817	-3.603	-4.645	0.000	0.000
F = 15.922 t = -6.856								

Source: Computed by the researchers

The F-value of 16.028 were compared to the 5% critical values and discovered that it is greater than the lower and upper bound critical values of 3.496 and 4.952. Since it exceeds the upper bound, we rejected the null hypothesis of a level form relationship. This was further confirmed using the significant p-values at orders 0 and 1. This signified that the variables were cointegrated. That is, there existed a long-run partnership. The t-test yielded similar results, with t-values that exceeded the 5% lower and upper bounds critical values in absolute terms. The error correction results are shown on Table 3.

Table 3: Factors responsible for the efficiency (inefficiency) effect of FTAs

	Coefficient	Standard error	t-value	p-value
Adjustment	-1.5250	0.5240	-2.91	0.000
Long-Run				
COR	-0.0621	0.0184	-3.36	0.000
DACC	0.0274	0.0102	2.68	0.006
ELECTRIC	0.0089	0.0054	1.65	0.175
XCOMP	0.0370	0.0129	2.85	0.000
INFRA	0.0292	0.0216	1.35	0.248
INF	-0.0911	0.0329	-2.76	0.001
Short-Run				
U_ts	-0.0813	0.5075	-0.16	0.880
COR	0.0452	0.1220	0.37	0.731
DACC	0.0662	0.0636	1.04	0.357
ELECTRIC	0.0725	0.0228	3.18	0.000
XCOMP	0.0118	0.0044	2.65	0.009
INFRA	0.0620	0.0378	1.64	0.177
INF	0.0226	0.0837	0.27	0.803
Constant	0-.0015	0.0013	-1.12	0.326
R-squared		0.7549		
Adjusted R-Squared		0.5296		
Durbin's alternative test for autocorrelation		0.100 (p = 0.7520)		
Breusch–Pagan test for heteroskedasticity		0.29 (p = 0.5923)		

Source: Computed by the researchers

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With significant t-value -2.91, the adjustment coefficients for services efficiencies (-1.5250) suggested that when there was disequilibrium, the variables significantly adjusted to equilibrium. In particular, when there are discrepancies or shocks in the economy, the variables return to equilibrium at a significant speed of 1.53 per cent. In the long run, corruption exhibited a negative coefficient of -0.0621 with a t-value of -3.36. The significant t-values indicate that corruption significantly reduces the efficiency effect of FTAs on services sector productivity growth. Specifically, a percentage rise in corruption resulted in a 0.06 per cent significant drop in the efficiency effect of FTAs on services sector productivity growth. As a result, corruption had a long-run negative and significant effect on efficiency in FTAs. In contrast, the short-run corruption coefficient is 0.0452 with a t-value of -0.37. This revealed that a percentage rise in corruption in the short run resulted in a 0.05 per cent insignificant increase in the efficiency effect of FTAs on services sector productivity growth. As a result, in the short run, corruption insignificantly increases the efficiency effect of FTAs on services sector productivity growth.

For democratic accountability, the long run coefficients is 0.0274 with a t-values of 2.68. This meant that, over time, an increase in democratic accountability resulted in a 0.03 per cent significant increase in the efficiency effect of FTAs on services sector productivity growth. In the short run, the coefficient is 0.0662 with t-value of 1.04. In precise terms, an improvement in democratic accountability resulted in a 0.07 per cent insignificant rise in the efficiency effect of FTAs on services sector productivity growth. This suggested that democratic accountability positively and significantly enhances the efficiency effect of FTAs on services sector productivity growth. However, in the short run, democratic accountability insignificantly enhances the efficiency effect of FTAs on services sector productivity growth.

The coefficient for electricity supply is 0.0089 with a t-value of 1.65. This implied that a percentage increase in electricity supply resulted in a 0.01 per cent insignificant rise in the efficiency effect of FTAs on services sector productivity growth. In the short run, the results revealed significant coefficient of 0.0725. This implied that a percentage increase in electricity supply amounted to a 0.07 per cent significant boost in the efficiency effect of FTAs on services sector productivity growth. As a result, electricity supply insignificantly enhances the efficiency effect of FTAs on services sector productivity growth. In the long run, however, electricity supply promotes the efficiency effect of FTAs on services sector productivity growth.

The export competitiveness coefficient is 0.0370 with t-value of 2.85 in the long run. This suggested that an improvement in export competitiveness resulted in a 0.04 per cent significant increase in the efficiency effect of FTAs on services sector productivity growth. In the short run, an improvement in export competitiveness resulted in a 0.07 per cent boost in the efficiency effect of FTAs on services sector productivity growth. This meant that, in the long run, export competitiveness significantly boosts the efficiency effect of FTAs on services sector productivity growth.

In terms of infrastructure, the coefficient is positive but insignificant in the long run. This implied that an improvement in infrastructure had insignificantly influence the efficiency effect of FTAs on services sector productivity growth. In the short run, the infrastructure coefficient is positive and insignificant. This suggested that, in the short run, infrastructure insignificant increases the efficiency effect of FTAs on services sector productivity growth.

In the long run, a percentage increase in inflation reduced the efficiency effect of FTAs on services sector productivity growth by 0.09 per cent. In the short run, a percentage increase in inflation resulted in an insignificant decrease in the efficiency effect of FTAs on services sector productivity growth. This implied that inflation significantly reduces the efficiency effect of FTAs on services sector productivity growth. However, in the short run, inflation had a insignificantly reduces the efficiency effect of FTAs on services sector productivity growth.
The R^2 coefficient is 0.7549. This means that the explanatory variables – corruption, and democratic accountability, electricity supply, export competitiveness, and infrastructure explained about 75.49 per cent change in the efficiency effect of FTAs on services sector productivity growth. The remaining percentage changes in efficiency effect. Durbin's alternative test for autocorrelation showed a coefficient of 0.100 with an insignificant p-value of 0.7520. This implied no significant autocorrelation. This means that the independent variables are free from autocorrelation. Therefore, the null hypothesis of no autocorrelation is accepted at the 5 per cent level. **T**he Breusch/Pagan heteroskedasticity test Chi-square Statistic of 0.29 ($p = 0.5923$) is insignificant. Therefore, the null hypothesis that the independent variables have constant variance is accepted at the 5 per cent level. This means that the variables have no heteroskedasticity.

4.3 Discussion of Results

The long-run efficiency effect of FTAs on services sector productivity growth are significantly influenced by inflation and corruption. Nonetheless, export competitiveness and democratic accountability were significant factors that ultimately determine the efficiency effect of FTAs on services sector productivity growth. Also, in the long run, the availability of electricity played a significant role in determining the efficiency effect of FTAs on services sector productivity growth. Concerning the short run, corruption was a significant factor in the short-run efficiency effect of FTAs on services sector productivity growth, whereas democratic accountability was a significant factor in the short-run efficiency effect of FTAs on services sector productivity growth. Also in the short run, the availability of electricity significantly influences the efficiency effect of FTAs on services sector productivity growth.

Targeted and distinct policy responses are necessary due to the interaction of factors driving productivity inefficiencies in the services sectors. While utilising inflation control, export competitiveness, and democratic accountability, policymakers should concentrate on tackling structural problems like corruption and electricity shortages. It is possible to successfully decrease inefficiencies, promote sectoral growth, and raise overall productivity by combining short-term interventions with long-term initiatives.

5.CONCLUSION AND RECOMMENDATION

The study examined the determinants of the efficiency effect of FTAs on services sector productivity growth in Nigeria and came up with several findings. Based on the findings, it is concluded that Corruption and inflation are factors responsible for the efficiency effect of FTAs on services sector productivity growth. Also, democratic accountability and export competitiveness were important determinants of the efficiency effect of FTAs on services sector productivity growth. Additionally, over time, the efficiency effect of FTAs on services sector productivity growth were significantly influenced by the availability of electricity. In the short term, democratic accountability played a prominent role in the efficiency effect of FTAs on services sector productivity growth, while corruption played a major role in its short-term inefficiency. In the short term as well, the efficiency effect of FTAs on services sector productivity growth was significantly impacted by the availability of electricity. While utilising inflation control, export competitiveness, and democratic accountability, policymakers should concentrate on tackling structural problems like corruption and electricity shortages.

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