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Towards the quest to reduce income inequality in Africa: Is there a synergy between tourism development and governance?

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Towards The Quest To Reduce Income Inequality In Africa: Is There A Synergy Between Tourism Development And Governance?

Forthcoming: Current Issues in Tourism

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Research Department

Towards The Quest To Reduce Income Inequality In Africa: Is There A Synergy Between Tourism Development And Governance?

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Abstract

Despite the growing attention on the tourism development-income inequality nexus, a conspicuous gap in the literature is that rigorous empirical works examining how good governance moderates the relationship is hard to find. Anchoring on the trickle-down theory and the tourism-led growth hypothesis, this study fills this void in the literature based on data for 48 African countries for the period 1996 – 2020. We provide strong evidence robust to several specifications from the GMM estimator to show that, though unconditionally, both tourism development and governance reduce income inequality in Africa, the effect of the former is amplified in the presence of quality economic, political and institutional governance. Particularly, we find that control of corruption and political stability are keys for propelling Africa's tourism sector to contribute to shared income distribution across the continent. Policy recommendations are provided in line with SDG 10 and Aspirations 1 and 3 of Africa's Agenda 2063.

Key Words: Africa; Corruption; Governance; Income Inequality; Tourism Development; Tourism Receipts.

JEL Codes: *C33; D31; D63; H11; L5; O55; Z32*

1.0 Introduction

Despite concerted efforts on the part of African leaders and their development partners towards bridging the continent's marked income inequality gap since the time of the Millennium to the current Sustainable Development Goals era, the socioeconomic problem still persists in Africa (World Bank 2020, Akadiri & Akadiri, 2018; Gyimah-Brempong, 2002). Indeed, though Africa's growth momentum in the past two decades, averaging 5 per cent per year has translated into reducing extreme poverty levels across the continent (IMF 2020), income inequality[1] remains high (Asamoah 2021; Adams & Akobeng 2021; Odusola, 2017; Fanta & Upadhyay, 2009). As Ofori and Asongu (2021a) and the World Bank (2020) reckon, this signifies a growth trajectory that is porous or non-inclusive and could have dire consequences for the fight against poverty, crime, social cohesion and the quality of life (see Pickett & Wilkinson, 2015; Stiglitz, 2012). It comes as no surprise considering new renewed calls and efforts by African leaders to chat a growth course that is egalitarian, evidence of which is the institution African Agenda 2063 dubbed, *The Africa We Want*. The Agenda 2063 is a continental framework that, among others, seeks to reduce poverty, inequalities in income and opportunities while enhancing the quality of institutions to transform Africa's resources to the benefit of all.

Such are the potential 'blessings' of a burgeoning tourism sector and this has been captured succinctly in Goal 4 of Aspiration1 of the framework, which aims at "*transforming Africa's economies through beneficiation from Africa's natural resources, manufacturing, industrialization and value addition, as well as raising productivity and competitiveness*" (African Union, 2015). The egalitarian prospects of a well-development tourism sector, driven chiefly by the rise in social globalisation, cannot be overemphasized (Bilchitz & Glaser, 2014; Debow, 2014). Growth-wise, a thriving tourism sector can promote economic growth and poverty alleviation (Enilov & Wang, 2021; Pan & Dossou, 2020). For instance, in 2019 alone, receipts from the tourism sector accruing to African countries amounted to US$169 billion, representing an impressive 7 per cent of the continent's overall gross domestic product (World Travel and Tourism Council, 2020). On top of this is the information gleaned from the International Financial Corporation (2021) which indicates that Africa's tourism sector employs about 24 million people directly or indirectly in its value chain. Despite taking a dip in 2020 following the emergence of the coronavirus pandemic (COVID-19), which culminated in

[1] The 2019 World Inequality Lab Report cites Africa as one of the most unequal continents in the world, with the top 10 per cent holding 54 percent of all incomes and the bottom 50 per cent holding less than 10 per cent. Across the regional divide, income gaps are high in Southern and Central Africa and lowest in Northern Africa.

the loss of about US$55 billion in revenues, 2 million job layoffs, and a shrunk in the GDP of countries[2] highly dependent on tourism by 12 per cent, activities are set to rebound in 2022 following global efforts to contain the virus. Grounds are fertile, therefore, that, the development of Africa's tourism sector can create shared socioeconomic opportunities that can reverberate throughout the continent considering the implementation of the African Continental Free trade Area (AfCFTA) and the finalisation of its attendant investment protocol.

However, in a setting where growth has not trickled down equitably, providing supportive systems, structures and frameworks as Acemoglu and Robinson (2012) and Kaufman *et al*. (2010) argue could prove crucial for propelling interdependent sectors such as the tourism sector to contribute meaningfully towards the creation of shared opportunities, income growth and distribution. Our main argument is that, for the desired inclusivity effects of Africa's tourism sector to be realised, good governance will have a role to play (see, UNDP, 2017; OECD, 2016; World Bank, 2013). For instance, sound political governance is required to set the tone for social cohesion, socioeconomic transformation, and the sustenance of tourist visits (Asongu & Nwachukwu, 2016; Khan, 2012). Quality economic governance is also imperative not only for attracting, integrating and sustaining domestic and foreign investors in the tourism sector but also for reducing investment risk (Ofori & Asongu, 2021b). While strong legal frameworks are also needed to safeguard and guarantee investment returns, effective mechanisms for the ensuring accountability and the control of corruption matters for social inclusion, protection of public purse, the levelling of the playing field for all, and sharing the gains from tourism (Ivanyna & Salerno, 2021; Doumbia, 2020; Zhuang *et al.*, 2010).

Despite these linkages regarding tourism development and governance, a conspicuous gap in the literature is that rigorous empirical work(s) exploring whether good governance forms relevant synergies with the tourism sector towards the equalisation of incomes in Africa is/are hard to find. Therefore, unlike prior contributions such as Ghosh and Mitra (2021), Nguyen *et al*. (2020), Mahadevan *et al*. (2019) and Alam and Paramati (2016), this study goes beyond the examination of the direct relationships between tourism development and income inequality by examining the moderating role of governance quality. We do this by testing two hypotheses. First, we test whether unconditionally, both tourism development and governance reduce income inequality in Africa, and second, whether in the presence of good governance, tourism development has a higher income inequality-reducing effect. Our empirical

[2] Examples are Egypt, Kenya, Morocco, Namibia, Rwanda, South Africa, Tanzania, Zambia, and Zimbabwe.

contribution suggests that, with appropriate governance mechanisms, the development of Africa's tourism sector could prove momentous towards the achievement of the SDG 10 in the broader perspectives (United Nations, 2015) and Aspiration 1 of the Africa Agenda 2063.

The remainder of the study is structured in what follows. Section 2 discusses the literature review on the relation between governance, tourism development and income inequality. Section 3 carefully outlines the data and econometric techniques adopted for the study. Section 4 presents the results while Section 5 follows with the conclusion and the attendant policy recommendations.

2. Literature review

2.1 Theoretical linkages between tourism development, governance and income inequality

Theoretically, two views explain the link between tourism and income inequality. First, the income-inequality reducing effect of tourism is anchored in the conventional dictum that it can spur economic growth as propagated in the tourism-led-growth (TLG) hypothesis (Balaguer & Cantavella-Jordá, 2002). One of the channels which has been pointed out by TLG hypothesis is job creation. The TLG is premised on the argument that, a burgeoning tourism sector can induce shared income distribution through intra-sectoral linkages, foreign direct investment, economic growth and poverty alleviation. The second view is the trickle-down effect, which as Scheyvens and Russell (2012) argue, points to the sharing of tourism and tourism-related gains in the form of economic opportunities generated through domestics and foreign investment in the tourism sector, infrastructural development, and corporate social responsibility, which can ultimately reduce wealth inequality and income inequality.

However, governance remains the pivot on which everything else in the economy evolves (OECD 2016, 2015; World Bank, 2013). Theoretically, governance quality plays a crucial role in economic development (see Acemoglu *et al.*, 2010; North, 1990). Particularly, Acemoglu *et al.* (2010, 2005) point out that good governance can contribute to economic growth and the equalisation of incomes through economic freedom, efficient resource allocation and the creation of a peaceful setting for socioeconomic activities. For instance, an improved governance effectiveness in the area of infrastructure— roads, airports and seaport, can be an incentive for foreign direct investment inflows to sectors such as tourism. Additionally, political stability and rule of law are also imperative for social cohesion and the incentivisation of tourists and foreign investors alike. These developments, as Fan *et al.* (2009) reckon, could spark hospitality sector development, and the creation of socioeconomic opportunities that can reverberate in countries.

2.2 Empirical survey on tourism development, governance and income inequality

At the empirical front, the prior findings on the unconditional effects of tourism development and governance on income inequality is growing though without controversy and inconclusiveness. For instance, prior contribution such as Enilov and Wang (2021) find evidence to support the TLG hypothesis that tourism development contributes to sustainable economic development in the developing world but not developed countries.

In a comprehensive regional analysis comprising 113 countries across the world, Lv (2019) provide evidence to show that tourism development enhances equitable distribution of income in long-run. Though a distinction is not made regarding how the results play out in the short-run for the developed and developing countries, the evidence, suggest that tourism development will require a broad-based hospitality strategy in order to contribute favourable to the quest to reduce income inequality. Similar evidence has been reported by Fang *et al*. (2020) and Nguyen *et al*. (2020) in the case of the developing world. In particular, the latter find robust evidence to argue that tourism development channels such as domestic tourism spending, internal travel and consumption, business tourism spending, leisure tourism spending, international tourism receipts, and international tourist arrivals can be effective channels for generating public resources and economic opportunities to contribute to the reduction in income inequality.

Nonetheless, a number of empirical works also find that tourism development could heighten income inequality in the developing world. For instance, Alam and Paramati (2016) provide some interesting results on 49 developing countries to show that while unconditionally, tourism development increases income disparity significantly even in the long-run, its square confirms the case of the Kuznets curve. The results suggest the developing countries could reap greater income equality dividends in the long-run if efforts are redoubled. This evidence is re-echoed by Chi (2021) who find that tourism receipts reduce the income inequality gap in developing countries, it does not matter in the case of the developed world. Their recommendation on the need for effective systems and stricture to propel the tourism sector foster shared income distribution is seen in Kunawotor *et al*. (2020) who employed a panel of 44 African countries to examine whether governance quality equalises incomes. The authors provide robust empirical evidence to shows that governance quality contribute to equitable income distribution. Similarly, Adams and Akobeng (2021) and Adeleye *et al.* (2019) also provide empirical evidence in the case of Africa to show that quality governance provides a conducive setting to propel sectors such the telecommunication, finance, and hospitality to reduce income inequality. Finally, studies such as Xu *et al.* (2021) and Canh *et al.*

(2020) argue that the weak institutional fabric of the developing world worsens income inequality. Overall, a conspicuous lacuna in the literature survey reveals that the tourism development-governance pathway towards the equalisation of incomes, especially in the developing world, has not been explored.

2.3 In-Country tourism development-income inequality relationship in Africa

In line with the main objective of this study, we peruse the data to ascertain if there is a clear pattern in regarding the relationship the various governance dynamics and income inequality in Africa. We do this by first exploring the performance of our sampled countries in various facets of governance. As apparent in Figure A1, most African countries, notably, Burundi, Chad, Congo, Congo DR., and Nigeria, fall below the average threshold of zero for political stability, rule of law, regulatory quality, control of corruption, voice and accountability, and governance effectiveness. In a setting where social protection is low due to fiscal constraints, and macroeconomic instability is recurrent, the direct relationship between the various governance indicators and income inequality (Palma ratio) shown in Figure 1 is not surprising. Also, in a continent where overall the instructional fabric is markedly weak but developing as Ofori and Asongu (2021a) point out, economic freedom and opportunities tend to be restrictive and accessible to a few connected elites compared at the detriments of the masses (Kaufmann *et al.,* 2010).

Turning to the in-country governance-income relations in Africa, we provide Figure 1, to show that Africa's weak institutional fabric is directly related to income inequality. Turning around this worrying relationship in Figure 1 for the better will require concerted efforts aimed at developing African's institutions and making the region's abundant natural resources count. Considering the intensification of efforts in improving governance[3] in Africa recent years in line with the African Agenda 2063 (African Union, 2015), the Sustainable Development Goals, and particularly, the implementation of the African Continental Free Trade Area (AfCFTA), policies aimed at developing the continent's numerous tourism potentials could be a gamechanger in the addressing income inequality. And, indeed, as we show by way of instrumental variable regression, good governance matters, both conditionally and unconditionally, for creating the greater a conducive environment for tourism to contribute towards reducing income equality. Our results can prove momentous in aiding policymakers interested in Africa's development agenda realise the first and fourth goals of a continent of high standard of living, quality of life and well-being for all, and transformed economies and jobs through the beneficiation from Africa's natural resources, enshrined in Aspiration 1[4]

[3] Aspiration 3 of the Africa's Agenda 2063 is dedicated to achieving an Africa of good governance, democracy, respect for human rights, justice and the rule of law (Africa Union 2015)

[4] A prosperous Africa based on inclusive growth and sustainable development

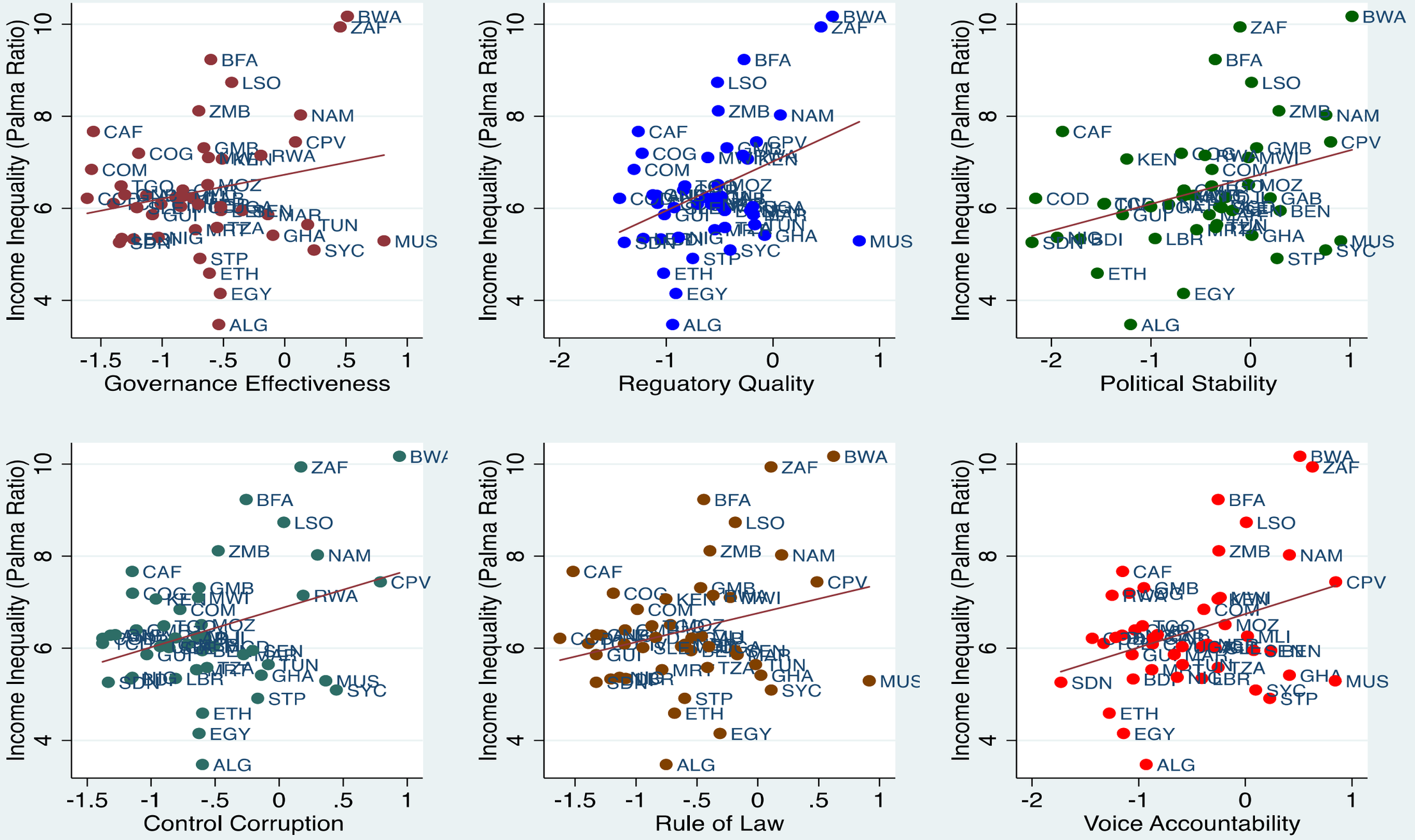

Figure 1: Income inequality–governance nexus in Africa, 1996 – 2020.

3.0 Data and methodology

3.1 Data

The study uses macrodata for the period 1996 – 2020 on 48 African countries[5] for the analysis. Our main income inequality variable (i.e., outcome variable) is the Palma ratio. We draw the Palma ratio from the Global Consumption and Income Project (Lahoti *et al.*, 2016). To evaluate the robustness of our estimates on the Palma ratio we use the net Gini and the Theil indices as alternative measures of income inequality. While the former is sourced from the Standardized World Income Inequality Database (Solt, 2020), the latter is sourced from the Global Consumption and Income Project (Lahoti *et al.*, 2016). Our variable of interest is tourism development, proxied by the total receipt from tourism as a percentage of GDP and is sourced from the World Development Indicators (World Bank, 2021).

To capture the effects of these developments, we capture governance by six indicators— *rule of law, control of corruption, regulatory quality, governance effectiveness, political stability, and voice and accountability* (Kaufmann *et al*., 2010). Additionally, we control for globalisation considering the implementation of AfCFTA, which presents policymakers with opportunities for spurring industrial sector revolution, global value chain participation, forward and backward linkages, employment generation and equality in income growth and distribution (Gygli *et al*., 2019; Obeng *et al.*, 2021). Human capital as also taken into consideration since it arms the masses to advantage of opportunity (Tchamyou *et al.*, 2019). Further, economic growth enters the conditioning information set since it captures increasing capacity of policymakers to create opportunities (Ofori, 2021). Finally, we pay attention to vulnerable employment considering the highly informal nature of the countries under consideration (Ofori & Asongu, 2021a). The description of the variables is provided in Table A.1 in the Appendices section.

3.2 Estimation Strategy

The empirical rigor of the study begins with a test of the bivariate relationships between income inequality, tourism development, and governance. Next, we specify a baseline model where we explore the effects of our controls on income inequality. We proceed by introducing tourism development and our governance dynamics stepwisely in the model. Finally, per our

[5] Algeria; Angola; Benin; Botswana; Burkina Faso; Burundi; Cabo Verde; Cameroon; Central African Republic; Chad; Comoros; Congo, DR.; Congo Rep.; Cote d'Ivoire; Djibouti; Egypt; Ethiopia; Gabon; The Gambia; Ghana; Guinea; Guinea-Bissau; Kenya; Lesotho; Liberia; Madagascar; Malawi; Mali; Mauritania; Mauritius; Morocco; Mozambique; Namibia; Niger; Nigeria; Rwanda; Sao Tome and Principe; Senegal; Seychelles; Sierra Leone; South Africa; Sudan; Tanzania; Togo; Tunisia; Uganda; Zambia; Zimbabwe

hypothesized higher conditional effect of tourism development on income inequality through governance, we introduce 6 interaction terms for governance and tourism receipts. We specify our bivariate models as follows:

$$palma_{it} = \lambda_0 + \lambda_1(tour_{it}) + \varepsilon_{it} \quad (1)$$

$$palma_{it} = \varphi_0 + \varphi_1(gov_{it}) + \varepsilon_{it} \quad (2)$$

Next, we specify our baseline model, which includes the square of economic growth to capture the Kuznets effect as:

$$palma_{it} = \lambda_0 + \delta_1 palma_{it-1} + \beta_1 tour_{it} + \beta_2 gov_{it} + \beta_3 ict_{it} + \beta_4 glob_{it} + \beta_5 gpc_{it} + \beta_6 gpc_{it}^2 + \beta_7 vul_{it} + \beta_8 hci_{it} + \epsilon_i + \mu_t + \varepsilon_{it} \quad (3)$$

Also, to capture the joint effect of governance and tourism development, Equation (3) is modified to obtained Equation (4), specified as:

$$palma_{it} = \lambda_0 + \delta_1 palma_{it-1} + \beta_1 tour_{it} + \beta_2 gov_{it} + \beta_3 ict_{it} + \beta_4 glob_{it} + \beta_5 gpc_{it} + \beta_6 gpc_{it}^2 + \beta_7 vul_{it} + \beta_8 hci_{it} + \beta_9 (tour_{it} \times gov_{it}) + \epsilon_i + \mu_t + \varepsilon_{it} \quad (4)$$

Where $\boldsymbol{palma}$ is the Palma ratio; $\boldsymbol{glob}$ is the KOF economic globalisation index; $\boldsymbol{hci}$ is human development index; $\boldsymbol{vul}$ is vulnerable employment; $\boldsymbol{gpc}$ is GDP per capita; $\boldsymbol{gpc^2}$ is the square of GDP per capita; $\boldsymbol{ict}$ is ICT diffusion index; $\boldsymbol{tour}$ is tourism development while $\boldsymbol{gov}$ is an indicator for governance comprising rule of law, control of corruption, regulatory quality, governance effectiveness, political stability, and voice and accountability. Also, $\boldsymbol{tour \times gov}$ is the interaction term for tourism development and governance; $\boldsymbol{i}$ is country; $\boldsymbol{t}$ is time; $\boldsymbol{\epsilon_i}$ is the country-specific effects; and $\boldsymbol{\varepsilon_{it}}$ is the idiosyncratic error term.

For *a priori* signs, we expect human development, ICT diffusion, the square of economic growth, tourism development, and our governance dynamics to reduce income inequality. Further, we expect globalisation and the lag of income inequality to deepen income inequality. A conspicuous empirical concern regarding model is that there are two concerns of endogeneity. First is the simultaneity between economic growth and income growth, and second is the fact that $palma_{it-1}$ depends on ε_{it-1}, which is a function of the country-specific effect ϵ_i. To the extent that failure to addressed these two endogeneity concerns can bias our estimates, we address it by applying the system GMM technique[6] put

[6] In estimating our system GMM models, the instruments are the lags of the regressors.

forward by Arellano and Bover (1995). Additional caveats for applying the GMM is that: (i) the sample countries (i.e., N) used in the study is greater than the number of time period in each cross section (i.e., T) (see Ofori *et al.*, 2021a, 2021b; Asongu & Odhiambo, 2019), and (ii) the panel dataset also reveals cross-country variation, which is accounted for in GMM estimation (Ofori & Asongu, 2021b. Ofori *et al.*, 2021c). We proceed to calculate the net effects from our interaction terms on governance and tourism development on income inequality from Equations (4) as:

$$\frac{\partial(palma_{it})}{\partial(tour_{it})} = \beta_1 + \beta_9\overline{(gov)} \quad (5),$$

where $\overline{gov}$ is the mean of our various governance indicators. We point out that the in evaluating the reliability of the estimates on income inequality, several post estimation tests are conducted to test whether there is evidence of second-order serial correlation in the residuals or not. Second, we test the appropriateness of our instruments based on the exogeneity restriction. Third, we test whether our joint effects are significant, and finally, we test the overall significance of the model.

4.0 Results and discussion

4.1 Descriptive statistics and correlation analysis

Table 1 shows the descriptive statistics of the variables considered for the empirical analysis. The pairwise correlations between these variables are presented in Table A.2 in the Appendix section.

Table 1. Summary statistics, 1996 – 2020

Variable	Obs	Mean	Std. Dev.	Minimum	Maximum
Dependent variables					
Palma ratio	917	6.376	1.769	2.484	21.79
Theil index	917	0.649	0.086	0.350	1.165
Gini (net)	724	0.482	0 .092	0.031	0.719
Variables of interest					
Tourism receipts	934	9.12e+08	2.09e+09	100000	1.43e+10
Government effectiveness	817	-0.680	0.592	-1.848	1.057
Regulatory quality	817	-0.625	0.552	-2.236	1.127
Political stability	817	-0.516	0.862	-2.699	1.200
Corruption control	817	-0.584	0.589	-1.563	1.217
Rule of law	817	-0.626	0.602	-1.852	1.077
Voice and accountability	817	-0.522	0.670	-1.841	0.998
Control variables					
Economic globalisation	1104	44.099	11.070	21.252	85.299
ICT diffusion	864	6.997	10.946	0.000	71.813
Human capital	985	380.859	2508.154	1.053	23085.486
GDP per capita	1191	1784.312	2363.9	102.598	16390.825
GDP per capita (square)	1191	8767102	26139464	10526.344	2.687e+08
Vulnerable employment	1128	66.606	23.748	8.830	94.980

Note: Std. Dev. is Standard Deviation
Source: Authors' construct, 2021

The data shows that the mean value of governance indicators, namely governance effectiveness, control of corruption, rule of law, voice accountability, political stability and regulatory quality is -0.68, -0.584, -0.626, -0.522, -0.516, -0.625, respectively, meaning that institutions are weak in Africa. The mean values of Atkinson index, Palma ratio and Theil index are also 0.699, 6.376 and 0.649, respectively. This also signifies that across all measures of income distribution, inequality still remains high in Africa. The mean value of tourism receipt is US$ 91.2 billion, which also indicates that Africa generates significant resources from tourism.

4.2 Preliminary results on effect of tourism and governance on income inequality

Table 2 discloses the bivariate nexus between income inequality and the variables of interest—tourism development and the various governance dynamics.

Table 2. The bivariate relationships between income inequality and the variables of interest—tourism and the 6 governance indicators

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Tourism development	-0.1366***						
	(0.0302)						
Governance effectiveness		0.5752***					
		(0.0987)					
Regulatory quality			0.9527***				
			(0.1058)				
Political stability				0.4446***			
				(0.0648)			
Corruption control					0.7862***		
					(0.0988)		
Rule of law						0.5234***	
						(0.0976)	
Voice and accountability							0.5956***
							(0.0873)
Constant	8.8948***	6.5875***	6.7727***	6.4296***	6.6584***	6.5257***	6.5147***
	(0.5674)	(0.0870)	(0.0839)	(0.0656)	(0.0799)	(0.0829)	(0.0727)
Observations	757	635	635	635	635	635	635
R-squared	0.0263	0.0509	0.1136	0.0691	0.0910	0.0435	0.0686
Adjusted R-squared	0.0251	0.0494	0.112	0.0677	0.0896	0.0420	0.0671

Standard errors in parentheses
**** p<0.01, ** p<0.05, * p<0.1*

First, as shown in Table 2, tourism development reports a negative and statistically significant effect on income inequality. Second, the results show that all governance indicators, namely, political stability, voice accountability, rule of law, control of corruption, regulatory quality and governance effectiveness, have an unexpectedly positive and statistically significant impact on income inequality.

4.3 System GMM results on the effect of tourism development and governance on income inequality in Africa

This section presents and discusses the main results. To begin with, we pay attention to the results in Column 1 (i.e., baseline estimates), which are based on the equation (3). The results reveal that the lag of Palma ratio has a positive and statistically significant effect on current levels of income inequality, meaning that income inequality still persists in Africa. This corroborates the findings of Xu *et al.* (2021) in a study covering 38 sub-Saharan African countries. The results also show that economic globalisation has a positive and statistically significant effect on income inequality, meaning that enhanced economic integration like the AfCFTA, induces income inequality. The positive effect of globalisation on income inequality in Africa could be attributed to several reasons. First, the inflow of foreign direct investment (FDI) to Africa, which is a key component of trade openness and driver of socioeconomic

opportunities is low (US$ 46 billion) compared to Latin America (US$ 137 billion) and Asia ($500 billion). Second, with export diversification in Africa low, and FDI flowing into largely into the hydrocarbon, aviation, transportation, telecommunication, and extraction subsectors (Nguyen *et al*., 2021; Anyanwu, 2014), trade openness could contribute to the heightening of Africa's income inequality gap. This finding aligns with Cabral *et al.* (2016) who provided convincing evidence from the similar estimation technique that trade openness disequalises incomes in 15 countries.

Similarly, we find that human capital has a positive and statistically significant effect on income inequality. Indeed, in a region where informality is high, income disparity between educated and the unskilled widens as the results suggest. This result could be ascribed to high levels of graduate unemployment in Africa, which leaves graduate with no other options than to settle for low-paid or precarious jobs. This finding is consistent with Ajide and Alimi (2021) who used three school enrolment indicators, namely primary school enrolment, secondary enrolment and tertiary school enrolment as proxy of human capital and found that education contributes to increasing income inequality African. Further, we find that ICT diffusion has a negative and statistically significant effect on income inequality. Indeed, as Asongu and Ofori (2021b) argue, ICTs could be leveraged to present shared opportunities in marginalised societies. And as Ofori *et al* (2021b) point out, the growing ICT hubs and industrial parks could present real opportunities for putting the continent's youthful population to descent work. Indeed, ICT diffusion is one of the priority areas of the SDGs for fostering inclusiveness, and with ICT access, skills and usage growing steadily in Africa, our results provide optimism of greater income inequality-reducing effects in the long term.

Finally, albeit weak marginal effect, we find significant evidence to defy the Kuznets (1955) since economic development has a negative and statistically significant effect on income inequality. This means that economic development could contribute to lessening of income inequality at the early stage of development. This could be attributed to the fact that our study period coincides with concerted efforts by African leaders in bridging the marked income inequality gap in their economies in line with SDG 10. For instance, various African countries like Ghana, South Africa, Uganda, and Namibia have introduction social redistribution programmes such as cash transfers, free/subsidized education, and digital infrastructure, which are effective modules for reducing income inequality (see, Ofori & Asongu 2021b; Uzar & Eyuboglu, 2019)

Table 3. System GMM results on the effects of tourism development and governance on income inequality in Africa (Dependent variable: Palma ratio)

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Economic globalisation	0.0034***	0.0027*	0.0043***	0.0080***	0.0181***	0.0177***	0.0098***	0.0034***	0.0084*	0.0065	0.0159***	0.0077	0.0049**	0.0033
	(0.0008)	(0.0013)	(0.0009)	(0.0017)	(0.0031)	(0.0023)	(0.0025)	(0.0008)	(0.0049)	(0.0047)	(0.0049)	(0.0059)	(0.0024)	(0.0031)
ICT diffusion	-0.0004	0.0005	-0.0009	-0.0011	-0.0106***	-0.0043*	-0.0043***	-0.0005	-0.0023	-0.0043*	-0.0078*	-0.0060	-0.0016	-0.0037
	(0.0006)	(0.0009)	(0.0007)	(0.0010)	(0.0027)	(0.0023)	(0.0013)	(0.0006)	(0.0025)	(0.0024)	(0.0040)	(0.0046)	(0.0017)	(0.0028)
Human capital	0.0001***	0.0941**	0.0001**	0.0001	-0.0001	-0.0001	0.0001	0.0000***	0.2246	0.2084	0.1771	0.3887	0.0914	0.1257
	(0.0000)	(0.0451)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.2167)	(0.2224)	(0.2013)	(0.2598)	(0.0985)	(0.1388)
Economic development	-0.0001**	-0.0001**	-0.0001***	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001**	-0.0001	-0.0001	0.0001	0.0001	-0.0001	-0.0001
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0000)	(0.0000)
Economic development (square)	0.0001	0.0001	0.0001*	0.0001	0.0001	0.0001	0.0001	0.0001	-0.0001	0.0001	-0.0001	-0.0001	0.0000	-0.0001
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Vulnerable employment	-0.0005	-0.0002	-0.0017*	-0.0003	0.0009	-0.0009	-0.0008	-0.0005	-0.0032	-0.0002	-0.0013	0.0013	0.0008	0.0016
	(0.0007)	(0.0006)	(0.0009)	(0.0013)	(0.0018)	(0.0029)	(0.0020)	(0.0007)	(0.0045)	(0.0042)	(0.0038)	(0.0041)	(0.0019)	(0.0021)
Tourism receipt		-0.0298***							0.0330	0.0465	-0.1594**	-0.1331**	0.0171	0.0577
		(0.0091)							(0.0366)	(0.0437)	(0.0603)	(0.0640)	(0.0276)	(0.0375)
Government effectiveness			-0.0858***						-3.1624***					
			(0.0289)						(0.7894)					
Regulatory quality				-0.2352***						-2.7777***				
				(0.0540)						(0.8131)				
Political stability					-0.3871***						-1.3370**			
					(0.0485)						(0.6461)			
Control of corruption						-0.4717***						-5.8626***		
						(0.1315)						(0.9293)		
Rule of law							-0.1456						-1.0745	
							(0.0961)						(0.7332)	
Voice and accountability								0.0042						-2.3926**
								(0.0214)						(0.8898)
Tourism Receipt × Governance effectiveness									-0.1458***					
									(0.0402)					
Tourism Receipt × Regulatory quality										-0.1293***				
										(0.0424)				
Tourism Receipt × Political stability											-0.0861**			
											(0.0348)			
Tourism Receipt × Control of corruption												0.2851***		
												(0.0489)		
Tourism Receipt × Rule of law													0.0518	
													(0.0379)	
Tourism Receipt × accountability														0.1178**
														(0.0465)
Constant	0.1245	0.4643***	0.1017	-0.1435	-0.5433*	-0.4986**	0.0315	0.1231	-0.7836	-0.7263	2.4018**	-2.4680**	-0.4178	-1.0024
	(0.0969)	(0.1680)	(0.0909)	(0.1302)	(0.2918)	(0.2439)	(0.1502)	(0.0968)	(1.0746)	(0.9631)	(0.9226)	(0.9863)	(0.5986)	(0.7188)
Palma ratio (–1)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Time effect	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	503	434	503	503	503	503	503	503	434	434	434	434	434	434
Countries	40	37	40	40	40	40	40	40	37	37	37	37	37	37
Instruments	26	26	26	26	26	26	26	26	26	26	26	26	26	26
Net-effect [Joint significance Test]	–	–	–	–	–	–	–	–	–	–	-0.11[0.018]	-0.29[0.000]	–	–
Wald statistic	2.565e+06	48317	410313	179875	349416	93483	485286	2.127e+06	2912	4554	4387	1886	13827	21391
Wald P-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hansen P-Value	0.217	0.289	0.319	0.273	0.314	0.528	0.375	0.172	0.541	0.438	0.578	0.745	0.314	0.415
AR(1)	0.093	0.092	0.092	0.087	0.090	0.095	0.089	0.093	0.096	0.098	0.108	0.105	0.095	0.095
AR(2)	0.305	0.293	0.293	0.286	0.236	0.185	0.273	0.305	0.185	0.248	0.216	0.188	0.274	0.274

*Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1*

We now shift focus to Columns 2 – 8 to address our first objective. First, there is strong empirical evidence that tourism development equalises incomes in Africa (Column 2). The result shows that an increase in tourism development by 1% reduces income inequality in Africa by 2.98 per cent. This could be explained by the direct (tourism sector), secondary and dynamic effects. First, tourism development could drive economic growth through foreign exchange earnings, jobs creation and poverty reduction, which are critical for reducing income inequality. This more so since labour demand in the tourism subsector and related sectors such as transportation, handicrafts, lodging, food and beverage, are community/district specific for maintaining tourism destination uniqueness and dynamism. Additionally, a thriving tourism sector could also accelerate FDI inflows, particularly, market-seeking and efficiency-seeking foreign investors, which could generate multiple direct and indirect socioeconomic benefits including infrastructure development and the revival of recipient countries' agricultural, industrial and service sectors. Also, in predominantly agriculture-dependent settings like Africa, tourism presents environmental conservation, and climate action module. A burgeoning tourism sector can whip a sense of growing appreciation and pride as local residents become motivated to commit to resource use, conservation and management. Further, receipts/taxes from tourism sector could also be used to improve health, education services, sanitation and water quality, which are essential for addressing income inequality, wealth inequality and lifetime inequality. Indeed, considering the fact that tourism development is captured as officially recorded receipts from tourists, greater income equality-effects are plausible. This is more so since tourism-related expenditure by tourist on travels, handicrafts, and food and beverages are not considered in the measure of tourism development (i.e., tourism receipts).

From Columns 3 to column 8, we introduce the results on our various governance indicators. But for rule of law and voice accountability, we find that all our governance dynamics report negative and statistically significant effects on income inequality. The uniqueness of our results is that, of all the 6 governance indicators, control of corruption is the most effective in equalising incomes in Africa. In specifics, while institutions for controlling corruption reduce income by 0.47 per cent, that of political stability and regulatory quality reduce income inequality by 0.38 per cent and 0.23 per cent, respectively. Our results provide empirical evidence on the assertion by the United Nations that stronger institutions (SDG 16) will prove momentous in achieving the rest of the Sustainable Development Goals (SDGs). This reinforces the position of Acemoglu and Robinson (2012) and Acemoglu, Johnson, and

Robinson (2004) that strong institutions are imperative for achieving, sustaining and sharing growth gains or opportunities. This finding aligns with Kunawotor *et al.* (2020) who find that improving governance quality is essential for reducing income inequality in African.

The second over-arching objective of this paper is the examination of a possible synergistic relationship between governance and tourism development on income inequality in Africa, which we present next. These results are presented in Columns 9 – 14. We find that only control of corruption and political stability matter for forming a synergy with tourism development in Africa's quest to reduce inequality. The results show that, in the presence of quality institutions that reduce corruption, tourism development reduces income inequality in Africa by 0.3 per cent. This marginal (net) effect is computed following Equation (5).

$$\frac{\partial(palma_{it})}{\partial(tour_{it})} = -0.1331 + [(0.2851) \times (\overline{gov_{it}})] = -0.1331 + [(0.2851) \times (-0.584)] = -0.299$$

Where: -0.1331 is the unconditional coefficient of tourism, -0.2851 is the conditional effect of both tourism development and control of corruption, and -0.584 is the mean value of control of corruption. Our result is unique and appeal to sense. Indeed, one of the key challenges of most African countries is widespread corruption, which saps countries resources from sectors such as tourism sector that could be used for economic development. With robust frameworks for fighting corruption, tourism receipts and tax revenues could prove momentous for supporting low-income households through social equity investments such as cash transfers, education, and health, which have been found to be effective in income equality (Uzar & Eyuboglu, 2019). Additionally, since vis-à-vis informal sector activities, records of tourism activities/services, African countries can reduce the tax burden of other sectors if checks and balances are strengthened (Alam & Paramati, 2016).

Similarly, political stability modulates the effect of tourism development in reducing income inequality in Africa by an encouraging 0.11 per cent. We compute this net effect as:

$$\frac{\partial(palma_{it})}{\partial(tour_{it})} = -0.1594 + [(-0.086) \times (\overline{gov_{it}})] - 0.1594 + [(-0.086) \times (-0.516)] = -0.114$$

Where: -0.1594 is the unconditional coefficient of tourism, -0.0861 is the conditional effect from the interaction between tourism and political stability, and -0.516 is the average political stability estimate. In politically fragile settings like Africa, improving democratic procedures and social cohesion could help realise the trickling-down of gains generated through tourism-related activities, investments and exports. For example, a burgeoning tourism sector increases the demand for quality infrastructure- transportation, water and sanitation, which can induce intersectoral supply chains whose impact can reverberate across industries (Mahadevan

& Suardi, 2019). Success stories of this possibility can be seen in countries such as Kenya and Rwanda where tourism receipts and tourism related employments have increased tremendously post politically-related disputes. Additionally, as argued by Chisadza *et al.* (2020), peaceful settings remain are crucial for attracting and sustaining international tourism demand. Additionally, stable economies are essential for incentivising FDI inflows, which as UNCTAD (2019) indicate, explains why foreign investors substituted the Middle East and North Africa for sub-Saharan Africa following the 2011 Arab uprising. Moreover, with FDI inflows to Africa set to rebound in 2022 in line with the AfCFTA, political stability could prove momentous in enhancing investment in Africa's tourism sector.

4.4 Robustness checks 1: Results using Theil index as dependent variable

We also employ alternative proxy of income inequality, namely, the Theil and Gini (net) indices. In this section, we present the results on the former. Our estimates on the Theil index as reported in Table 4 are consistent with the main results reported in Table 3. For instance, we find that human capital and economic globalisation are positive and statistically significant, suggesting that both worsen income inequality in Africa. Surprisingly, our result reveal that economic development has a U-shaped relationship with income inequality, which is at variance with the Kuznets hypothesis.

Likewise, the results show that, with the exception of rule of law, all our governance dynamics and tourism development are significant income equality drivers in Africa. Similar to our results on the Palma ratio, we find that control of corruption is the most effective governance tool for reducing income inequality in Africa (-0.017%). Further, the results show that the interaction between tourism development and governance quality are relevant for reducing income inequality as we found in Table 3. The results show that, the tourism development-political stability interaction is the strongest pathway for reducing income inequality in Africa. In specifics, we report net effects of -0.004 percent, -0.012 per cent, -0.002 per cent and -0.003 per cent for the tourism development– political stability, control of corruption, rule of law, and voice and accountability interactions terms, respectively. These results indicate that additional income inequality-reducing effects of tourism can be attained with quality governance. These net effects are computed based on Equation (5) as follows:

$\frac{\partial(palma_{it})}{\partial(tour_{it})} = -0.006 + [(-0.0029) \times (-0.516)] = -0.0045$, where -0.516 is the mean of political stability score

Table 4. System GMM results on the effects of tourism development and governance on income inequality in Africa (Dependent variable: Theil index)

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Economic globalisation	0.0002***	0.0001	0.0001***	0.0003***	0.0004***	0.0006***	0.0002***	0.0001	0.0003	0.0004*	0.0005***	0.0004	0.0001	0.0001
	(0.0000)	(0.0001)	(0.0000)	(0.0001)	(0.0001)	(0.0001)	(0.0000)	(0.0000)	(0.0002)	(0.0003)	(0.0002)	(0.0003)	(0.0001)	(0.0001)
ICT diffusion	0.0001	0.0001	-0.0001	-0.0000	-0.0002**	-0.0002*	-0.0000	-0.0000	0.0000	-0.0001	-0.0001	-0.0002	0.0002**	0.0002***
	(0.0000)	(0.0001)	(0.0000)	(0.0001)	(0.0001)	(0.0001)	(0.0000)	(0.0000)	(0.0001)	(0.0001)	(0.0002)	(0.0003)	(0.0001)	(0.0001)
Human capital	0.0001***	0.0042	0.0001	0.0001	-0.0001	-0.0001	0.0001***	0.0001**	0.0088	0.0098	0.0080	0.0117	0.0031	0.0053
	(0.0000)	(0.0029)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0095)	(0.0109)	(0.0077)	(0.0135)	(0.0031)	(0.0031)
Economic development	-0.0001**	-0.0001**	-0.0001**	-0.0001	-0.0001	-0.0001	-0.0001***	-0.0001**	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001*
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Economic development (square)	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001*	0.0001	0.0001	0.0001	-0.0001	-0.0001	0.0000	0.0001
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Vulnerable employment	-0.0001	-0.0001	-0.0001**	-0.0001	0.0000	-0.0001	-0.0001	-0.0001	-0.0003*	-0.0001	-0.0001	0.0002	-0.0001*	-0.0001*
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0001)	(0.0001)	(0.0000)	(0.0000)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0001)	(0.0000)
Tourism receipt		-0.0014*							0.0002	-0.0003	-0.0060**	-0.0061*	-0.0037***	-0.0041***
		(0.0007)							(0.0017)	(0.0020)	(0.0024)	(0.0034)	(0.0011)	(0.0008)
Government effectiveness			-0.0042***						-0.0905*					
			(0.0011)						(0.0451)					
Regulatory quality				-0.0121***						-0.0595*				
				(0.0017)						(0.0311)				
Political stability					-0.0073***						0.0458			
					(0.0013)						(0.0315)			
Control of corruption						-0.0176**						-0.2107***		
						(0.0066)						(0.0612)		
Rule of Law							-0.0006						-0.0559***	
							(0.0012)						(0.0205)	
Voice and Accountability								-0.0032**						-0.0565***
								(0.0014)						(0.0140)
Tourism Receipt × Government effectiveness									0.0038					
									(0.0022)					
Tourism Receipt × Regulatory quality										0.0022				
										(0.0016)				
Tourism Receipt × Political stability											-0.0029*			
											(0.0017)			
Tourism Receipt × Control of corruption												0.0105***		
												(0.0032)		
Tourism Receipt × Rule of law													-0.0028**	
													(0.0011)	
Tourism Receipt × Voice and accountability														-0.0030***
														(0.0007)
Constant	0.0193**	0.0313**	0.0156**	0.0079	0.0032	0.0125	0.0216***	0.0224**	0.0183	0.0363	0.0902**	-0.0556	0.0665***	0.0708***
	(0.0074)	(0.0127)	(0.0072)	(0.0069)	(0.0098)	(0.0109)	(0.0069)	(0.0092)	(0.0499)	(0.0415)	(0.0382)	(0.0507)	(0.0210)	(0.0168)
Theil index (-1)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Time effect	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	503	434	503	503	503	503	503	503	434	434	434	434	434	434
Countries	40	37	40	40	40	40	40	40	37	37	37	37	37	37
Instruments	26	26	26	26	26	26	26	26	26	26	26	26	26	26
Net-effect [Joint significance Test]	–	–	–	–	–	–	–	–	–	–	-0.004[0.087]	-0.012[0.002]	-0.002[0.014]	-0.003[0.000]
Wald statistic	923597	232864	901376	2.816e+06	874023	2.455e+06	807765	545471	21971	16913	26236	4419	383216	213083
Wald P-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hansen P-Value	0.153	0.437	0.393	0.340	0.377	0.376	0.0763	0.226	0.474	0.538	0.406	0.861	0.318	0.285
AR(1)	0.060	0.059	0.061	0.060	0.059	0.063	0.060	0.061	0.061	0.061	0.063	0.075	0.059	0.059
AR(2)	0.293	0.264	0.272	0.271	0.257	0.147	0.284	0.305	0.135	0.200	0.193	0.153	0.263	0.261

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

$\frac{\partial(palma_{it})}{\partial(tour_{it})} = -0.0061 + [(0.0105) \times (-0.584)] = -0.0122$, where -0.584 is the average control of corruption score

$\frac{\partial(palma_{it})}{\partial(tour_{it})} = -0.0037 + [(-0.0028) \times (-0.626)] = -0.0019$, where -0.516 is the mean of rule of law

$\frac{\partial(palma_{it})}{\partial(tour_{it})} = -0.0041 + [(-0.0030) \times (-0.522)] = -0.0025$, where -0.522 is the mean value of voice and accountability.

These results provide sheer optimism regarding Africa's Agenda 2063 aspiration 3 of promoting good governance, democracy, respect for human rights, justice and the rule of law. Particularly, we show that quality governance forms synergy with tourism development, and this can prove crucial for achieving the continent's aspiration 1 of achieving a prosperous Africa based on inclusive growth and sustainable development.

4.5 Robustness checks 2: results using Gini (net) index as dependent variable

In this section, we present the results on the Gini index to ascertain the robustness of our results in Table 3 (i.e., Palma ratio results). The lag of Gini index is remarkably positive and statistically significant, meaning that income inequality still persists in African countries. The results also show that, though the effects of ICT diffusion and economic growth are modest, they are significant in reducing income inequality in Africa.

The evidence we provide from Columns 2- 8 indicates that tourism development and our governance dynamics are crucial for addressing income inequality in Africa. While we report an unconditional effect of -0.07 per cent for tourism development (Column 2), we find that governance effectiveness, regulatory quality, corruption control, political stability, and voice and accountability reduce income inequality by 0.53 percent, 0.87 per cent, 1.53 per cent, 0.22 per cent, and 0.63 per cent, respectively. Again, we find that institutions for reducing corruption while providing a conducive environment can prove momentous in reducing income inequality in Africa. Albeit not statistically significant, the interactions between tourism development and our various governance dynamics as we show in Columns 9 – 14, are all negative as expected.

Table 5: System GMM results on the effects of tourism development and governance on income inequality in Africa (Dependent variable: Gini index)

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Economic globalisation	0.0126***	0.0145**	0.0078	0.0074	0.0116*	0.0048	0.0165*	0.0113*	0.0161	0.0100	0.0118	0.0135	0.0219*	0.0157
	(0.0028)	(0.0056)	(0.0061)	(0.0062)	(0.0064)	(0.0137)	(0.0082)	(0.0056)	(0.0105)	(0.0156)	(0.0089)	(0.0209)	(0.0128)	(0.0107)
ICT Diffusion	-0.0051*	0.0011	-0.0061	-0.0142**	-0.0019	-0.0055	-0.0067	-0.0004	-0.0065	-0.0112	-0.0016	-0.0091	0.0002	0.0083
	(0.0028)	(0.0040)	(0.0048)	(0.0053)	(0.0053)	(0.0156)	(0.0089)	(0.0072)	(0.0085)	(0.0102)	(0.0070)	(0.0151)	(0.0117)	(0.0097)
Human Capital	0.0000***	0.4254***	-0.0000	-0.0000	0.0000	-0.0001	-0.0000	-0.0000*	-0.0198	-0.0995	0.1665	0.0981	0.4313	0.1930
	(0.0000)	(0.1477)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.4787)	(0.6785)	(0.2968)	(0.9130)	(0.5923)	(0.5960)
Economic Development	-0.0001	0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0002**	-0.0001	-0.0001	-0.0000	-0.0002	-0.0001	-0.0001
	(0.0000)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0003)	(0.0001)	(0.0001)	(0.0002)	(0.0002)	(0.0001)	(0.0005)	(0.0001)	(0.0002)
Economic Development (Square)	0.0001	-0.0001	0.0001*	0.0001*	0.0001	0.0001	0.0001	0.0001***	0.0001	0.0001	0.0000	0.0000	0.0001	0.0001
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Vulnerable employment	0.0075***	0.0073**	-0.0017	0.0021	0.0018	-0.0060	-0.0022	0.0065**	-0.0037	0.0020	0.0027	-0.0090	0.0079	0.0009
	(0.0012)	(0.0028)	(0.0048)	(0.0052)	(0.0034)	(0.0134)	(0.0078)	(0.0031)	(0.0106)	(0.0150)	(0.0048)	(0.0169)	(0.0098)	(0.0067)
Tourism Receipt		-0.0724*							-0.0527	-0.0829	-0.0399	0.0205	-0.1079	-0.1304
		(0.0376)							(0.1398)	(0.2698)	(0.1085)	(0.2414)	(0.1855)	(0.1335)
Government Effectiveness			-0.5325**						1.2374					
			(0.2603)						(2.1154)					
Regulatory Quality				-0.8715***						2.5788				
				(0.1920)						(4.9871)				
Political Stability					-0.2292**						0.4476			
					(0.1120)						(2.0494)			
Control of Corruption						-1.5371*						-2.7338		
						(0.8984)						(3.9774)		
Rule of Law							-0.6316						3.4007	
							(0.3990)						(3.1718)	
Voice and Accountability								-0.6949***						-0.2833
								(0.1473)						(2.7650)
Tourism Receipt × Government effectiveness									-0.0893					
									(0.1081)					
Tourism Receipt × Regulatory quality										-0.1432				
										(0.2626)				
Tourism Receipt × Political stability											-0.0366			
											(0.1021)			
Tourism Receipt × Control of corruption												0.0525		
												(0.2214)		
Tourism Receipt × Rule of law													-0.1992	
													(0.1633)	
Tourism Receipt × Voice and accountability														-0.0212
														(0.1406)
Constant	-1.1620***	-0.3111	-1.3867***	-2.0470***	-1.6578***	-2.2850*	-1.7915**	-2.3910***	-0.4121	0.9129	-1.0169	-3.1702	-0.7060	-0.5009
	(0.1999)	(0.6232)	(0.4909)	(0.5823)	(0.5012)	(1.2779)	(0.7224)	(0.4882)	(2.7198)	(4.9119)	(1.9332)	(4.5682)	(3.9009)	(2.5410)
Gini index (-l)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Time effects	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	398	346	398	398	398	398	398	398	346	346	346	346	346	346
Countries	40	37	40	40	40	40	40	40	37	37	37	37	37	37
Instruments	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Wald statistic	2.816e+06	288534	1.040e+07	2.510e+07	2.023e+06	1.042e+06	1.010e+07	1.613e+06	57911	32095	523332	21682	111190	72243
Wald P-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hansen P-Value	0.202	0.670	0.938	0.942	0.994	1.000	0.995	0.822	0.970	0.976	0.994	0.993	0.814	0.934
AR(1)	0.316	0.317	0.318	0.316	0.316	0.319	0.320	0.316	0.319	0.317	0.317	0.317	0.319	0.317
AR(2)	0.935	0.360	0.560	0.403	0.919	0.372	0.522	0.175	0.411	0.945	0.616	0.331	0.473	0.764

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

5.0 Conclusion and policy implications

This study contributes to the policy discourse on the need for policymakers interested in Africa's development assistance to foster equitable income distribution as enshrined in Aspiration 1 of Africa's continental framework, '*The Africa We Want'* and the United Nation's SDG 10. Our attention on tourism is premised on Goal 4 of Aspiration 1 of ensuring that Africa's natural resources count for all while we concentrate on governance considering efforts by African countries to improve institutional quality as enshrined in Aspiration 7 of Africa Agenda 2063. We explore the tourism development-governance linkages by testing whether (1) conditionally and unconditionally both tourism development and governance matter for the equalisation of incomes in Africa, and (2) in the presence of good governance, tourism development has greater income inequality-reducing effects. To this end, we draw annual data on 48 African countries for the period 1996 – 2020 for the analysis.

We provide robust evidence from the GMM estimator to firm both hypotheses. First, though both tourism development and governance contribute to the equalisation of income sin Africa, the effect of the former is rather remarkable. Second, our findings on the unconditional effects of governance also reveal that more premium must be placed on corruption control, regulatory quality, and the stringent adherence to the rule of law to foster equitable income distribution in Africa. Finally, we find that quality governance matters for amplifying the income inequality-reducing effect of tourism development. In particular, we find that control of corruption, political stability, and regulatory quality are keys. We advance the extant literature in this regard.

In the light of our findings, we recommend that African leaders strengthen institutions, structure and frameworks that contribute to the development of the tourism industry. This could be realised if Africa leaders commit to democratic and constitutional procedures to build trust and cohesion, which could prove crucial for sustaining tourism inflows. Also, we recommend that policymakers interested in Africa's equitable income growth agenda put in place incentives, for example, periodic tax holidays and the development of infrastructural such as road, energy and digital, which could attract domestic and foreign investors. While physical infrastructure in itself drive social inclusion and makes tourist sites less costly, digital infrastructure could be leveraged to boost '*online tour*' where by way of audio-visuals, tourist sites, products or services are paid for and accessed online. Additionally, we recommend that officials/managers in the tourism sector mount tourism promotion and diversification strategies to enhance the visibility, uniqueness, and the relevance of the sector to economic development. This could be achieved if tourism managers adopt contemporary tourism

branding and marketing strategies where hotels and restaurants managers, domestic and international influencers (e.g., bloggers, vloggers, celebrities), travel agents, tour operators, and local authorities are fused into the tourism supply chain. Finally, incentives such as free/subsidised bus rides for tourists to tourist sites, and open visas regimes should be encouraged to ease the burden of tourists.

The main drawback of the study is that we do not consider all African countries on grounds of data unavailability. Additionally, in this study, we proxy tourism development as official receipts from tourists in the tourism sector alone, meaning that related expenditures such as hotels, and gym are not considered. This is study did not examine whether the tourism-development-income inequality matters for inclusive growth as well. We leave this for future work.

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APPENDICES

Table A.1: Variable definition and sources

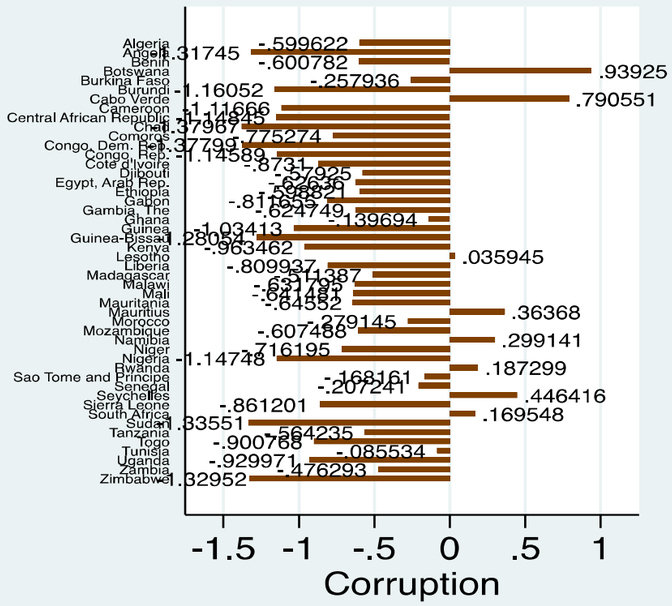
Variables	Descriptions	Sources
Dependent variables		
Palma ratio	Ratio of the share of incomes held by the richest 10% of the population to that of the poorest 40% of the population.	GCIP
Gini index	The extent to which the distribution of income among individuals deviates from perfect equality (0 denotes a case of perfect equality while 100 indicates a case of perfect inequality	WDI & GCIP
Theil index	measures how much the amount each individual in a given income distribution receives is away from a case of perfect uniform distribution.	GCIP
Variables of interest		
Tourism development	Tourism receipts from inbound international visitors (US$)	WDI
Rule of law	Perception on the effectiveness of institutions of Rule of law (estimate)	WGI
Control of corruption	Captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. (estimate)	WGI
Government effectiveness	Perception on the effectiveness of governments in managing and introducing policies aimed at economic growth and development (estimate)	WGI
Regulatory quality	Perception on the soundness of institutions for effective state regulation (estimate)	WGI
Political stability	perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism (estimate)	WGI
Voice and accountability	perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.	WGI
Control variables		
GDP per capita	Real GDP divided by population	WDI
Financial access	Financial institutions access	Findex
Vulnerable employment	Contributing family workers and own-account workers as a percentage of total employment	WDI
ICT diffusion	Composite index on the construction, extension, improvement, operation, and maintenance of communication systems (postal, telephone, telegraph, wireless, and satellite communication systems).	AIKP

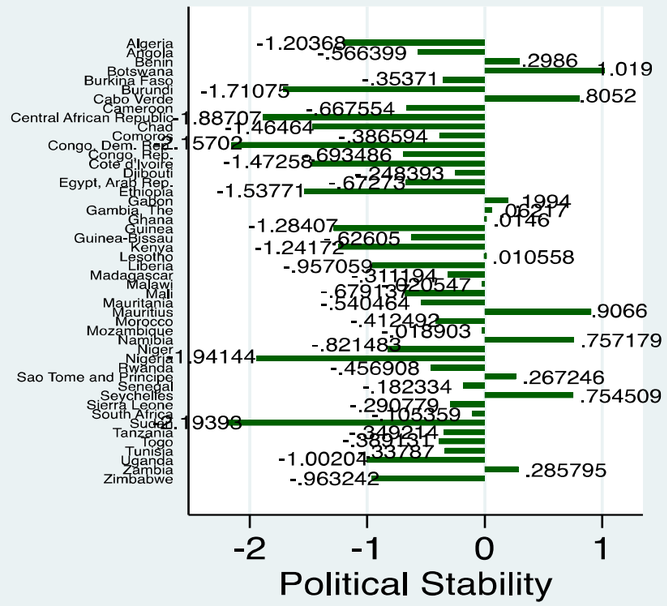
Note: WDI is World Development Indicators; Findex is IMF's Financial Development Index; GCIP is Global Consumption and Income Project; WGI is World Government Indicators; AIKP is Africa Infrastructure Development Program.
Source: Authors' construct, 2021

Table A.2: Pairwise correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) Gini (net)	1															
(2) Palma ratio	0.615***	1														
(3) Theil index	0.584***	0.978***	1													
(4) Economic globalisation	0.181***	0.172**	0.112*	1												
(5) ICT diffusion index	0.0382	-0.102	-0.120*	0.282***	1											
(6) Human capital	0.334***	0.269***	0.173**	0.633***	0.278***	1										
(7) GDP per capita	0.313***	0.280***	0.183***	0.650***	0.337***	0.746***	1									
(8) GDP per capita (squared)	0.265***	0.271***	0.199***	0.610***	0.334***	0.662***	0.947***	1								
(9) Vulnerable employment	-0.229***	-0.226***	-0.115*	-0.661***	-0.267***	-0.780***	-0.850***	-0.744***	1							
(10) Tourism receipts	0.0523	0.00712	-0.0352	0.525***	0.294***	0.516***	0.430***	0.322***	-0.529***	1						
(11) Governance effectiveness	0.307***	0.285***	0.262***	0.485***	0.176**	0.576***	0.665***	0.629***	-0.664***	0.567***	1					
(12) Regulatory quality	0.392***	0.398***	0.406***	0.478***	0.121*	0.493***	0.580***	0.580***	-0.506***	0.408***	0.884***	1				
(13) Political stability	0.472***	0.285***	0.296***	0.370***	0.0987	0.353***	0.434***	0.417***	-0.370***	0.227***	0.660***	0.704***	1			
(14) Corruption control	0.415***	0.359***	0.333***	0.409***	0.132*	0.505***	0.594***	0.577***	-0.559***	0.349***	0.882***	0.837***	0.696***	1		
(15) Rule of law	0.307***	0.206***	0.200***	0.487***	0.168**	0.540***	0.583***	0.578***	-0.593***	0.464***	0.909***	0.871***	0.772***	0.875***	1	
(16) Voice and accountability	0.401***	0.300***	0.302***	0.257***	0.0655	0.332***	0.412***	0.457***	-0.258***	0.168**	0.603***	0.707***	0.690***	0.640***	0.697***	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$





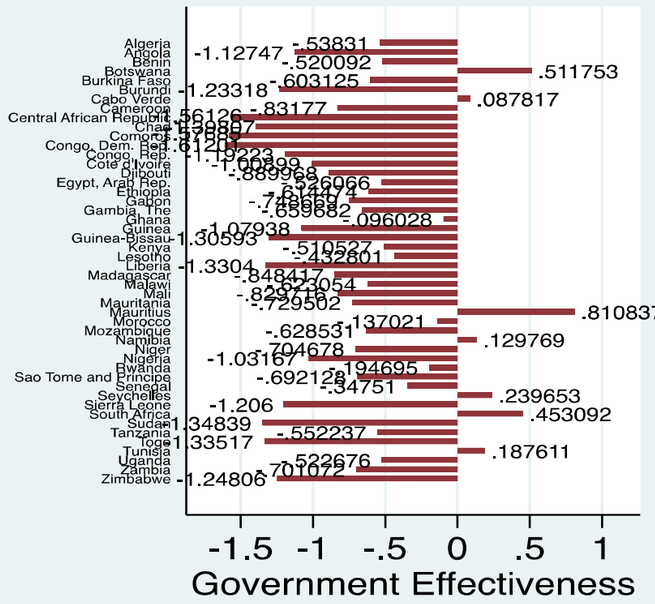


Figure A.1: Average within-country governance and tourism development in Africa, 1996 – 2020.