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TOURISM AND ECONOMIC GROWTH MODERATED BY FOREIGN DIRECT INVESTMENT AND EXCHANGE RATE IN SELECTED AFRICAN ECONOMIES.

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Abstract
This study used panel data from 1995 to 2022 for seven African countries (Nigeria, Tunisia, Kenya, Tanzania, South Africa, Morocco, and Mauritius) and the vector autoregressive (VAR) technique to examine the relationship between tourism and economic growth moderated by foreign direct investment and exchange rate. The variables for the study are tourism receipts (TR), tourist arrivals (TAR), exchange rate (EXR), foreign direct investment (FDI), and GDP as a proxy for economic growth. Findings from the study revealed that tourism receipts of the selected countries at various lags had a positive and non-significant effect on the economies in the short-run. In contrast, tourism receipts at various lags positively and significantly impacted the countries' economic growth in the long- run. Tourist arrivals at various lags reveal a negative and non-significant effect on economic growth in the short-run, while in the long-run, tourist arrivals at various lags had a positive and significant impact on the growth of the economies. The moderating effect of exchange rate and foreign direct investment on tourism were positive and significant both in the short and long run. while in the long-run period, tourism receipts at various lags had a positive and significant effect on economic growth of the countries. Tourist arrivals at various lags reveal a negative and non-significant effect on economic growth in the short-run, while in the long-run period, tourist arrivals at various lags had a positive and significant impact on the growth of the economies. The moderating effect of exchange rate and foreign direct investment on tourism were positive and significant both in the short and long-run. The study recommended that African leaders work together to coordinate policy initiatives to maximize the potential of tourism on the continent to combat unemployment and poverty and promote sustainable growth.

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1. Introduction

The economic significance of tourism is of paramount importance, as it exerts a direct impact on various sectors, including social, cultural, educational, and economic domains. This impact is manifested through the exchange of monetary compensation for goods and services required by tourists and also plays an extensive role in fostering international relations. According to Simms (2005), tourism is seen as a driver of economic growth, employment creation, which contribute to the reduction of poverty.

Brida, Cortes-Jimenez & Paulina (2016), the tourism industry plays a substantial role in the allocation of resources towards infrastructure development, labour utilisation, and fostering competition. The growth of global prosperity will contribute to a continued increase in tourism income, within this particular context, the integration of innovations and the heightened utilisation of technology are anticipated to make significant contributions towards the establishment of a sustainable infrastructure within the tourism industry, consequently leading to a reduction in costs (Balsalobre-Lorente, Lorente, Driha, & Sinha, 2020). These advancements hold the potential to mitigate the adverse impacts of the crisis currently afflicting the tourism sector. Policies are imperative in facilitating the sustainable growth and development of tourism in both developed and developing economies. The importance of sustainability in maintaining the resources upon which tourism businesses rely for product development has been acknowledged (Fredman & Tyrväinen, 2010).

The market flow of tourism is affected by competitiveness with more nearby destinations with competitive advantage over those that offer visitors products. While the Significant advantages of tourism also arise locally, such as improved income distribution, local economic growth, and job opportunities for low-skilled and distant workers, all of which have a direct and indirect positive effect on poverty rates (Landry,2018).

2. Objective of the Study

The general objective is to examine the effect of tourism on the selected Africans countries and the specific objectives are to;

i. examine the relationship between tourism receipts and economic growth.
ii. determine the effect of tourist arrivals on economic growth.
iii. determine the moderating effect of exchange rate and tourism on economic growth.
iv. determine the moderating effect of foreign direct investment and tourism on economic growth.

3. Literature Review

Several studies have been done to determine the relationship between tourism development and economic growth, known as (TLGH). The studies range from cross country to specific, using cross-section data and some using time series data. The studies have also used different proxies for tourism development and different methodologies.

The pioneering study on specific country was done by Balaguer and Cantavella-Jordà (2002); that determined the relationships between international tourism activity and economic activity in Spain during the period 1975-1997. Using Johansen‟s cointegration methodology, the study finds that earnings from international tourism activity positively affect the Spanish economic growth.

Dritsakis (2004) study showed the tourism impact on economic growth for Greece using a multivariate autoregressive VAR model. The results suggest that there is a “strong Granger causal” relation between international tourism earnings and economic growth. In the same pursuit, Cortés-Jiménez, Pulina, Prunera, and Artis (2009), also check the validity of the TLGH for Italy and Spain, studying the Granger causality through a VECM. According to the results the TLGH is confirmed in the long run for Spain, but the authors also find a bidirectional influence between tourism expansion and economic growth.

Yalcinkaya, Dastan, and Karabulut, (2018) studied how tourism receipts affected the nation's economy in the top 20 highest income-earning nations. Panel data analysis was used in the study, which examined the 20-year period from 1996 to 2016. The investigation's conclusion supported the tourism-led growth hypothesis by demonstrating a one-way causal relationship between tourism receipts and economic growth in each of the 20 countries that were sampled.

Oh (2005) on Korean experience using Engle and Granger two-stage approach and a (VAR) model concluded that the TLGH is not held for Korea. Although South Korea and Taiwan have similar experiences of economic development, according to Kim, Chen, and Jang (2006) using Granger causality test, they confirm a long-run equilibrium relationship and a bi-directional causality between tourism development and economic growth for Taiwan. Mulok, Mansur, Kogid, Asid, and Lily (2012) employed recently developed ARDL bounds testing approach to cointegration. The estimated result based on the long run time series behavior for the number of tourist arrival and economic growth indicator for Malaysia, shows that these variables are not cointegrated.

Srinivasan, Kumar, and Ganesh (2012) examined the relationship between tourism and economic growth for Sri Lanka through the Autoregressive Distributed Lag (ARDL) bounds testing approach. The investigation was carried out during the period 1969 to 2009. The results of the study showed that: tourism sector has a positive impact on economic growth and there are both a short-run and long-run relationship between tourism and economic growth and thereby Sri Lanka can enhance its economic growth by tourism development.

Using the ARDL-Bounds testing approach, Kibara, Odhiamo and Njuguna (2012) examined the relevance of the tourism-led growth hypothesis for Kenya, and they found that there is a uni-directional causality from tourism development and economic growth.

4. Theoretical Framwork

The Harrod-Domar growth theory is the theoretical underpinning which explains that the growth rate of an economy depends on the level of savings and investment. Harrod and Domar were interested in discovering the rate of income growth necessary for a smooth and uninterrupted working of the economy. The Harrod-Domar economic growth model stresses the importance of savings and investment as key determinants of growth.

5. Methodology

The study used panel data from 1995-2022 and adopted the classical vector autoregressive (VAR) technique, specifically, the vector error correction model (VECM). This technique was adopted on the premise that the pre-test conditions were met, that is, the stationarity of the series at first difference and the presence of a long run relationship between/amongst the series of interest.

6. Model Specification

Following Nyasha, Odhiambo &Asongu (2020) model, impact of tourism development on economic growth in the SSA as shown in equations 1 and 2 respectively.

$$y = f\ (TE, TR, FD, DS, DI, TO, PS) \quad (1)$$

$$yit = \alpha_0 + \alpha_1 TEit + \alpha_2 TR_{it} + \alpha_3 FD_{it} + \alpha_4 DS_{it} + \alpha 5 DI_{it} + \alpha_6 TO_{it} + \alpha_7 PS_{it} + \varepsilon_{it} \quad (2)$$

Where y_{it} economic growth; TE is tourism expenditure; TR is tourism receipt; FD is financial development; DS is the domestic savings; DI is domestic investment; TO is trade openness; PS is political stability; ε is the error term; $\alpha 0$is the constant; and $\alpha 1$-7 are the coefficients. Given the equations 1 and 2, this study adapted its model as follows: tourism and economic growth, the empirical model is specified in general functional form as in Equation (3.1) and in general linear form as in Equation (3.2).

$$Y = (TR, \text{TAR, EXR, FDI}) \quad (3.1)$$

$$Y_{it} = \alpha_0 + \alpha_1 TR_{it} + \alpha_2 TAR_{it} + \alpha_3 EXR_{it} + \alpha_4 FDI_{it} + \varepsilon_{it} \quad (3.2)$$

Where Y is economic growth, TAR is tourist arrivals, TR is tourism receipt. EXR is exchange rate, FDI is foreign direct investment. ε is the error term, $\alpha_0$is the intercept, α_{1-2} are the coefficients. Following Equation (3.1), the associated panel data estimation model is specified as follow:

$Y_{it} = \alpha_{it} + \vartheta_i + \rho_t + (X_{it}) + \varepsilon_{it}$ (3.3)

where, y is the dependent variable, economic growth proxied by gross domestic product (GDP) and is in logs; X is a vector of explanatory variables; TAR, TR, EXR and FDI; γ is a scalar vector of parameters α_{1-2}; ε is the disturbance term which follows N(0, σ2); the subscripts "i" and "t" represent country and time, respectively, such that $t = 1, \dots, T$; $i = 1, \dots, N$ where T is the number of observations over time while N is the number of individual panel members; and ϑi and ρt are country and time specific effects, respectively.

$$lnY_{it} = \beta_0 + \sum_{i=1}^{m} \pi 1 \Delta Y_{it-1} + \sum_{i=0}^{m} \pi 2 \Delta TR_{it-1} + \sum_{i=0}^{m} \pi 3 \Delta TAR_{it-1} + \sum_{i=0}^{m} \pi 4 \Delta FDI_{it-1} + \sum_{i=0}^{m} \pi 5 \Delta EXR_{it-1} + \rho lnY_{it-1} + \rho lnTR_{it-1} + \rho lnTAR_{it-1} + \rho lnFDI_{it-1} + \rho lnEXR_{it-1} + \delta ECT_{t-1} + \varepsilon_{it}$$

where Δ is the first-difference operator, α0 is intercept, t is time element, πi represent the short-run parameters of the model, ρi are long-run coefficients, ECT is the error correction term and ε_{it} is white noise error term and lastly, it represents country at a particular time period. (3.4)

Results of the Findings

Table 1: Descriptive Statistics Result

	GDP	TR	TAR	FDI	EXR
Mean	111.8486	2.839235	4.092092	1.842092	246.0422
Median	47.19500	1.820000	2.760000	0.815000	28.92000
Maximum	574.1800	11.20000	15.12000	40.66000	2325.940
Minimum	4.040000	0.040000	0.290000	-0.180000	0.950000
Std. Dev.	139.2893	2.912112	3.744140	3.465485	535.1143
Skewness	1.583655	1.492687	1.186108	7.587647	2.685036
Kurtosis	4.231723	3.952849	3.699569	81.89144	9.328610
Jarque-Bera	94.31675	80.19979	49.95390	52708.88	562.5934
Probability	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	21922.33	556.4900	802.0500	361.0500	48224.27
Sum Sq. Dev.	3783293.	1653.677	2733.625	2341.870	55837719
Observations	196	196	196	196	196

Source: Authors Computation

The Skewness measures the degree of asymmetry of the sampled data around its mean.The measures of normality considered by this study were skewness and kurtosis. Table 1 shows, the skewness values of 1.58 billion dollars for gross domestic product (GDP) of selected African countries; 1.49 billion dollars for tourism receipt (TR) of selected African countries; 1.18 million persons for tourism arrival (TAR) of selected African countries; 7.58 billion dollars for foreign direct investment (FDI) of selected African countries; and 2.68 for exchange rate (EXR)

of selected African countries. mirrored a positively skewed distribution, implying that the distribution for these variables set had a long right tail with higher values than the sampled mean.

The kurtosis values of 4.23 billion dollars for gross domestic product (GDP) of selected African countries; 3.95 billion dollars for tourism receipt (TR) of selected African countries; 43.69 million persons for tourist arrivals (TAR) of selected African countries; 81.89 billion dollars for foreign direct investment (FDI) of selected African countries; and 9.32 for exchange rate (EXR) of selected African countries. respectively and were found to be greater than 3.0000 required for a normal distribution. It therefore, means that these datasets were leptokurtic as they produced higher value than the normal.

Table 2: Correlation Matrix

Covariance Analysis: Ordinary

Correlation						
Probability						
Observations	GDP	TR	TAR	FDI	EXR	
GDP	1.000000					

	196					
TR	0.375063	1.000000				
	0.0000	-----				
	196	196				
TAR	0.529870	0.860861	1.000000			
	0.0000	0.0000	-----			
	196	196	196			
FDI	0.532282	0.269196	0.311877	1.000000		
	0.0000	0.0001	0.0000	-----		
	196	196	196	196		
EXR	-0.123060	-0.182128	-0.319701	-0.084115	1.000000	
	0.0857	0.0106	0.0000	0.2411	-----	
				196	196	

Source: Authors Computation

Furthermore, the correlation coefficient of the relationship between tourism receipt (TR)of selected African countries and tourism arrival (TAR) of selected African countries was positive and significant following its correlation coefficient of 0.8608 and p-value of 0.0000. Similarly, the correlation coefficient of the relationship between tourism receipt (TR)of selected African countries and foreign direct investment (FDI) of selected African countries was positive and significant following its correlation coefficient of 0.2691 and p-value of 0.0000. On the other hand, the correlation coefficient of the relationship between tourism receipt (TR) of selected African countries and exchange rate (EXR) of selected African countries was negative and significant following its correlation coefficient of -0.1821 and p-value of 0.0106.

Furthermore, the correlation coefficient of the relationship between tourism arrival (TAR) of selected African countries and foreign direct investment (FDI) of selected African countries was positive and significant following

its correlation coefficient of 0.3118 and p-value of 0.0000. On the other hand, the correlation coefficient of the relationship between tourist arrivals (TAR) of selected African countries and exchange rate (EXR) of selected African countries was negative and significant following its correlation coefficient of -0.3197 and p-value of 0.0000. Lastly, the correlation coefficient of the relationship between foreign direct investment (FDI) of selected African countries and exchange rate (EXR) of selected African countries was negative and non-significant following its correlation coefficient of -0.0841 and p-value of 0.2411.

Table 3: Result of panel unit root test (levels)

	Common Unit Root				Individual Unit Root			
	Levin, Lin & Chin t*		ImPesaran and Shin W-stat		ADF - Fisher Chi-square		PP - Fisher Chi-square	
Variable	Statistics	P	Statistics	P	Statistic	P	Statistic	P
GDP	2.6235	0.9956	3.9005	1.0000	3.4418	0.9980	4.6267	0.9904
TR	-2.1402	0.0162*	-0.8288	0.2036	14.832	0.3897	21.929	0.0801
TAR	-0.8083	0.2094	-0.6264	0.2655	15.245	0.3616	20.625	0.1116
FDI	-0.0281	0.4888	-0.4730	0.3181	12.962	0.5295	38.055	0.0005*
EXR	-1.7745	0.0380*	0.2309	0.5913	11.705	0.6299	9.5895	0.7915

Source: Authors Computation

Table 4: Result of panel unit root test (first difference)

	Common Unit Root				Individual Unit Root			
	Levin, Lin & Chin t*		ImPesaran and Shin W-stat		ADF - Fisher Chi-square		PP - Fisher Chi-square	
Variable	Statistics	P	Statistics	P	Statistic	P	Statistic	P
GDP	-4.7373	0.0000*	-5.6073	0.0000*	58.647	0.0000*	97.718	0.0000*
TR	-7.5652	0.0000*	-7.2920	0.0000*	76.476	0.0000*	127.15	0.0000*
TAR	-7.5742	0.0000*	-7.7526	0.0000*	78.950	0.0000*	130.31	0.0000*
FDI	-2.1438	0.0160*	-7.4036	0.0000*	77.318	0.0000*	200.10	0.0000*
EXR	-6.3923	0.0000*	-5.8789	0.0000*	60.129	0.0000*	77.430	0.0000*

Source: Authors Computation

7. Unit root tests

A unit root test is concerned with whether a time series variable is non-stationary and possesses a unit root and that the data is suitable for the model.

From the Table 3, the measurement of the group unit root in the data revealed that all the variables in the group were not jointly integrated in all the methods except for PP-Fisher Chi-square method, that is, not all the variables were found to be jointly stationery at 1 per cent, 5 per cent and 10 per cent significance at levels. Giving the information of the summarized group unit root tests when conducted at their levels, the study can accept the null hypothesis for the variables (GDP, TR, TAR, FDI and EXR) that the variables have unit root at one per cent, 5 per cent and 10 per cent level of significance. However, when the series were subjected to further tests at first difference, the variables (GDP, TR, TAR, FDI and EXR) were found to have no unit root at one per cent, 5 per

cent and 10 per cent level of significance, and stationary in all the methods as shown in Table 4., hence, the null hypothesis was rejected. Since the study has confirmed the stationarity of the variables it therefore means that the variables chosen for this study are suitable to be used for further analysis.

Table 5: Vector error correction model (VECM) result

Vector Error Correction Estimates			
Standard errors in ( ) & t-statistics in [ ]			
Cointegrating Eq:	CointEq1		
LGDP(-1)	1.000000		
LTR(-1)	-37.51754		
	(14.6291)		
	[-2.56459]		
LTAR(-1)	-6.304824		
	(16.1787)		
	[-0.38970]		
C	23.61622		
Error Correction:	D(LGDP)	D(LTR)	D(LTAR)
CointEq1	0.000883	0.001663	0.001251
	(0.00040)	(0.00057)	(0.00051)
	[2.21253]	[2.93493]	[2.43615]
D(LGDP(-1))	-0.457634	0.008252	0.008216
	(0.07657)	(0.10870)	(0.09855)
	[-5.97684]	[0.07591]	[0.08337]
D(LGDP(-2))	-0.153634	0.036652	0.032734
	(0.07649)	(0.10859)	(0.09845)
	[-2.00850]	[0.33752]	[0.33250]
D(LTR(-1))	0.072933	-0.049034	0.143737
	(0.06115)	(0.08681)	(0.07870)
	[1.19272]	[-0.56486]	[1.82636]
D(LTR(-2))	0.064557	-0.174025	0.032859
	(0.06412)	(0.09102)	(0.08252)
	[1.00687]	[-1.91188]	[0.39818]
D(LTAR(-1))	-0.033746	0.018146	-0.356196
	(0.06783)	(0.09629)	(0.08730)
	[-0.49751]	[0.18844]	[-4.08011]

D(LTAR(-2))	-0.029490	0.071160	-0.158381
	(0.07188)	(0.10205)	(0.09252)
	[-0.41024]	[0.69730]	[-1.71187]
C	0.094713	0.044152	0.022487
	(0.01980)	(0.02810)	(0.02548)
	[4.78468]	[1.57113]	[0.88261]
R-squared	0.188477	0.076544	0.119786
Adj. R-squared	0.154461	0.037836	0.082891
Sum sq. Resids	9.628052	19.40433	15.94913
S.E. equation	0.240110	0.340872	0.309037
F-statistic	5.540840	1.977480	3.246648
Log likelihood	5.444952	-55.87639	-38.71835
Akaike AIC	0.029201	0.730016	0.533924
Schwarz SC	0.173876	0.874692	0.678600
Mean dependent	0.060909	0.040870	0.022427
S.D. dependent	0.261122	0.347509	0.322701
Determinant resid covariance (dof adj.)		0.000479	
Determinant resid covariance		0.000416	
Log likelihood		-63.80805	
Akaike information criterion		1.037806	
Schwarz criterion		1.526088	
Number of coefficients		27	

Source: Authors Computation

8. Analysis of VECM short-run and error correction term (ECT) estimates

As depicted in the Table 5 under the GDP equation, the error correction variable did not have the expected negative coefficient but was statistically significant as expected. Thus, the magnitude of the coefficient of 0.0008 implies that approximately 0.08 per cent of the disequilibrium in the system would not be corrected each year; indicating an extremely low speed of move away from the disequilibrium in the short run to equilibrium in the long run. The result showed that the estimated output model has a very poor fit and extremely low explanatory power, given its R-squared value of 0.1884. In particular, the R-squared showed that about 18.84 per cent of the total variation in the dependent variable was attributed to variations in the independent variables.

Analysis of VECM estimates showed that the previous lagged period of tourism receipt (TR) of selected African countries impacted economic growth (GDP) of selected African countries positively and was found to be non-significant at five percent significance level in the short run, ceteris paribus; while the previous two lagged periods of tourism receipt (TR) of selected African countries also impacted economic growth (GDP) of selected African countries positively and was found to be non-significant at five percent significance level in the short run, ceteris paribus. Lastly, the analysis of VECM estimates showed that the previous lagged period of tourist arrivals (TAR) of the selected African countries impacted economic growth (GDP) of selected African countries negatively and

was found to be non-significant at five percent significance level in the short run, ceteris paribus; while the previous two lagged periods of tourism arrival (TAR) of the selected African countries also impacted economic growth (GDP) of selected African countries negatively and was found to be non-significant at five percent significance level in the short run, ceteris paribus.

Table 6: Vector error correction (VECM) result

Vector Error Correction Estimates			
Standard errors in ( )& t-statistics in [ ]			
Cointegrating Eq:	CointEq1		
LGDP(-1)	1.000000		
TRFDI(-1)	0.284578		
	(0.07636)		
	[3.72689]		
TARFDI(-1)	-0.298631		
	(0.06054)		
	[-4.93248]		
C	-2.681015		
Error Correction:	D(LGDP)	D(TRFDI)	D(TARFDI)
CointEq1	0.005531	1.145266	2.072371
	(0.00865)	(0.56989)	(0.72227)
	[0.63950]	[2.00962]	[2.86926]
D(LGDP(-1))	-0.045093	-16.18177	-13.28863
	(0.07697)	(5.07197)	(6.42808)
	[-0.58586]	[-3.19043]	[-2.06728]
D(LGDP(-2))	-0.056848	-11.19828	-11.79008
	(0.06518)	(4.29538)	(5.44385)
	[-0.87212]	[-2.60705]	[-2.16576]
D(TRFDI(-1))	0.017184	-0.620985	-0.459163
	(0.00463)	(0.30526)	(0.38687)
	[3.70947]	[-2.03431]	[-1.18686]
D(TRFDI(-2))	-0.029295	0.163174	-0.183193
	(0.00534)	(0.35166)	(0.44568)
	[-5.48954]	[0.46401]	[-0.41104]
D(TARFDI(-1))	-0.010287	-0.109036	-0.277790
	(0.00386)	(0.25417)	(0.32213)

	[-2.66691]	[-0.42898]	[-0.86235]
D(TARFDI(-2))	0.018367	-0.312602	-0.116342
	(0.00392)	(0.25859)	(0.32773)
	[4.68047]	[-1.20888]	[-0.35500]
C	0.062943	2.571895	2.435005
	(0.01665)	(1.09748)	(1.39092)
	[3.77930]	[2.34345]	[1.75065]
R-squared	0.445870	0.452087	0.408039
Adj. R-squared	0.422644	0.429120	0.383226
Sum sq. Resids	6.574289	28547.98	45854.70
S.E. equation	0.198411	13.07463	16.57043
F-statistic	19.19623	19.68467	16.44471
Log likelihood	38.82747	-694.0878	-735.5534
Akaike AIC	-0.352314	8.023861	8.497753
Schwarz SC	-0.207638	8.168537	8.642429
Mean dependent	0.060909	0.175289	0.138505
S.D. dependent	0.261122	17.30442	21.09942
Determinant resid covariance (dof adj.)		124.6657	
Determinant resid covariance		108.3384	
Log likelihood		-1154.903	
Akaike information criterion		13.50746	
Schwarz criterion		13.99574	
Number of coefficients		27	

Source: Authors Computation

9. Analysis of VECM short-run and error correction term (ECT) estimates

As depicted in the Table 6 under the GDP equation, the error correction variable did not have the expected negative coefficient but was statistically significant as expected. Thus, the magnitude of the coefficient of 0.0055 implies that approximately 0.55 per cent of the disequilibrium in the system would not be corrected each year; indicating an extremely low speed of move away from the disequilibrium in the short run to equilibrium in the long run. The result showed that the estimated output model has a fairly good fit and fairly good explanatory power, given its R-squared value of 0.4458. In particular, the R-squared showed that about 44.58 per cent of the total variation in the dependent variable was attributed to variations in the independent variables as moderated.

Analysis of VECM estimates showed that the previous lagged period of tourism receipt (TR) of selected African countries as moderated by foreign direct investment (FDI) impacted economic growth (GDP) of selected African countries positively and was found to be significant at five percent significance level in the short run, ceteris paribus; while the previous two lagged periods of tourism receipts (TR) of selected African countries as moderated by foreign direct investment (FDI) impacted economic growth (GDP) of selected African countries negatively and was found to be significant at five percent significance level in the short run, ceteris paribus. Lastly, the analysis of VECM estimates showed that the previous lagged period of tourism arrival (TAR) of selected African countries as moderated by foreign direct investment (FDI) impacted economic growth (GDP) of selected African countries negatively and was found to be significant at five percent significance level in the short run, ceteris

paribus; while the previous two lagged periods of tourism arrival (TAR) of selected African countries as moderated by foreign direct investment (FDI) impacted economic growth (GDP) of selected African countries positively and was found to be significant at five percent significance level in the short run, ceteris paribus.

10. **Vector error correction model (VECM) test: long run estimates (with the moderating effect of exchange rate on the relationship between tourism and economic growth)**

The VECM long run estimates in Table 7 showed that, gross domestic product (GDP) which measures the level of economic growth of the selected African countries was jointly enhanced as a result of tourism receipt (TR) and tourism arrival (TAR) of the selected African countries as moderated by exchange rate (EXR). The constant coefficient of the VECM showed that, the level of economic growth (GDP) of the selected African countries increased by 0.86 per cent as result of the interactions between tourism receipt (TR) of the selected African countries as moderated by exchange rate (EXR) and tourist arrivals (TAR) of the selected African countries as moderated by exchange rate (EXR) in

GDP = 0.86 - 1.69*TREXR + 2.22*TAREXR 4.2

the long run. Further analysis of the long run estimates in the equation in Equation 4.2 revealed that, the total value of tourism receipt (TR) of selected African countries as moderated by exchange rate (EXR) will decrease the level of economic growth (GDP) of selected African countries in the long run by 1.69 per cent; and was found to be statistically significant at five percent significance level, all things being equal.

Table 7: Vector error correction model (VECM) result

Vector Error Correction Estimates			
Standard errors in ( )& t-statistics in [ ]			
Cointegrating Eq:	CointEq1		
LGDP(-1)	1.000000		
LTREXR(-1)	1.691236		
	(0.35162)		
	[4.80989]		
LTAREXR(-1)	-2.220208		
	(0.40543)		
	[-5.47613]		
C	-0.865960		
Error Correction:	D(LGDP)	D(LTREXR)	D(LTAREXR)
CointEq1	-0.038795	-0.064436	-0.031699
	(0.01291)	(0.01908)	(0.01869)
	[-3.00557]	[-3.37800]	[-1.69613]
D(LGDP(-1))	-0.436866	-0.047507	-0.068383
	(0.07460)	(0.11025)	(0.10802)
	[-5.85605]	[-0.43091]	[-0.63307]
D(LGDP(-2))	-0.146702	-0.013557	-0.030822
	(0.07464)	(0.11031)	(0.10808)

	[-1.96534]	[-0.12289]	[-0.28518]
D(LTREXR(-1))	0.064793	-0.005579	0.156738
	(0.06121)	(0.09045)	(0.08862)
	[1.05859]	[-0.06168]	[1.76857]
D(LTREXR(-2))	0.068210	-0.168768	0.041804
	(0.06324)	(0.09346)	(0.09157)
	[1.07859]	[-1.80580]	[0.45654]
D(LTAREXR(-1))	-0.125638	-0.020595	-0.331277
	(0.06876)	(0.10162)	(0.09957)
	[-1.82708]	[-0.20266]	[-3.32722]
D(LTAREXR(-2))	-0.085398	-0.002285	-0.164692
	(0.07024)	(0.10381)	(0.10171)
	[-1.21576]	[-0.02201]	[-1.61929]
C	0.099444	0.106353	0.090228
	(0.02058)	(0.03041)	(0.02979)
	[4.83280]	[3.49741]	[3.02843]
R-squared	0.206929	0.090171	0.065885
Adj. R-squared	0.173687	0.052034	0.026730
Sum sq. Resids	9.409131	20.54954	19.72622
S.E. equation	0.237365	0.350786	0.343687
F-statistic	6.224839	2.364425	1.682691
Log likelihood	7.457481	-60.89386	-57.31599
Akaike AIC	0.006200	0.787358	0.746469
Schwarz SC	0.150876	0.932034	0.891144
Mean dependent	0.060909	0.087150	0.068707
S.D. dependent	0.261122	0.360285	0.348375
Determinant resid covariance (dof adj.)		0.000557	
Determinant resid covariance		0.000484	
Log likelihood		-76.98050	
Akaike information criterion		1.188349	
Schwarz criterion		1.676630	
Number of coefficients		27	

Source: Researcher's Computation

Lastly, the total value of tourist arrivals (TAR) of selected African countries as moderated by exchange rate (EXR) will increase the level of economic growth (GDP) of selected African countries in the long run by 2.22 per cent; and was found to be statistically significant at five percent significance level, all things being equal.

11. Analysis of VECM short-run and error correction term (ECT) estimates

As depicted in the Table 7. under the GDP equation, the error correction variable has the expected negative coefficient and was also statistically significant. Thus, the magnitude of the coefficient of 0.0387 implies that

approximately 3.87 per cent of the disequilibrium in the system would be corrected each year, indicating an extremely low speed of adjustment from the disequilibrium in the short run to equilibrium in the long run. The result showed that the estimated output model has a fairly poor fit and fairly low explanatory power, given its R-squared value of 0.2069. In particular, the R-squared showed that about 20.69 per cent of the total variation in the dependent variable was attributed to variations in the independent variables as moderated.

Analysis of VECM estimates showed that the previous lagged period of tourist receipts (TR) of selected African countries as moderated by exchange rate (EXR) impacted the economic growth (GDP) of economies negatively and was found to be non-significant at five percent significance level in the short run, ceteris paribus; while the previous two lagged periods of tourist receipts (TR) of the countries as moderated by exchange rate (EXR) impacted economic growth (GDP) of the countries negatively and was found to be non-significant at five percent significance level in the short run, ceteris paribus. Lastly, the analysis of VECM estimates showed that the previous lagged period of tourism arrival (TAR) of selected African countries as moderated by exchange rate (EXR) impacted economic growth (GDP) of selected African countries negatively and was found to be non-significant at five percent significance level in the short run, ceteris paribus; while the previous two lagged periods of tourism arrival (TAR) of the selected African countries as moderated by exchange rate (EXR) impacted economic growth (GDP) of selected African countries negatively and was found to be significant at five percent significance level in the short run, ceteris paribus.

12. Summary and Conclusion

The results of the study as obtained from VECM analysis revealed that in the short-run, tourism receipts of the selected African countries were found to have a non-significant but positive effect on the economic growth of the selected African countries and that in the short-run, tourism arrival were found to have a non-significant negative effect on the economic growth of the selected African countries. The relationship between tourism and economic growth as moderated by foreign direct investment and exchange rate both in the short-run and long-run were found to have a significant positive effect on the economic growth of the selected countries.

Therefore, the study validates the necessity of government to work closely with players of the tourism industry to attract foreign tourists particularly with regards to foreign direct investment. African leaders must work together to coordinate policy initiatives aimed at maximizing the potential of tourism on the continent in order to combat unemployment and poverty.

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