

European Xtramile Centre of African Studies (EXCAS)

EXCAS Working Paper

WP/21/079

Tourism management for financial access in Sub-Saharan Africa: inequality thresholds

Simplice A. Asongu

African Governance and Development Institute,
P.O. Box 8413, Yaoundé, Cameroon
E-mails: asongusimplice@yahoo.com
/ asongus@afridev.org

Mushfiqur Rahman

School of Business, University of Wales Trinity Saint David,
Winchester House, 11 Cranmer Road,
London, UK, SW9 6EJ.
E-mail: m.rahman@uwtsd.ac.uk

Okeoma J-P Okeke

PhD, MA, BSc, PGCert, ALTHE, FHEA,
BA Business Management - Programme Manager,
Doctor of Business Administration DBA Part II- Programme Manager,
University of Wales Trinity Saint David - London Campus,
Winchester House, 11 Cranmer Road London, SW9 6EJ
E-mail: Okeoma.Okeke@uwtsd.ac.uk

Afzal S. Munna

Lecturer, Module Leader, and Weekend Academic Coordinator
E-mail: a.munna@uwtsd.ac.uk

Research Department

Tourism management for financial access in Sub-Saharan Africa: inequality thresholds**Simplice A. Asongu, Mushfiqur Rahman, Okeoma J-P Okeke & Afzal S. Munna**

January 2021

Abstract

The study provides insights into how tourism can be managed to improve financial access in sub-Saharan Africa. The empirical evidence is based on the generalised method of moments. To make this assessment, inequality dynamics (i.e. the Gini coefficient, the Atkinson index and Palma ratio) are interacted with tourism (tourism receipts and tourists' arrivals) to establish inequality levels that should not be exceeded in order for tourism to promote financial access in the sampled countries. From the findings, inequality levels that should not be exceeded for tourism to promote financial access are provided: (i) 0.666 of the Atkinson index and 5.000 of the Palma ratio for tourism receipts to promote financial access and (ii) for tourist arrivals to enhance financial access, 0.586, 0.721 and 6.597 respectively, of the Gini coefficient, the Atkinson index, and the Palma ratio. Policy implications are discussed.

Keywords: Tourism; Management; Financial access; Inequality; Africa; Sustainable Development

JEL Classification: O10, O40, Z3, Z32

1. Introduction

The focus of the present study on providing inequality thresholds that should not be exceeded in order for tourism development to favour financial access is premised on three fundamental insights from the extant literature, notably: (i) the need for financial access; (ii) issues related to income inequality especially in the light of achieving sustainable development challenges like sustainable development goals (SDGs), especially as it pertains to mitigating inequality and poverty in Sub-Saharan Africa (SSA). (iii) The third insight is on a gap in the extant literature. These fundamental insights are discussed in chronological order as highlighted.

First, financial access is a policy concern in SSA because measures from the World Bank and other multilateral development institutions as well as country-specific policies are being tailored to promote financial inclusion in view of promoting the positive redistribution of the fruits of economic growth and favouring the path towards the attainment of SDGs, *inter alia* (Asktrakhan, 2016; Asongu, Nnanna & Acha-Anyi, 2020; Tchamyou, 2019). According to the narrative, while in the developing world on average, financial access has increased, with a substantial majority of the growth emanating from citizens opening banking banks at financial institutions, the only developing region that has defied the underlying trend has been SSA. Moreover, such financial access is worthwhile in SSA compared to other developing regions because SSA is more characterised by concerns of surplus liquidity in bank institutions owing to *inter alia*, information asymmetry and the absence of collaterals (Asongu, 2020; Odhiambo, 2020).

Second, the concern of inequality is vital in SSA especially in the light of the unfavourable prospect of this policy syndrome on macroeconomic externalities such as economic growth, investment, consumption and financial access, *inter alia* (Robinson, 2015; Bicaba, Brixiova & Ncube, 2017; Asongu & Kodila-Tedika, 2017; Asongu & le Roux, 2019). As recently argued by Bicaba et al. (2017), if the concern of income inequality is not tackled in SSA, the sub-region is unlikely to achieve most SDGs related to income inequality. Hence, it is worthwhile for studies to assess how inequality affects the interaction between macroeconomic outcomes in order to establish critical levels of inequality that should not be exceeded in order to facilitate positive nexuses between attendant macroeconomic outcomes. This study focuses on how income inequality affects the linkage between tourism and financial access in the light of a gap in the extant literature.

Third, the existing literature focusing on tourism has largely been oriented towards determinants of tourism (Richter & Waugh, 1986; Sönmez & Graefe, 1998; Pizam &

Fleischer, 2002; Kingsbury & Brunn, 2004; Saha & Yap, 2014; Alvarez & Campo, 2014; Pratt & Liu, 2016; Liu & Pratt, 2017). However, in the light of insights from the preceding narrative, the study departs from the extant strand of literature by assessing the role of inequality in the nexus between tourism and financial access.

The intuition for the linkages between inequality, tourism and financial access can be discussed on two fronts. On the one hand, tourism promotes development outcomes such as financial access. Accordingly, the arrival of tourists and/or funds related to tourism receipts are associated with more financial intermediary activities owing to *inter alia*: (i) an increase in financial depth due to potentially more usage of domestic currency and (ii) higher deposits in banks and by extension, more private domestic credit associated with the underlying deposits, contingent on the tourism receipts being deposited in financial institutions. On the other hand, inequality can affect tourism because, *inter alia*: tourism is associated with poverty (Folarin & Adeniyi, 2020) and other inclusive development outcomes (World Bank, 2011; UNEP, 2011; Nyasha, Odhiambo & Asongu, 2020) in both developed and developing countries (WTTC, 2020; IDC, 2018; UNCTAD, 2013). Accordingly, as substantiated by UNCTAD (2013), tourism is linked to inequality because tourism is also associated with the promotion of economic and human outcomes of development that are more apparent in situations when tourism related policy initiatives are inclusive. This premise of the link between inequality and tourism is supported by Signe (2018) who posits that when inclusive policies are taken on board, the African continent can substantially benefit from the favourable development externalities of tourism. This study argues that such favourable externalities extend to benefits in terms of financial development as argued above.

The rest of the study is organised as follows. Section 2 discusses the data and methodology while the empirical findings are provided in Section 3. Section 4 concludes with implications and future research directions.

2. Data and methodology

2.1 Data

The study focuses on a panel of 35 countries in SSA for the period 2010 to 2014¹. The number of countries and related periodicity are contingent on the availability of data at the

¹“Angola; Benin; Botswana; Burkina Faso; Burundi; Cabo Verde; Cameroon; Central African Republic; Chad; Comoros; Democratic Republic of Congo; Congo Republic; Cote d'Ivoire; Eswatini; the Gambia; Ghana; Guinea; Guinea-Bissau; Kenya; Lesotho; Madagascar; Malawi; Mali; Mauritius; Mozambique; Namibia; Niger; Nigeria; Rwanda; Senegal; Sierra Leone; South Africa; Tanzania; Togo & Uganda”.

time of the study. The data are obtained from various sources, notably: the Financial Development and Structure Database (FDSD) of the World Bank; World Development Indicators (WDI) of the World Bank; the Global Consumption and Income Project (GCIP) and World Governance Indicators (WGI) of the World Bank.

The outcome variable from the FDSD is domestic credit to the private sector by banks (% of GDP) and is consistent with recent African-centric financial development literature (Tchamyou, 2019; Odhiambo, 2020). The tourism variables are from WDI of the World Bank and in accordance with contemporary tourism literature (Nyasha et al., 2020; Asongu, Nnanna, Biekpe & Acha-Anyi, 2019), are tourism receipts (% of exports) and tourists' arrivals (in millions). The inequality variables are sourced from the GCIP, namely: the Gini coefficient, the Atkinson index and the Palma ratio. These indicators have been employed in recent inclusive development literature (Meniago & Asongu, 2018; Tchamyou, 2020a, 2020b). Three main control variables are used in order to account for potential biases in omitted variables, notably: (i) households and non-profit institutions serving households (NPISHs) final consumption expenditure (% of GDP) from WDI of the World Bank; (ii) GDP per capita from WDI of the World Bank and (iii) political stability from the WGI of the World Bank. The expected signs of the control variables are discussed in what follows.

While all the three control variables are expected to positively influence the outcome variable, it is important to note that owing to the growing exclusive distribution of the fruits from economic growth in SSA (Bicaba et al., 2017; Tchamyou, Asongu & Odhiambo, 2019), gross domestic product per capita can engender the opposite effect on the outcome variable. Intuitively, household consumption is expected to positively influence financial access, especially when such consumption is associated with banking activities that involve deposits and credit operations. Political stability is likely to favor financial access because it offers a favorable environment for economic activities and by extension; such economic activities are associated with enhanced financial activities such as financial access.

The summary statistics is disclosed in Appendix 2 while the definitions of variables and their corresponding sources are provided in Appendix 1. In the former, logarithms are not required to make the variables comparable because the estimates are not interpreted as in linear additive models. Accordingly, since thresholds are to be established from the interactive regressions in the light of the problem statement of the study, normalizing the variables by changing units does not change the final results in terms of thresholds. This narrative is consistent with recent threshold literature based on interactive regressions (Asongu & Odhiambo, 2020a, 2020b).

2.2 Methodology

2.2.1 Specification

The estimation strategy adopted in this study is the generalised method of moments (GMM) in the light of its documented advantages in the contemporary literature employing the estimation strategy, notably; Asongu, le Roux and Biekpe (2017), Asongu and Minkoua (2018), Tchamyou (2019) and Tchamyou, Erreygers and Cassimon (2019). Below are some favourable factors that motivate the choice of the attendant estimation technique. First, persistence is apparent in the outcome variable on the premise that the correlation between the level and first lag of financial access is 0.994, a coefficient that exceeds the rule of thumb threshold which has been documented in the attendant literature focusing on GMM regressions (Tchamyou, 2020a, 2020b). Second, the data structure is such that the number of periods in each cross section is lower than the corresponding number of sampled countries or investigated cross sections. Third, the adopted method of estimation is tailored to incorporate concerns of endogeneity because, *inter alia*: (i) an internal instrumentation process is engaged to control for reverse causality and (ii) time-invariant fixed effects are used to take account of the unobserved heterogeneity.

Equation (1) and Equation (2) below present the standard system estimation approach with respectively, level and first difference specifications:

$$FA_{i,t} = \sigma_0 + \sigma_1 FA_{i,t-\tau} + \sigma_2 T_{i,t} + \sigma_3 I_{i,t} + \sigma_4 TI_{i,t} + \sum_{h=1}^3 \delta_h W_{h,i,t-\tau} + \eta_i + \xi_t + \varepsilon_{i,t} \quad (1)$$

$$FA_{i,t} - FA_{i,t-\tau} = \sigma_1 (FA_{i,t-\tau} - FA_{i,t-2\tau}) + \sigma_2 (T_{i,t} - T_{i,t-\tau}) + \sigma_3 (I_{i,t} - I_{i,t-\tau}) + \sigma_4 (TI_{i,t} - TI_{i,t-\tau}) + \sum_{h=1}^3 \delta_h (W_{h,i,t-\tau} - W_{h,i,t-2\tau}) + (\xi_t - \xi_{t-\tau}) + (\varepsilon_{i,t} + \varepsilon_{i,t-\tau}), \quad (2)$$

where $FA_{i,t}$ represents the financial access variable of country i in period t ; T denotes a tourism channel (tourism receipts or tourists arrivals); I reflects a dynamic of inequality (the Gini coefficient, the Atkinson index or the Palma ratio); TI is the interaction between a tourism channel and an inequality proxy (“tourism receipts \times the Gini coefficient”, “tourism receipts \times the Atkinson index”, “tourism receipts \times the Palma ratio”, “tourists arrivals \times the Gini coefficient”, “tourists arrivals \times the Atkinson index”, “tourists arrivals \times the Palma ratio”); σ_0 is a constant; τ is the degree of auto-regression which is denoted by one in the equation because such a one period lag appropriately captures past information in order to elucidate the model; W is the vector of control variables (*GDP per capita*, *household*

consumption and *political stability*); η_i is the country-specific effect; ξ_t is the time-specific constant and $\varepsilon_{i,t}$ is the error term.

Of the GMM options that are available, this study employs the Roodman (2009) improvement of Arellano and Bover (1995) given its documented advantages in terms of controlling for dependence across countries and restricting the proliferation of instruments. Moreover, in the specification, the robust or *two-step* approach which is in line with heteroscedasticity is preferred to the *one-step* technique which is more aligned to homoscedasticity.

2.2.2 Identification and exclusive restrictions

Disclosing features surrounding issues related to identification and exclusive restrictions is essential for a sound GMM specification. This is fundamental because the corresponding information criteria are necessary for estimated models to be subsequently validated. According to the identification process, three sets of variables have to be elucidated, namely: the outcome variables, the endogenous explaining or predetermined variables and the strictly exogenous variables. In the present study, as discussed in the abstract, the outcome variable is financial access which is proxied by domestic credit to the private sector. The endogenous explaining or predetermined variables constitute the independent variables that are not strictly exogenous. From the study such variables entail, the main tourism channels (tourism receipts and tourists arrivals), the moderating inequality dynamics (i.e. the Gini coefficient, the Atkinson index and the Palma ratio) and control variables (GDP per capita, household consumption and political stability). The strictly exogenous proxies are qualified as time invariant or years in the light of the premise in contemporary GMM literature that these can exhibit strict exogeneity because they cannot be endogenous after a first difference (Roodman, 2009; Tchamyou & Asongu, 2017; Asongu & Odhiambo, 2020c).

Still building on the attendant GMM-centric literature (Odhiambo, 2020; Tchamyou, 2020a, 2020b), the process of validating exclusive restrictions consists of examining whether the designed proxies that are strictly exogenous influence the dependent variable exclusively through the exogenous mechanisms of the adopted and discussed predetermined or endogenous explaining variables. The test that is employed for the purpose of this assessment is the Difference-in-Hansen test (DHT) which should not be rejected in order for the exclusive restriction hypothesis to hold. Hence, the non-rejection of the DHT in the empirical results section translates the perspective that the exclusive restriction hypothesis holds.

3. Empirical results

The empirical findings are disclosed in this section in Table 1 which is divided into seven main columns. The first column provides the variables and corresponding information criteria for the validity of models while the last-six discloses the empirical results. The disclosure of these empirical results is in two main sections: one on regressions focusing on tourism receipts and the other on regressions with respect to tourists' arrivals. In each of the tourism-centric regressions, three main specifications are apparent, with each specific specification focusing respectively on the interactions with the Gini coefficient, the Atkinson index and the Palma ratio.

Based on four information criteria that are fundamental in the assessment of the validity of disclosed results, the six specifications are overwhelmingly valid². In order to examine the overall impact of inequality in the influence of tourism on financial access, net impacts are calculated as in recent literature focusing on interactive models (Asongu & Acha-Anyi, 2017, 2020). To better illustrate this example, in the penultimate column of Table 1, the net impact of international tourist's arrivals on financial access contingent on the Atkinson index is: 0.118 ($[0.701 \times -5.760] + [4.156]$). In the calculation, the unconditional impact of tourists' arrivals is 4.156; the mean value of the Atkinson index is 0.701 while the conditional impact from the interaction between the Atkinson index and international tourists' arrivals is -5.760.

Overall, it is apparent that while the net effects from interactions with tourism receipts are negative, the corresponding net effects from interactions with tourism arrivals are positive. However, in the light of the problem statement motivating the study, with the exception of the specification in the second column from which net effects cannot be established because at least one estimated coefficient needed for such computation is not significant, the conditional or interactive effects are consistently negative while the unconditional incidence of tourism dynamics on financial access are consistently positive. This is an indication that while tourism has a positive incidence on financial access, existing levels of inequality mitigate the underlying positive incidence. These tendencies which are consistent with the intuition of the study discussed in the introduction motivate the computation of inequality thresholds. Such

² "First, the null hypothesis of the second-order Arellano and Bond autocorrelation test (AR (2)) in difference for the absence of autocorrelation in the residuals should not be rejected. Second the Sargan and Hansen over-identification restrictions (OIR) tests should not be significant because their null hypotheses are the positions that instruments are valid or not correlated with the error terms. In essence, while the Sargan OIR test is not robust but not weakened by instruments, the Hansen OIR is robust but weakened by instruments. In order to restrict identification or limit the proliferation of instruments, we have ensured that instruments are lower than the number of cross-sections in most specifications. Third, the Difference in Hansen Test (DHT) for exogeneity of instruments is also employed to assess the validity of results from the Hansen OIR test. Fourth, a Fisher test for the joint validity of estimated coefficients is also provided" (Asongu & De Moor, 2017, p.200).

thresholds are maximum levels of inequality that should not be exceeded in order for the positive incidence of the tourism dynamics on financial access to be maintained.

Table 1: Tourism, inequality and financial access

	Dependent variable: Financial Access					
	Tourism Receipts			Tourist Arrivals		
Financial Access (-1)	0.977*** (0.000)	1.003*** (0.000)	1.006*** (0.000)	0.926*** (0.000)	0.948*** (0.000)	0.941*** (0.000)
Tourism Receipts (TR)	-0.0008 (0.800)	0.002*** (0.000)	0.001*** (0.000)	---	---	---
Tourists Arrivals (TA)	---	---	---	6.898*** (0.004)	4.156*** (0.000)	1.491** (0.010)
Gini Coefficient (Gini)	42.052*** (0.003)	---	---	79.503*** (0.000)	---	---
Atkinson Index (Atkin)	---	15.994*** (0.002)	---	---	28.748*** (0.001)	---
Palma Ratio (Palma)	---	---	0.809*** (0.001)	---	---	1.356*** (0.004)
TR × Gini	0.0007 (0.882)	---	---	---	---	---
TR × Atkin	---	-0.003*** (0.000)	---	---	---	---
TR × Palma	---	---	-0.0002*** (0.000)	---	---	---
TA × Gini	---	---	---	-11.766*** (0.002)	---	---
TA × Atkin	---	---	---	---	-5.760*** (0.000)	---
TA × Palma	---	---	---	---	---	-0.226*** (0.001)
GDP Per Capita	-0.001* (0.061)	-0.0008 (0.244)	-0.0009 (0.216)	-0.003*** (0.000)	-0.001** (0.018)	-0.002*** (0.001)
Household Consumption	0.001 (0.265)	0.0007 (0.618)	0.0008 (0.573)	0.006*** (0.000)	0.003** (0.019)	0.005*** (0.000)
Political Stability	2.449* (0.071)	2.065*** (0.001)	1.926*** (0.002)	-1.130 (0.223)	0.353 (0.403)	-0.173 (0.756)
Time Effects	Yes	Yes	Yes	Yes	Yes	Yes
Net Effects of FD	Na	-0.0001	-0.0003	0.7921	0.118	0.0378
Inequality Thresholds	Na	0.666	5.000	0.586	0.721	6.597
AR(1)	(0.024)	(0.037)	(0.033)	(0.039)	(0.041)	(0.040)
AR(2)	(0.595)	(0.552)	(0.551)	(0.579)	(0.569)	(0.570)
Sargan OIR	(0.006)	(0.007)	(0.008)	(0.000)	(0.000)	(0.001)
Hansen OIR	(0.124)	(0.203)	(0.282)	(0.612)	(0.306)	(0.366)
DHT for instruments						
(a) Instruments in levels						
H excluding group	(0.619)	(0.571)	(0.616)	(0.414)	(0.299)	(0.767)
Dif(null, H=exogenous)	(0.069)	(0.135)	(0.191)	(0.624)	(0.339)	(0.222)
(b) IV (years, eq(diff))						
H excluding group	(0.147)	(0.179)	(0.169)	(0.503)	(0.269)	(0.364)
Dif(null, H=exogenous)	(0.226)	(0.405)	(0.813)	(0.687)	(0.452)	(0.368)
Fisher	2.50e+07***	593620.46***	30432.73***	9620.58***	18825.72***	3.70e+06***
Instruments	30	30	30	30	30	30
Countries	33	33	33	34	34	34
Observations	127	127	127	131	131	131

***, **, *: significance levels at 1%, 5% and 10% respectively. DHT: Difference in Hansen Test for Exogeneity of Instruments Subsets. Dif: Difference. OIR: Over-identifying Restrictions Test. The significance of bold values is twofold. 1) The significance of estimated coefficients and the Wald statistics. 2) The failure to reject the null hypotheses of: a) no autocorrelation in the AR(1) & AR(2) tests and; b) the validity of the instruments in the Sargan and Hansen OIR tests. 0.584, 0.701 and 6.430 are respectively mean values of the Gini coefficient, the Atkinson index and the Palma ratio. na: not applicable because at least one estimated coefficient need for the computation of net effects is not significant. Constants are included in all regressions.

Still using the same illustrative example in the penultimate column of Table 1, the Atkinson index that should not be exceeded in order for tourists' arrivals to maintain its positive impact on financial access is 0.721 (4.156/5.760). The corresponding threshold is qualified as a negative threshold in the light of the negative sign from the associated conditional effect. In other words, as the level of income inequality increases, such increase dampens the positive effect of tourists' arrivals on financial access. It follows that 0.721 is the turning point because at the established threshold, the net effect is zero because beyond the threshold, the overall effect becomes negative. Accordingly, when the Atkinson index is 0.721, the overall incidence of tourists' arrivals on financial access is 0.00 ($[0.721 \times -5.760] + [4.156]$).

In the light of the computation above, from the findings, income inequality levels that should not be exceeded for tourism to promote financial access are: (i) 0.666 of the Atkinson index and 5.000 of the Palma ratio for tourism receipts and (ii) for tourist arrivals, 0.586, 0.721 and 6.597 respectively, of the Gini coefficient, the Atkinson index and the Palma ratio. The control variables largely have the expected signs, in accordance with the discussion in the data section.

While findings of the present study cannot be directly compared with the extant literature because the tourism literature is largely based on the non-interactive regressions that are interpreted as linear additive models, it is worthwhile to emphasize that the link between financial development and tourism has already been established in the literature, though in the opposite direction. Such include, *inter alia*, studies on the influence of the global financial crisis on tourism development (Papatheodorou, Rosselló & Xiao, 2010; Khalid, Okafor & Shafiullah, 2020). Moreover, these findings complement a growing strand of literature on inequality levels that should not be exceeded for the establishment of favorable macroeconomic outcomes, *inter alia*: poverty and inequality thresholds that should not be exceeded in order for information and communication technology to positively influence gender intermediary education (Asongu, Amari, Jarboui & Mouakhar, 2021); inequality levels that should be kept in check in order for governance to promote gender economic participation (Asongu & Odhiambo, 2020d) and inequality levels that should not be reached in order for financial access to promote renewable energy consumption (Asongu & Odhiambo, 2021).

4. Concluding implications and future research directions

The study provides insights into how tourism can be managed to improve financial access in sub-Saharan Africa. The empirical evidence is based on the generalised method of moments. To make this assessment, inequality dynamics (i.e. the Gini coefficient, the Atkinson index and Palma ratio) are interacted with tourism (tourism receipts and tourist arrivals) to establish inequality levels that should not be exceeded in order for tourism to promote financial access in the sampled countries. From the findings, inequality levels that should not be exceeded for tourism to promote financial access are: (i) 0.666 of the Atkinson index and 5.000 of the Palma ratio for tourism receipts and (ii) for tourist arrivals, 0.586, 0.721 and 6.597 respectively, of the Gini coefficient, the Atkinson index and the Palma ratio.

The main policy implication of this study is that inequality levels should be kept in check in order to enable inclusive development opportunities pertaining to tourism development that promote financial access in the sampled countries. Accordingly, tourism management at the macroeconomic level should be tailored concomitantly with inclusive development measures because this study has shown that the positive incidence of tourism on financial access is a decreasing function of inequality. In other words, existing levels of inequality dampen the prospect of tourism in promoting access to finance. It follows that policy makers should ensure that inequality levels are kept below those established in this study.

The main caveat of this study is that country-specific effects are not considered in the empirical exercise in the light of the premise that the estimation technique is theoretically and practically designed to eliminate country fixed-effects that are correlated with the lagged outcome variable. Such correlation is a source of endogeneity and hence, country fixed effects are purged from the specification exercise in order to avoid this concern of endogeneity. Building on this caveat, it is worthwhile for future studies to provide country-specific insights into how these empirical findings are relevant within country-specific contexts. Hence, employing the relevant country-specific empirical strategies for country-specific inequality thresholds at which tourism no longer promotes financial access should be considered in future research. Moreover, the study can also be considered within the remit of other developing countries and regions outside Sub-Saharan Africa.

Appendices

Appendix 1: Definitions of Variables

Variables	Signs	Definitions of variables (Measurements)	Sources
Financial Access	Finance	Domestic credit to private sector by banks (% of GDP)	FDSB
Tourism Receipts	TR	International tourism, receipts (% of total exports)	WDI
Tourist Arrivals	TA	International tourist arrivals (millions)	WDI
Gini Coefficient	Gini	<i>“The Gini index is a measurement of the income distribution of a country's residents”.</i>	GCIP
Atkinson Index	Atkinson	<i>“The Atkinson index measures inequality by determining which end of the distribution contributed most to the observed inequality”.</i>	GCIP
Palma Ratio	Palma	<i>“The Palma ratio is defined as the ratio of the richest 10% of the population's share of gross national income divided by the poorest 40%'s share”.</i>	GCIP
GDP per capita	GDPcp	GDP per capita (constant 2010 US\$)	WDI
Household consumption		Households and Non-profit institutions serving households (NPISHs) final consumption expenditure (% of GDP)	WDI
Political Stability	PolS	<i>“Political stability/no violence (estimate): measured as the perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional and violent means, including domestic violence and terrorism”</i>	WGI

FDSB: Financial Development and Structure Database. WDI: World Bank Development Indicators of the World Bank. GCIP: Global Consumption and Income Project. WGI: World Governance Indicators.

Appendix 2: Summary statistics (2010-2014)

	Mean	SD	Minimum	Maximum	Obs
Financial Access	22.105	19.242	3.697	106.260	174
Tourism Receipts	723.459	1820.581	1.500	11202	167
Tourists Arrivals	0.920	1.641	0.012	9.549	172
Gini Coefficient	0.584	0.036	0.488	0.851	174
Atkinson Index	0.701	0.067	0.509	0.832	174
Palma Ratio	6.430	1.555	3.015	14.434	174
GDP per capita	1882.126	2194.262	234.235	9163.633	175
Poverty	1224.629	1346.299	189.82	6441.6	175
Political Stability	-0.474	0.832	-2.699	1.104	170

S.D: Standard Deviation.

References

- Alvarez, M. D. & Campo, S., (2014). "The Influence of Political Conflicts on Country Image and Intention to visit: A Study of Israel's Image." *Tourism Management*, 40(February), pp. 70-78.
- Arellano, M., & Bover, O., (1995). "Another look at the instrumental variable estimation of error components models." *Journal of Econometrics* 68(1), pp. 29–52.
- Asktrakhan, I., (2016). "Universal financial access by 2020? Look to Africa for inspiration", *World Bank Blogs*, <https://blogs.worldbank.org/african/universal-financial-access-by-2020-look-to-africa-for-inspiration> (Accessed: 20/04/2021).
- Asongu, S. A., (2020). "Financial access and productivity dynamics in sub-Saharan Africa". *International Journal of Public Administration*, 43(12), pp. 1029-1041.
- Asongu, S. A. & Acha-Anyi, P. N., (2017). "ICT, conflicts in financial intermediation and financial access: evidence of synergy and threshold effects", *Netnomics*, 18(2-3), pp. 131–168.
- Asongu, S. A., & Acha-Anyi, P. N., (2020). "Global tourism and waves of terror: perspectives from military expenditure", *Journal of Policy Research in Tourism, Leisure and Events*, 12(2), pp. 239-26.
- Asongu, S. A., Amari, M., Jarboui, A., & Mouakhar, K., (2021). "ICT dynamics for gender inclusive intermediary education: Minimum poverty and inequality thresholds in developing countries", *Telecommunications Policy*, 45(5), 102125.
- Asongu, S. A., & De Moor, L., (2017). "Financial Globalisation Dynamic Thresholds for Financial Development: Evidence from Africa", *European Journal of Development Research*, 29(1), pp. 192-212.
- Asongu, S. A., & Kodila-Tedika, O., (2017). "Is Poverty in the African DNA (Gene)?" *South African Journal of Economics*, 85(4), pp. 533-552.
- Asongu, S. A., & le Roux, S., (2019). "Understanding Sub-Saharan Africa's Extreme Poverty Tragedy", *International Journal of Public Administration*, 42(6), pp. 457-467.
- Asongu, S. A., le Roux, S., & Biekpe, N., (2017). "Environmental Degradation, ICT and Inclusive Development in Sub-Saharan Africa". *Energy Policy*, 111(December), pp. 353-361.
- Asongu, S. A., & Minkoua N. J. R., (2018). "Dynamic openness and finance in Africa", *The International Journal of Trade & Economic Development*, 27(4), pp. 409-430.
- Asongu, S. A., Nnanna, J., & Acha-Anyi, P. N., (2020). "Inequality and gender economic inclusion: The moderating role of financial access in Sub-Saharan Africa", *Economic Analysis and Policy*, 65(March), pp. 173-185.

- Asongu, S. A., Nnanna, J., Biekpe, N., & Acha-Anyi, P. N., (2019). “Contemporary drivers of global tourism: evidence from terrorism and peace factors”. *Journal of Travel & Tourism Marketing*, 36(3), pp. 345-357.
- Asongu, S. A., & Odhiambo, N. M., (2020a). “Insurance policy thresholds for economic growth in Africa”. *The European Journal of Development Research*, 32(3), pp. 672–689.
- Asongu, S. A., & Odhiambo, N. M., (2020b). foreign direct investment, information technology and economic growth dynamics in sub-Saharan Africa. *Telecommunications Policy*, 44(1), 101838.
- Asongu, S. A., & Odhiambo, N. M., (2020c). “How enhancing information and communication technology has affected inequality in Africa for sustainable development: An empirical investigation.” *Sustainable Development*, 27(4), pp. 647-656.
- Asongu, S. A., & Odhiambo, N. M., (2020d). “Inequality Thresholds, Governance and GenderEconomic Inclusion in sub-Saharan Africa”, *International Review of Applied Economics*,34(1), pp. 94-114.
- Asongu, S. A., & Odhiambo, N. M. (2021). “Inequality, finance and renewable energy consumption in Sub-Saharan Africa”, *Renewable Energy*, 165(Part 1), pp. 678-688.
- Bicaba, Z., Brixiova, Z., &Ncube, M., (2017). “Can Extreme Poverty in Sub-Saharan Africa be Eliminated by 2030?,” *Journal of African Development*, 19(2), pp. 93-110.
- Folarin, O., & Adeniyi, O., (2020). “Does Tourism Reduce Poverty in Sub-Saharan African Countries?” *Journal of Travel Research*, 59(1), pp. 140-155.
- Industrial Development Corporation “IDC”. (2018). Partnering for Inclusive Industrialisation. 2018 Integrated Report.
- Kingsbury, P. T. &Brunn, S. D., (2004). “Freud, Tourism, and Terror: Traversing the Fantasies of Post-September 11 Travel Magazines.” *Journal of Travel & Tourism Marketing*, 15(2-3),pp. 39-61.
- Khalid, U., Okafor, L.E. & Shafiullah, M. (2020). “The effects of economic and financial crises on international tourist flows: a cross-country analysis”. *Journal of Travel Research*, 59(2), 315-334.
- Liu, A. & Pratt, S. (2017). “Tourism's Vulnerability and Resilience to Terrorism.” *Tourism Management*, 60(June), pp. 404-417.
- Meniago, C., & Asongu, S. A., (2018). “Revisiting the Finance-Inequality Nexus in a Panel of African Countries”, *Research in International Business and Finance*, 46 (December), pp. 399-419.
- Nyasha, S., Odhiambo, N. M., & Asongu, S. A., (2020). “The Impact of Tourism Development on Economic Growth in Sub-Saharan Africa”, *The European Journal of Development Research*. DOI: 10.1057/s41287-020-00298-5.

- Odhiambo, N. M., (2020). “Financial development, income inequality and carbon emissions in sub-Saharan African countries: A panel data analysis”, *Energy Exploration & Exploitation*,38(5), pp. 1914-1931.
- Papatheodorou, A., Rosselló, J., & Honggen Xiao, R., (2010). “Global Economic Crisis and Tourism: Consequences and Perspectives.” *Journal of Travel Research*, 49 (1), pp. 39–45.
- Pizam, A. & Fleischer, A. (2002). “Severity versus Frequency of Acts of Terrorism: Which Has a Larger Impact on Tourism Demand?” *Journal of Travel Research*, 40(3),pp. 337-339.
- Pratt, S., & Liu, A. (2016). “Does tourism really lead to peace? A global view”. *International Journal of Tourism Research*, 18(1), pp. 82-90.
- Richter, L. K., & Waugh, W. L., Jr. (1986). “Terrorism and tourism as logical companions”. *Tourism Management*, 7(4), pp. 230-238.
- Robinson, M., (2015). “Why gender equality is key to sustainable development”, World Economic Forum. <https://www.weforum.org/agenda/2015/03/why-gender-equality-is-integral-to-sustainabledevelopment/> (Accessed: 02/01/2018).
- Roodman, D., (2009). “How to Do Xtabond2: An Introduction to Difference and System GMM in Stata.” *Stata Journal* 9(1), pp. 86–136.
- Saha, S. & Yap, G., (2014). “The Moderation Effects of Political Instability and Terrorism on Tourism Development.” *Journal of Travel Research*, 53(4), pp. 509-521.
- Signe, L. (2018). “Africa's Tourism Potential: Trends, Drivers, Opportunities, and Strategies”. *Africa's Growth Initiative, Brookings*.
- Sönmez, S. F. & Graefe, A. R. (1998). “Influence of Terrorism Risk on Foreign Tourism Decisions.” *Annals of Tourism Research*, 25(1),pp. 112-144.
- Tchamyou, V. S., (2020a). “Education, Lifelong learning, Inequality and Financial access: Evidence from African countries”. *Contemporary Social Science*, 15(1), pp. 7-25.
- Tchamyou, V. S., (2020b). “Financial access, governance and the persistence of inequality in Africa: Mechanisms and policy instruments”, *Journal of Public Affairs*, DOI: 10.1002/pa.2201.
- Tchamyou, V. S., (2019). “The Role of Information Sharing in Modulating the Effect of Financial Access on Inequality”. *Journal of African Business*, 20(3), pp. 317-338.
- Tchamyou, V. S., & Asongu, S. A., (2017). “Information Sharing and Financial Sector Development in Africa”, *Journal of African Business*, 18(7), pp. 24-49.
- Tchamyou, V. S., Asongu, S. A., & Odhiambo, N. M., (2019). “The role of ICT in modulating the effect of education and lifelong learning on income inequality and economic growth in Africa”, *African Development Review*, 31(3), pp. 261-274.
- Tchamyou, V.S., Erreygers, G., & Cassimon, D., (2019). “Inequality, ICT and Financial Access in Africa.” *Technological Forecasting and Social Change* 139 (February), pp. 169-184.

United Nations Conference on Trade and Development “UNCTAD”. (2013). Sustainable Tourism: Contribution to Economic Growth and Sustainable Development. *D/B/C.I/EM.5/2*.

United Nations Environment Programme “UNEP” (2011). “Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication – A Synthesis for Policy Makers”. UNEP. www.unep.org/greeneconomy (Accessed: 20/08/2020).

World Bank (2011). “Africa Region Tourism Strategy: Transformation through Tourism-Harnessing”. The World Bank, Washington.

World Travel & Tourism Council “WTTC” (2019). Travel & Tourism Economic Impact 2019. WTTC, London, U.K.