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A NEW INTUITION INTO TOURISM-INCLUSIVE GROWTH NEXUS IN TURKEY AND NIGERIA (1995 – 2018)

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ABSTRACT

This paper examines the symmetric and asymmetric causal relationships between tourism and inclusive growth in Turkey and Nigeria over the period 1995Q1-2018Q4. The study employs a bootstrap simulation method with leverage adjustments to achieve the objective of the study. The method is used to see whether positive or negative tourism shocks cause inclusive growth and whether positive or negative inclusive growth shocks cause tourism activity. The results show no evidence of asymmetric causality between tourism and inclusive growth, while there is evidence of symmetric causality running from tourism to inclusive growth in Turkey. On the other hand, there is neither symmetric nor asymmetric causal relationship between tourism and inclusive growth in Nigeria. In sum, both neutrality and tourism-led growth hypothesis hold in Turkey, while Nigeria gives credence to neutrality hypothesis. The recommendations coming from the findings are that the tourism sector in both countries, Nigeria in particular, should be repositioned for better performance and effectiveness in stimulating inclusive growth. Rather than focusing on pro-poor and micro-based tourism policies that favour selected communities and localities, tourism should be included in development plans nationally, in order to ensure wider participation and more encompassing trickle-down effects on the citizenry. Furthermore, both countries should implement policies that will stimulate their tourism sectors for a larger and more significant contribution to real GDP.

Keywords:
Asymmetric; Bootstrap simulation method; Inclusive growth; Symmetric; Tourism

JEL Classifications: L8, F43, O10, O50

INTRODUCTION

Tourism has been a widely discussed topic of discourse, with an ever-growing attention being focused on it. Tourism keeps garnering more and more attention among researchers due to its mostly, hugely positive and economy-wide effects on economic fortunes. Tourism is regarded as a tool for increasing government revenues through taxes, increasing GDP, boosting income through tourist arrivals, creating employment opportunities, and more importantly, developing other industries of an economy through its broad linkages with other sectors such as transport, technology and innovation (Yusuff & Ayinde, 2015; Osinubi & Osinubi, 2020). Beyond the dominant effect of tourism on cottage industries like food and accommodation, Phiri (2016) considered it to be a tool for strengthening multicultural peace and understanding. Tourism has been regarded as a safe haven in Less Developed Countries (LDCs) with dire economic states (Bakker & Messerli, 2017) and emerging economies, providing some respite and succour in light of unfavorable economic state of affairs (Hatemi-J *et al.,* 2014).

The number of international tourists keeps rising, with the World Trade Organization noting a 4.4% increment in 2013, totaling 1,135 million worldwide tourists, while in 2019, the number rose to 2.28 billion (World Tourism Organization, 2015; World Bank, 2020). The oft-mentioned belief that tourism leads to improved economic performance and subsequently, economic growth is a common thread in the literature. Tourism-led growth hypothesis (TLGH), being a corollary of the export-led growth hypothesis (ELGH) (Cortes-Jimenez & Pulina, 2006), puts forward the belief that tourism exports are key drivers of economic growth. In the view of Hatemi-J *et al.,* (2014), raising efficiency through competition between local and foreign sectors and economies of scale are the 2 ways in which tourism contributes to economic growth. This is synonymous to the submission of Ajani and Kalu (2017) that tourism can lead to improved macroeconomic performance for a nation. Furthermore, tourism contributes to a rise in GDP through resource allocation (Brida, Lanzilotta & Pizzolon, 2016), furthering economic growth (Bakker & Messerli, 2017) and more competitiveness in the sector (Dritsakis, 2012). According to Eyuboglu and Eyuboglu (2019), 7% of the world's total export volume could be attributed to the tourism sector, making the sector a driving force of the world economy. The economic impact of tourism to various countries has been lauded in the literature, and the sector is regarded as a significant contributor to economic growth in the face of adverse economic fortunes (Yusuff & Ayinde, 2015). Ertugrul and Mangir (2012) are effusive in their acclaim for the tourism industry, highlighting numerous ways in which the sector helps propel economic growth – foreign exchange inflows, spurring competition through new investment in infrastructure, providing positive economies of scale, increased employment and income, diffusion of skills and technology in addition to spillover effects on other industries either through directly, indirectly or induced means.

Tourism, however, though well established and thriving in More Developed Countries (MDCs), has yet to hit its full potential in MINT countries. MINT countries are an agglomeration of Mexico, Indonesia, Nigeria and Turkey; and are so-called due to their vast demographic and economic similarities such as having speedily growing and emerging economies, burgeoning populations, high labour force figures, single-digit growth rates, significant poverty levels and reliance on western technology (Durotoye, 2014; Kokotovic & Kurecic, 2016; Olomola & Osinubi, 2018; Osinubi, 2020a; 2020b; Osinubi & Olomola, 2020a; 2020b). Osinubi (2020a) and Ajani and Kalu (2017) submit that strong economic growth and greater returns on investment are expected of MINT countries within the next decade.

Despite these countries having innumerable attractions and sites which constitute a vast potential for tourism, tourism has not hit the expected heights due to institutional problems, corruption, political instability, terrorism and structural constraints. Mexico has been affected by problems of insecurity, especially by incessant drug wars as a result of various factions fighting for control of the

narcotics trade, and the inability of the police to deal effectively with the conundrum (Durotoye, 2014). Indonesia has suffered from being a multi-ethnic and multi-religious nation, as this has led to frequent clashes and bombings. Moreover, inadequate infrastructure has hindered tourism. Nigeria is hounded by being a mono-product economy, as economic activities and income majorly revolves around oil, while Turkey has been the subject of reduced tourist arrivals, due to her war-torn and besieged neighbour country, Syria.

Notwithstanding, tourism in MINT nations has progressed at various paces, with Turkey ahead of the pack in tourism performance and Nigeria faring the worst. From Figure 1, Turkey has fared significantly better than Nigeria in attracting international tourists. Between 2005 and 2010, Nigeria experienced a slight surge in international tourist arrivals, but this returned to the steadily rising trend.

The rapid surge in international tourist arrivals from 12.8 million in 2002 to a whopping 39.7 million people in 2013 to 46.1 million in 2018 and 51.8 million in 2019 has seen Turkey listed among the top 10 destinations in the world for tourists, according to Terzi (2015). IsikMaden *et al.* (2019), report that Turkey ranked 6th among the most visited nations in the world in 2013 and in spite of the fall in international tourist arrivals in 2016 due to the Turkey-Russia Jet Crisis and the coup attempt, the Turkey Tourism Policy 2023 paints a positive future for the industry, with an anticipated 63 million tourists expected, $86 billion foreign tourism income and $1,350 average revenue per tourist. Nigeria however, has seen tourism fail to rapidly surge due to several factors. The beleaguered sector has suffered from corruption, infrastructural deficiencies, insurgency, weak and ineffective government policies and reduced attention given to tourism (Adewale, 2011; Rotimi *et al.,* 2013; Ayeni, 2013). According to Yusuff and Ayinde (2015), tourism contribution to Nigeria's GDP has been meager, with the figure steadily dropping from 4.9% in 2005 to 2.7% in 2014. However, they point to an expected growth rate of 6.1% annually from 2014 to 2020 it seems better to update figures.

While the relationship between tourism and economic growth has been well detailed, much attention has not been paid to the relationship between inclusive growth and tourism. Inclusive growth refers to economic growth that encompasses the larger proportion of an economy's labour force as regards both the participation and benefits. Ranieri and Ramos (2013) aim to make a distinction between inclusive growth and pro-poor growth. Though both concepts are related due to the generality of their goals, which is to reduce both poverty and income inequality. In their specificity lies the difference between them, as pro-poor growth focuses on lifting those below the poverty gap out of the clutches of poverty. However, inclusive growth is centered on growth being beneficial to all income echelons. Bakker and Messerli (2017) see it as economic widening and reduction of the most disadvantaged in an economy not through income redistribution, but through increased productive opportunities. In an approach not far off, Osinubi and Osinubi (2020) view it as growth that aids in equal distribution of economic benefits. According to Ali and Son (2007), inclusive growth is defined in terms of "social opportunities," which refers to average opportunities available to people and how it can be shared. Inclusive growth exceeds mere distribution of income, but greater participation in GDP creation.

Turkey fares considerably better than Nigeria, and based on this index of development, can be said to be on a higher development trajectory than Nigeria, as she has a higher inclusive growth level than the West African nation (see Figure 2).
Though tourism is viewed as a tool out of economic downturn, Bakker and Messerli (2017) argue that this pro-poor tourism approach should be scrapped in favour of tourism-driven inclusive growth, which is more economy-wide in nature, as it includes a nation's general inclusive growth policy. This belief emanates from the idea that beyond improving economic fortunes, tourism is meant to serve a higher function, which comprises reducing marginalization in an economy, since economic growth could be hazardous when not inclusive, thus worsening income inequality. Osinubi and

Osinubi (2020) and Bakker and Messerli (2017) agree that tourism-driven inclusive growth has the potential to create an enabling environment for tourism to flourish.

Figure 3 details the wide gap between tourism in Nigeria and inclusive growth. Inclusive growth has experienced slower growth than tourism. Despite the belief that tourism-led growth is beneficial for economic growth in developing and emerging economies, it has not been enjoyed by the Nigerian populace. Turkey does not fare better than Nigeria in the same regard as shown in Figure 4, with the Eurasian country also experiencing a significant chasm between tourist arrivals and inclusive growth. Though Turkey fares better in terms of tourist arrivals, the country also struggles with raising inclusive growth levels.

Figure 1. Tourist arrivals in Nigeria & Turkey

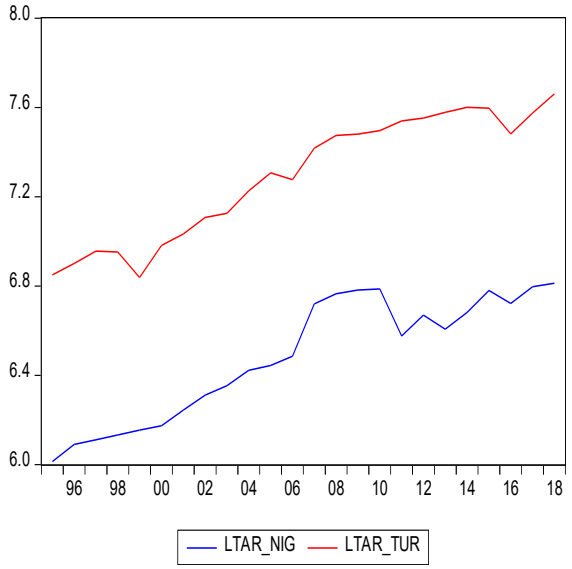
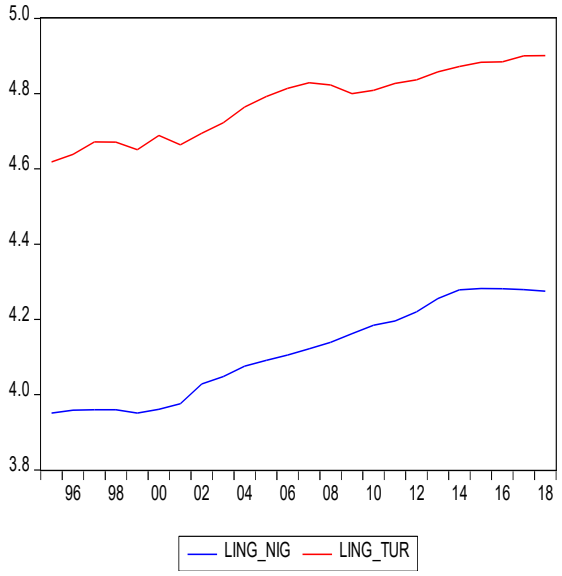


Figure 2. Inclusive growth in Nigeria & Turkey



Source: Authors' Computations

Figure 3. Inclusive growth & tourism in Nigeria

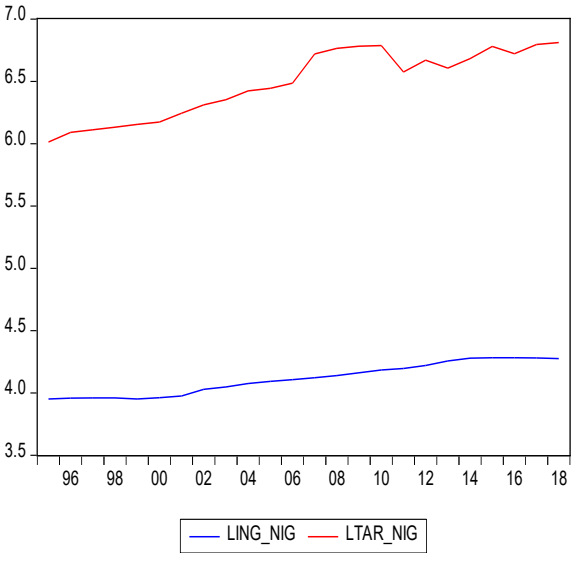
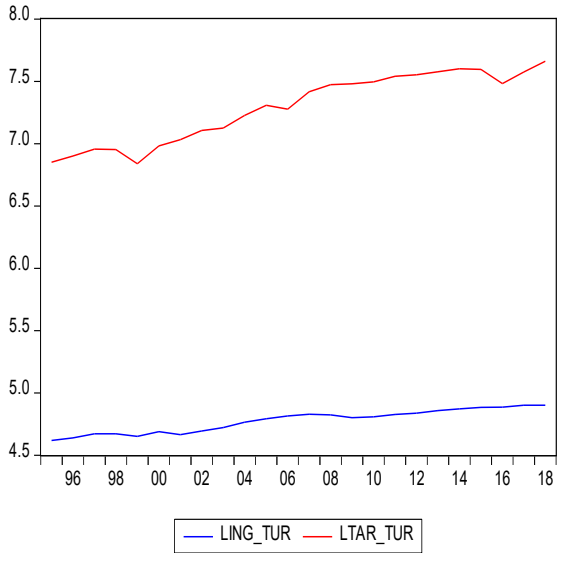


Figure 4. Inclusive growth & tourism in Turkey



Source: Authors' Computations

Having established the link between tourism and economic growth and the added merits of inclusive

growth on tourism, this study contributes to the existing body of knowledge on the tourism discourse in three distinct manners. Firstly, regarding the tourism-growth nexus, this piece of research goes further by examining the relationship between inclusive growth and tourism, as opposed to the more common tourism and economic growth studies. Furthermore, as opposed to studying this relationship in all the MINT countries, Nigeria and Turkey have been selected. This is due to the fact that both countries are at opposite rungs of the tourism ladder, with Turkey recording superior figures in international tourist arrivals and tourism receipts and Nigeria having the least among the MINT nations. Given the fact that though the tourism sectors in both nations are at different development levels, massive potential exists for more contribution of the sector to the GDP of both countries, and as such, this sector is particularly important to these countries in terms of earning foreign exchange along their development paths and thereby financing their development process.

Lastly, following the work of Osinubi and Osinubi (2020) in studying the causal relationship between inclusive growth and tourism, this paper is a corollary to that; in that the asymmetric causal relationships which examine shocks of variables would be studied. Simply put, this study would examine whether negative tourism shocks would lead to negative and positive inclusive growth and whether positive tourism shocks would likewise result in positive and inclusive growth shocks along with the symmetric causal relationships. This becomes important because of the asymmetries in the variables (tourism and inclusive growth) as shown in sub-section 3.3. Also, Hatemi-J *et al.* (2014) point to the importance of accounting for asymmetric impacts because literature has revealed that economic agents respond more to negative shocks than positive shocks in absolute term. In addition, Eyuboglu and Eyuboglu (2019) put forward that asymmetric test has an advantage over the symmetric test by removing the possibility of assumptions regarding the effect of shocks. This has the effect of increasing the reliability of results gotten from analysis, and can thus lead to more appropriate policy recommendations. This argument also comes from the works of Kumar *et al.* (2020) and Hatemi-J *et al.* (2014).
As earlier stated, the previously published papers do not adopt inclusive growth in carrying out their analysis. Other measures of growth such as tourism contribution to GDP (Zoturk, 2009), GDP growth (IsikMaden *et al.*, 2019; Zumba *et al.*, 2019), real GDP (Ertugrul & Mangir, 2012) and GDP per capita (Eyuboglu & Eyuboglu, 2019) are used to examine the effect of tourism in their studies. Inclusive growth is arguably a better measure to determine the impact of tourism on an economy, as it shows a degree of fairness in the distribution of income resulting from economic growth. Lastly, this is the first study that adopts the asymmetric causality approach in studying tourism-inclusive growth nexus for Nigeria.

The rest of this paper is structured as follows: section 2 comprises the literature review, section 3 examines the methodology used in carrying out empirical analysis, the results are given in section 4, while section 5 rounds off the study with a conclusion and recommendations.

1. REVIEW OF EXISTING STUDIES

From the literature, various inferences have been drawn from the tourism-economic growth nexus as a result of various regions examined, be it in form of a single nation, a cross-sectional study of a wide range of countries, diverse categorizations (such as OECD, MINT & G-7), variables chosen, various estimation techniques applied and different data sets. Regardless of these distinctions, results emanating from the tourism-economic growth nexus revolve around similar trains of thought, and subsequently, 4 hypotheses can be drawn from the literature. They are the growth hypothesis, the conservation hypothesis, the feedback hypothesis and the neutrality hypothesis.
The growth hypothesis points to the idea that tourism is a driver of economic growth. In other words, rise in a nation's GDP is powered by increased tourism activities. Understandably, due to the aforementioned largely positive effects of tourism to national growth and development, a significant bulk of the literature is in tune with this hypothesis (Hatemi-J *et al.*, 2014; Terzi, 2015; Jackman,

2012; Cortes-Jimenez & Pulina, 2006; IsikMaden *et al.*, 2019; Atan & Arslanturk, 2012; Yusuff & Ayinde, 2015; Eyuboglu & Eyuboglu, 2019; Phiri, 2016; Muhtaseb & Daoud, 2017; Young, 2020; Govdeli & Direcki, 2017; Zumba *et al.*, 2019; Azeez, 2019; Zoturk, 2009; Ovat, 2003; Ertugrul & Mangir, 2012). Commonly referred to as TLGH (Tourism-Led Growth Hypothesis), this seems to be the most common thread in the literature. This is unsurprising due to the massive effects of tourism to a country in from of direct, indirect or induced means.

When the opposite relationship ensues, that is, when there is a single unidirectional causation running from economic growth to tourism, this is dubbed a conservation hypothesis. Several papers lay claim to this hypothesis, with their findings exhibiting a direct relationship between economic growth and tourism activities (Jackman & Lorde, 2012; Zumba *et al.*, 2019; Hatemi-J *et al.*, 2014; Phiri, 2016).

While not as popular as the TLGH, the growth-led hypothesis claims that an upsurge in economic growth trickles down to all arms of the economy, with the tourism industry being no exception. A feedback hypothesis occurs when a 2-way causality exists between tourism and economic growth, with either variable capable of being a causative factor. Simply put, spikes or changes in tourism activities result in changes in economic growth, and at the same time, shifts in the level of a nation's GDP have a resultant effect on tourism as well (Cortes-Jimenez & Pulina, 2006; Zumba *et al.*, 2019; Dritsakis, 2012, Phiri, 2016; Muhtaseb & Daoud, 2017).

Finally, some papers posit that no relationship can be found between tourism and economic growth. This neutrality hypothesis opines that changes in economic growth are independent of going-on in the tourism sector. This is evident in the work of Georgantopoulos (2013), Phiri (2016), Katircioglu (2009), Ozturk and Acaravci (2009), Eyuboglu and Eyuboglu (2019) and Hatemi-J *et al.*, (2014).

Given the significantly acclaimed benefits tourism confers an economy with, notably in the aspect of economic growth, studies carried out across various nations point to a largely favorable performance of the sector in propelling economic fortunes, regardless of the level of income and development of the country. In LDCs, this nexus is more positive, as tourism provides respite amidst the precarious and delicate economic states several less developed countries are in.

Brida *et al.* (2016), aimed to examine the tourism-economic growth nexus in 2 MERCOSUR countries (Argentina and Brazil) from a nonlinear approach. MERCOSUR is a political and economic bloc comprising Argentina, Brazil, Paraguay, Uruguay and Venezuela. In the case of Brazil, cointegration exists between tourist expenditures and per capita income. However, for Argentina, the relationship could not be modeled using the methodology adopted by the authors. Their M-TAR adjustment mechanism could not describe this nonlinearity properly.

Cortes-Jimenez and Pulina (2006) carried out a Granger causality test in Spain and Italy in order to ascertain if exports and tourism have contributed to growth in both nations, by way of ELGH and TLGH. Their work particularly emphasizes the belief that the TLGH is borne out of ELGH, and finds that not only does export have a positive long-term relationship with economic growth for both countries; heightened tourism in Italy and Spain results in higher GDP in the short term and a feedback effect for Spain in the long run also. However, despite Hatemi-J *et al.* (2014) acknowledging the important role tourism plays in stimulating economic development, their asymmetric panel causality test of the G-7 finds no validity for the TLGH given that positive shocks in tourism do not cause positive shocks in economic growth. They propose that a possible reason for this can be attributed to the vastly developed and diversified economies G-7 nations possess. Subsequently, their dependence on tourism is relatively low as it constitutes as fraction of their economies. Contrarily, the conservative hypothesis holds for some of the G-7 nations. This result lines up with Hatemi-J *et al.* (2016), as they submit that a relationship exists between tourism and economic growth in all the

G-7 countries except for Canada. Though TLGH holds in France, US and Germany in a symmetric form and in Italy, US, UK and Germany in an asymmetric manner, emphasis should not be put on the impact of tourism to the economic growth of these countries due to their expansively diversified nature.

In Africa, several papers have attempted to empirically verify if TLGH holds true. Zumba *et al.*, 2019; finds tourism indispensable for the totality of Africa, in their study to establish how tourism impacts on economic growth in both the short-term and long-term. Symmetric panel ARDL and Granger non-causality test shows that a feedback hypothesis exists between tourism and economic growth in North, East and Central Africa, while tourism assumes the position of the driven and the driver in West Africa and North Africa respectively. On balance, their research finds tourism to be highly favorable for the economic performance of African nations. This result is synonymous with existing literature; given many North African nations such as Tunisia, Egypt and Morocco have relatively thriving tourism industries compared to their West African counterparts (Azeez, 2019). Azeez (2019) examines the relationship between GDP and tourism receipts in 4 North African nations – Algeria, Egypt, Morocco and Tunisia. He finds a hugely positive effect of tourism receipts in spurring the national incomes of Algeria, Morocco and Tunisia in spite of previous waves of terrorism, particularly in Tunisia and Egypt. Results from the Pooled Mean Group show that tourism has the potential to drive economic growth up by 6% in the short run and by 29% in the long run.

Certain studies examined Nigeria, with the results being unanimous among the various authors. Ovat (2003), Yusuff and Ayinde (2015) and Young (2020) arrive at the same conclusion regarding the TLGH in the West African country. Beyond confirming the positive impact of tourism on Nigeria's economic growth, they forecast the sector to be a key contributor to the Nigerian economy in the next couple of years. In Turkey, all the papers present a growth hypothesis for tourism (Terzi, 2015; Atan & Arslanturk, 2012; Ertugrul & Mangir, 2012; Zoturk, 2009; IsikMaden *et al.*, 2019), with the exception of Ozturk and Acaravci (2009) and Katircioglu (2009) who posit a neutrality hypothesis for tourism in the country.

As Bakker and Messerli (2017) succinctly put it, tourism-driven inclusive growth focuses on the use of tourism not just to raise national income, but as a potent tool to eradicate poverty and reduce the poverty gap. This study contributes to the knowledge in that growing school of thought. Furthermore, this study finds its uniqueness in the fact that beyond examining the relationship between tourism and inclusive growth as opposed to the more commonly used economic growth; it adopts an asymmetric causality methodology to empirically verify the relationship. Although Kumar *et al.* (2020) and Hatemi-J *et al.* (2014) use this method also, their research focus on tourism activity and economic performance, and not inclusive growth. The asymmetric causality aims to scrutinize shocks of variables and ascertain if a negative shock in an independent variable leads to a corresponding negative shock in the dependent variable as well and ditto for the positive shocks.

Though Bakker and Messerli (2017) and more recently, Osinubi and Osinubi (2020) examine the tourism-inclusive growth relation, no asymmetric causality was detailed, with the former adopting empirical analysis to discuss the broad relationship and mostly, effects of inclusive growth on tourism. The latter looks into the direction of the relationship between the 2 variables using Toda-Yamamoto Granger Causality. Hampton, Hampton *et al.* (2018), using semi-structured interviews, study the effect of tourism in raising inclusive growth in Ha Long Bay Vietnam, and arrive at the conclusion that tourism leads to social and economic linkages in particular, driving up standard of living of local residents. However, no empirical test is carried out to ascertain the causal relationship between tourism and inclusive growth, particularly in Nigeria. Following the work of Osinubi and Osinubi (2020), this paper goes a step further by examining the directions of the shocks of both variables.

Table 1. Literature Matrix

S/N	Author(s)	Country	Scope	Methodology	Causal Relation
1.	Hatemi-J *et al.* (2014)	G-7	1995 – 2012	Asymmetric panel causality test	TLGH, GLTH, FEBH & NEUH
2.	Phiri (2016)	South Africa	1994 – 2014	Engle & Granger linear cointegration framework, Ender & Granger non-linear cointegration framework	TLGH, GLTH, FEBH & NEUH
3.	Muhtaseb & Daoud (2017)	Jordan	1998 – 2015	Engle & Granger linear cointegration framework, nonlinear framework of Enders & Siklos cointegration test	TLGH & NEUH
4.	Kumar *et al.* (2020)	Cook Islands	2010 – 2016	NARDL cointegration and causality tests	FEBH
5.	Azeez (2019)	Algeria, Egypt, Morocco and Tunisia	1995 – 2016	Pooled Mean Group estimator (PMG), Autoregressive Distributed Lag (ARDL)	TLGH
6.	Osinubi & Osinubi (2020)	Nigeria	1995 – 2018	Toda-Yamamoto Granger Causality Test	TLGH & NEUH
7.	Terzi (2015)	Turkey	1963 – 2015	Pairwise Granger Causality, unrestricted VAR & Toda-Yamamoto VAR analysis	TLGH
8.	Katircioglu (2009)	Turkey	1990 – 2006	Bounds test	NEUH
9.	Young (2020)	Nigeria	1995 – 2019	Bounds test, Toda-Yamamoto & Dolado-Lutkepohl causality tests	TLGH
10.	Eyuboglu & Eyuboglu (2019)	9 emerging economies	1995 – 2016	Seemingly Unrelated Regression (SUR)	TLGH & NEUH
11.	Atan & Arslanturk (2012)	Turkey	2002	Input-Output Analysis	TLGH
12.	Zumba *et al.* (2019)	Africa	1995 – 2016	Symmetric panel ARDL & Granger non-causality test	TLGH, GLTH & FEBH
13.	Zoturk (2009)	Turkey	1990 – 2008	Granger Causality test, Vector Error Correction Model (VECM)	TLGH
14.	Jackson & Lorde (2012)	Barbados	1975 – 2010	Granger Causality	GLTH
15.	Yusuff & Ayinde (2015)	Nigeria	1995 – 2013	VEC estimates, VECM Granger Causality	TLGH
16.	Ertugrul & Mangir (2012)	Turkey	1998 – 2011	Bounds test, Granger Causality analysis, ARDL	TLGH
17.	Ozturk & Acaravci (2009)	Turkey	1987 – 2007	VECM, ARDL	NEUH
18.	Cortes-Jimenez & Pulina (2006)	Spain and Italy	1964 – 2000 (Spain) 1954 – 2000 (Italy)	Multivariate Granger Causality	TLGH & FEBH
19.	Govdeli & Direkci (2017)	34 OECD countries	1997 – 2012	Panel cointegration test, Pedroni & Kao cointegration test	TLGH
20.	Georgantopoulos (2013)	India	1988 – 2011	Trivariate model, VAR model, VECM	TLGH, FEBH & NEUH
21.	IsikMaden *et al.* (2019)	Turkey	1980 – 2016	Error correction factor, ARDL	TLGH
22.	Dritsakis (2012)	7 Mediterranean countries	1980 – 2007	Heterogeneous panel cointegration technique, Fully Modified Ordinary Least Squares (FMOLS)	TLGH
23.	Hatemi-J *et al.* (2018)	G-7	1995 – 2014	Symmetric and asymmetric panel causality tests	TLGH & NEUH

Note: TLGH is Tourism-led growth hypothesis. GLTH is Growth-led tourism hypothesis. FEBH is Feedback hypothesis. NEUH is Neutrality hypothesis.

Source: Authors' Compilations

2. METHODOLOGY

This section describes the data employed, model specification, estimation technique and decomposition of inclusive growth and tourism into positive and negative shocks.

2.1. DESCRIPTION OF DATA

The study employs annual data between 1995 and 2018 on variable of interest in Nigeria and Turkey. Using quadratic match-sum approach, the annual frequency data are transformed into quarterly frequency data (1995Q1 to 2018Q4) to increase the sample size given the relatively small sample size (see also Osinubi & Osinubi, 2020; Phiri, 2016). The data are derived from the online edition of the World Bank's World Development indicators (WDI, 2020) and they include international tourist arrivals (TOA), international tourism expenditures (TOE) in current US$, international tourism receipts (TOR) in current US$, and GDP (Gross Domestic Product) per person employed in constant 2017 PPP US$ (ING) measuring inclusive growth. Notably, this measure of inclusive growth is employed because it is incorporated in the social opportunity function and it measures productive employment (Ayinde & Yinusa, 2016). Since inclusive growth helps in lowering poverty, inequality, and unemployment, the expectation is that these three outcomes of inclusive growth will reduce if a person is gainfully employed (Osinubi & Osinubi, 2020; Ibukun & Aremo, 2017). All the variables are used in their logarithmic forms to ensure uniformity. The study interpolates for missing data in Nigeria in 2004 for TOE and 2017-2018 for TOA. Following the purpose of this study, an index, Tourism activity index (TOI), is generated from the three measures of tourism (TOA, TOE and TOR) using a principal component analysis (PCA). Thus, TOI measures tourism development, while ING measures inclusive growth in Mexico and Turkey. The two countries are selected because (i) both countries belong to MINT (Mexico, Indonesia, Nigeria and Turkey) countries as classified as emerging economies according to Jim O'Neil of Goldman Sachs in 2004 (Osinubi & Olomola, 2020a) and (ii) Nigeria has the lowest TOA, while turkey has the highest TOA among the MINT countries. The variables are described in Table 2.

Table 2. Data Explanation

Variable	Representation	Measurement	Source
Inclusive Growth	ING	GDP per person employed (constant 2017 PPP $)	WDI (2020)
Tourist Arrivals	TOA	International tourism, number of arrivals	WDI (2020)
Tourism Expenditures	TOR	International tourism, expenditures (current US$)	WDI (2020)
Tourism Receipts	TOR	International tourism, receipts (current US$)	WDI (2020)
Tourism Activity Index	TOI	Index generated from TOA, TOR, TOI using PCA	WDI (2020)

Source: Authors' Compilations

2.1.1. COMPUTING TOURISM ACTIVITY INDEX AND CORRELATION ANALYSIS

The principal component analysis (PCA) is used to generate the tourism activity index. This computational method converts various variables into an index using important information about these variables without losing too much information (check Osinubi & Osinubi, 2020; Osinubi, 2020a). As revealed by Osinubi and Osinubi (2020), tourism activity index (TOI) is a weighted

index of TOA, TOE and TOR as shown in Table 3. The study uses the first principal components (PC1) in Nigeria and Turkey to produce the index. The explanation for this is that the PC1 has an eigenvalue that is higher than 1 and it explains the index variations in both countries by more than 80 per cent. Thus, following Kaiser (1974), the study does not use both the second (PC2) and third principal components (PC3) to obtain the TOI. The correlation results in Table 4 show that all tourism indicators (TOA, TOE and TOR) are highly correlated with a coefficient value above 60%. This supports why we employ an index generated from all the indicators of tourism.

Table 3. Results of the Principal Component Analysis

Country	PC	EGV	PPC	Factor loadings		
				TOA	TOE	TOR
Nigeria	PC1	2.55	0.85	0.61	0.55	0.57
	PC2	0.38	0.13	-0.06	0.74	-0.68
	PC3	0.07	0.04	-0.79	0.38	0.49
Turkey	PC1	2.91	0.97	0.58	0.57	0.58
	PC2	0.09	0.03	-0.47	0.82	-0.33
	PC3	0.01	0.003	0.66	0.09	-0.74

Note: PC-Principal Components. PC1, PC2 and PC3-first, second and third Principal Components. EGV-Eigen Values. PPC- Proportion Explained by PC. TOA-Tourism Arrivals. TOE-Tourism Expenditures. TOR-Tourism Receipts. Eigenvalues: (Sum=3, Average=1)

Source: Authors' Computations

Table 4. Results of the Correlation Analysis

	Nigeria			Turkey		
Variable	TOA	TOE	TOR	TOA	TOE	TOR
TOA	1.00	0.83	0.87	1.00	0.93	0.99
TOE		1.00	0.62		1.00	0.94
TOR			1.00			1.00

Source: Authors' Computations

2.2. MODEL SPECIFICATION

In line with Hatemi-J (2012), this study explores the asymmetric causality between inclusive growth and tourism in Nigeria and Turkey. By doing so, the variables of interest are converted into cumulative positive and negative changes, that is to say asymmetric changes. The reason for this is that both positive and negative shocks to a variable can have different impacts on another variable (Olaniyi, 2020, Hatemi-J, 2012). Moreover, according to Hatemi-J (2012), the existence of an asymmetric information phenomenon calls for asymmetric analysis. A bootstrap simulation methodology with modifications to the leverage can be used to generate more accurate critical values. This method is considered reasonable as it depends on the underlying data set being empirically distributed, and does not automatically have to obey a normal distribution. Following Hatemi-J (2012), the study of the causal relationship between inclusive growth (ING_{1t}) and tourism (TOI_{1t}) follows random walk processes as follows:

$$ING_t = ING_{t-1} + \varepsilon_t = ING_0 + \sum_{i=1}^{t} \varepsilon_i \qquad (1)$$

$$TOI_t = TOI_{t-1} + \mu_t = TOI_0 + \sum_{i=1}^{t} \mu_i \quad (2)$$

where $t = 1,2,\ldots..,T.ING_0$ and TOI_0, are the previous values representing intercepts. ε_i and μ_i denotes the error terms. $\varepsilon_i^+ = \max(\varepsilon_i, 0)\ and\ \mu_i^+ = \max(\mu_i, 0)$ are the positive shocks, while $\varepsilon_i^- = \min(\varepsilon_i, 0)\ and \mu_i^- = \min(\mu_i, 0)$ are the negative shocks of inclusive growth and tourism, respectively. Therefore, $\varepsilon_i = \varepsilon_i^+ + \varepsilon_i^-$ and $\mu_i = \mu_i^+ + \mu_i^-$. As seen in equations (3) and (4), equations (1) and (2) are further re-specified by substituting for ε_i and μ_i.

$$ING_t = ING_{t-1} + \varepsilon_t = ING_0 + \sum_{i=1}^{t} \varepsilon_i^+ + \sum_{i=1}^{t} \varepsilon_i^- \quad (3)$$

$$TOI_t = TOI_{t-1} + \mu_t = TOI_0 + \sum_{i=1}^{t} \mu_i^+ + \sum_{i=1}^{t} \mu_i^- \quad (4)$$

The cumulative forms of ING's and TOI's positive and negative shocks are given as follows:

$$ING_t^+ = \sum_{i=1}^{t} \varepsilon_i^+ \ and \ \ ING_t^- = \sum_{i=1}^{t} \varepsilon_i^- ; \ \ TOI_t^+ = \sum_{i=1}^{t} \mu_i^+ \ and \ TOI_t^- = \sum_{i=1}^{t} \mu_i^-$$

Most notably, each of positive and negative shock has an irreversible impact on the underlying variable. What to do next is to examine the causal relationship between these components. The emphasis here is to construct the model to examine only the causal link between positive cumulative shocks (ING_t^+, TOI_t^+). Thus, given the positive cumulative shocks, the following vector autoregressive model of order m, VAR (m), can be employed:

$$\begin{bmatrix} ING_t^+ \\ TOI_t^+ \end{bmatrix} = \begin{bmatrix} \infty_0 \\ \pi_0 \end{bmatrix} + \begin{bmatrix} \sum_{k=1}^{m} \infty_{1k} & \sum_{k=1}^{m} \infty_{2k} \\ \sum_{k=1}^{m} \pi_{1k} & \sum_{k=1}^{m} \pi_{2k} \end{bmatrix} \times \begin{bmatrix} ING_{t-k}^+ \\ TOI_{t-k}^+ \end{bmatrix} + \begin{bmatrix} \varepsilon_t^+ \\ \mu_t^+ \end{bmatrix} \quad (5)$$

where ∞_0 and π_0 are the constant term. $\infty's$ and $\pi's$ denote the estimated parameters in the VAR model. The error terms are ε_t and μ_t. The positive shocks in inclusive growth$(ING_t^+)$and tourism (TOI_t^+)at time t can be defined as periods of growth in inclusive growth and tourism, respectively, while the negative shocks in inclusive growth (ING_t^-)**and tourism** (TOI_t^-)at time *t* are explained as periods of decline. Given the principles of Hatemi-J (2012), Schoderet (2003) and Granger and Yoon (2002), these negative and positive shocks in inclusive growth and tourism are generated. In practice, the decomposition of data into components of positive and negative shocks is done through the GAUSS codes given by Hatemi-J (2014b).

A further unrestricted lag is included in the VAR model in equation (5), as suggested by Toda and Yamamoto (1995) and Hatemi-J (2012) in order to incorporate the unit root process. The study uses an innovative lag-based Hatemi-J Information Criterion which is expressed as follows when selecting the optimal lag:

$$\text{HJC} = \text{In}\left(\left|\hat{ß}_k\right|\right) + k\left(\frac{n^2 InT + 2n^2 In(InT)}{2T}\right), \quad k = 0, \ldots \ldots \ldots, m. \quad (6)$$

$\left|\hat{ß}_k\right|$ is the determinant in the VAR model as presented in equation (5) of the estimated variance-covariance matrix of the error terms with lag order m. n is the number of equations in the VAR

model. *T* denotes the number of observations. The null hypotheses that TOI_t^+ does not cause ING_t^+ and vice-versa are expressed as follows:

$$H_0: \infty_{2k} = 0, \forall k, where\ k = 1, \dots\dots\dots\dots, m \quad (7)$$

and

$$H_0: \pi_{1k} = 0, \forall k, where\ k = 1, \dots\dots\dots\dots, m \quad (8)$$

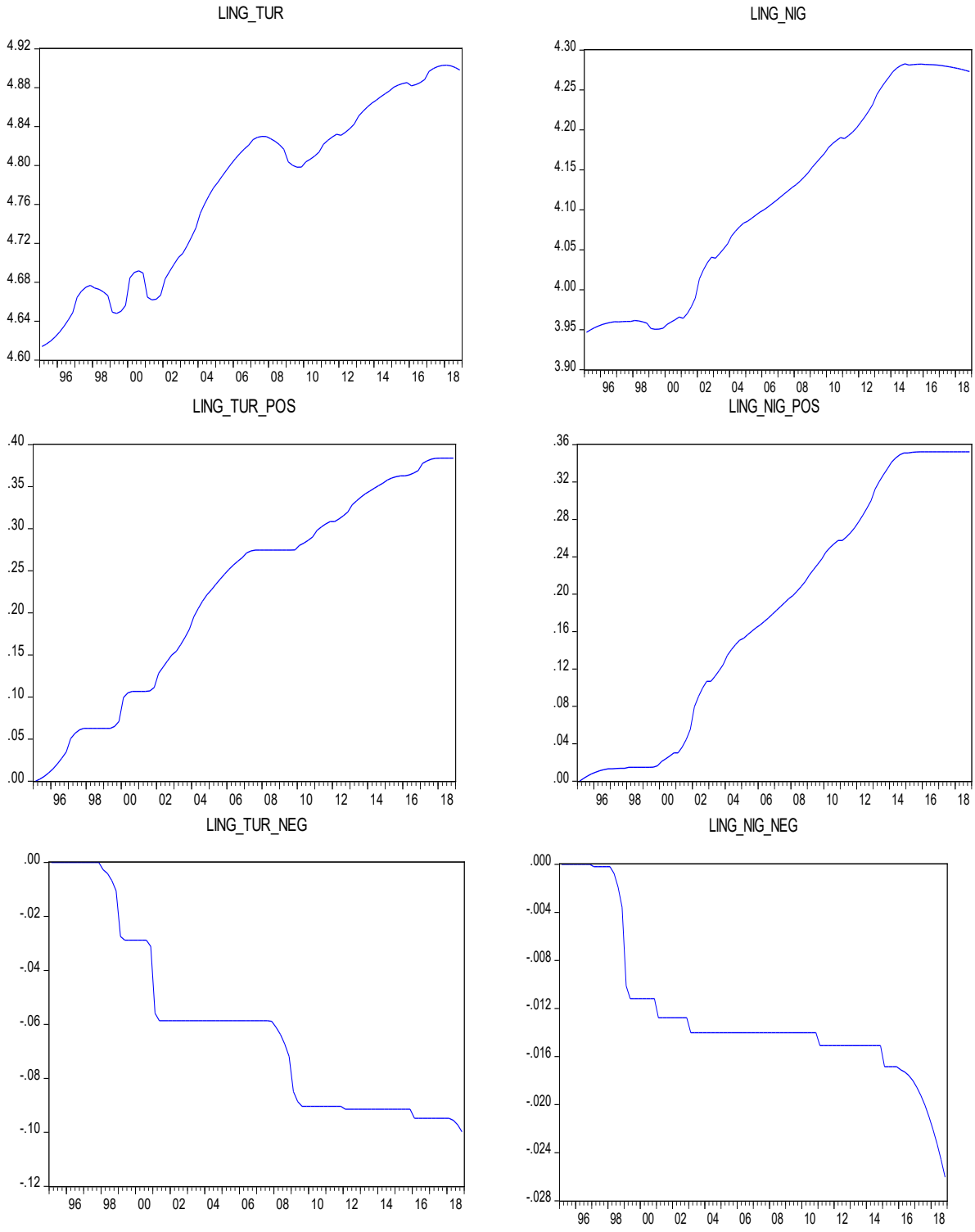
Following the studies of Hatemi-J (2012) and Hatemi-J and El-Khatib (2016), the above null hypotheses are tested using the updated Wald test, which is compared to the bootstrap critical values. Causality is assumed when at the conventional level, the Wald test statistic is above the bootstrap critical values. Otherwise, it accepts the null hypothesis of no causality. The Wald test statistic and critical values at 1 percent, 5 percent, and 10 percent are obtained with 10,000 iterations in GAUSS codes provided by Hacker and Hatemi-J (2010) through a bootstrap simulation approach (see Olaniyi, 2020).

Apart from the combination (ING_t^+, TOI_t^+) included in equation (5), all other possible combinations of testing asymmetric causality testing are also included. These combinations include $(ING_t^-, TOI_t^-), (ING_t^+, TOI_t^-)\ and\ (ING_t^-, TOI_t^+)$. Likewise, in the context of the same bootstrap simulation process, the combination for symmetric causality testing $[ING_t, TOI_t]$ is explored. It is worthy of note that all the models are applicable to both Nigeria and Turkey. All the models are tested specifically for Nigeria and Turkey based on country-specific research.

2.3. DECOMPOSITION OF INCLUSIVE GROWTH (ING) AND TOURISM ACTIVITY INDEX TOI INTO POSITIVE AND NEGATIVE SHOCKS

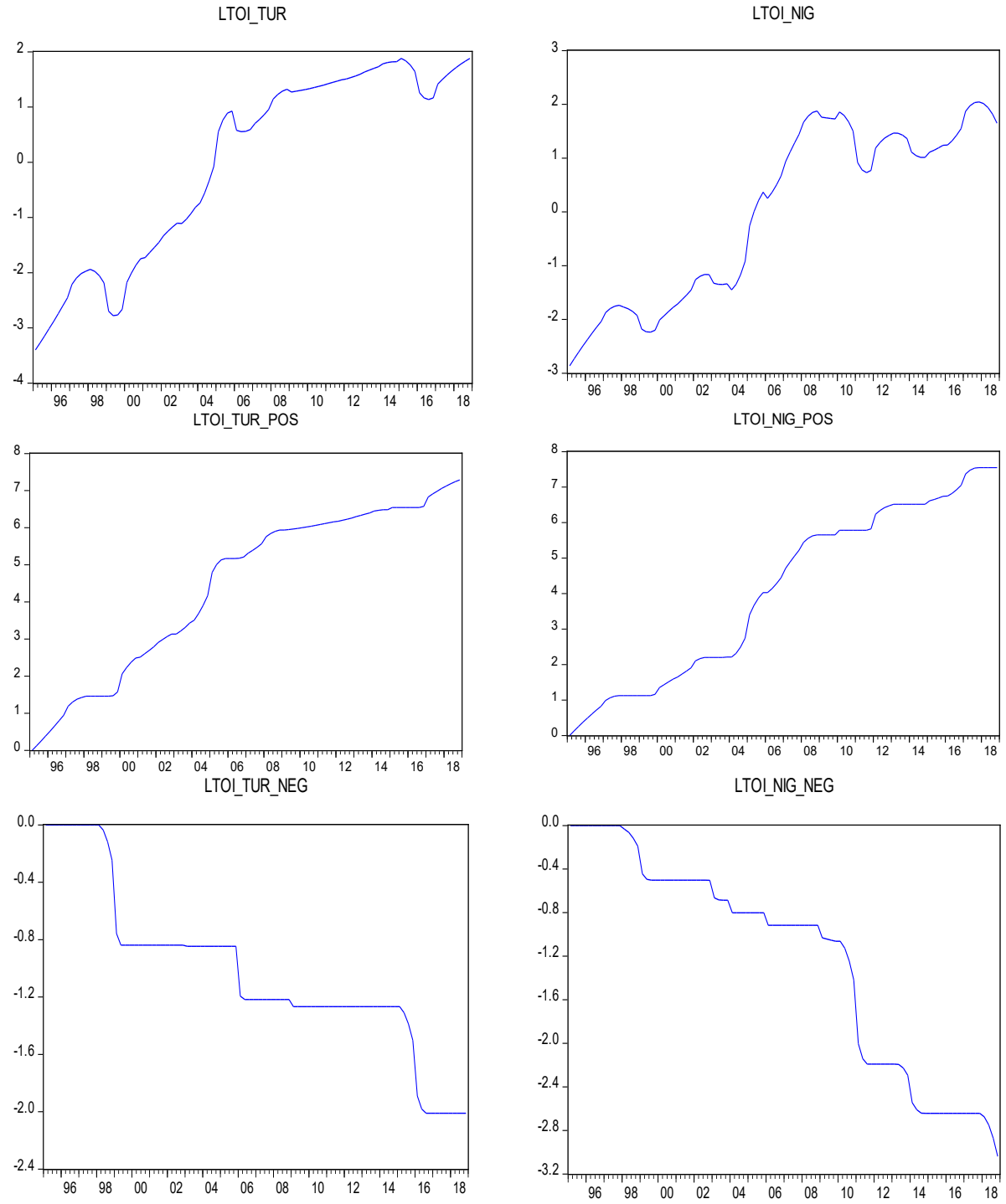
Figures 5 and 6 depict the time plot of inclusive growth and tourism together with their cumulative positive and negative components. Considering the nature of the graphs, it is obvious that asymmetries exist in both inclusive growth (LING) and tourism (LTOI).

Figure 5. Time plots of inclusive growth with their cumulative positive and negative components in Turkey and Nigeria



Source: Authors' Compilations

Figure 6. Time plots of tourism with their cumulative positive and negative components in Turkey and Nigeria



Source: Authors' Compilations

3. RESULTS

This section presents the empirical results emanating from the variables of interest. These include the descriptive statistic, unit root test and causality analysis.

3.1. DESCRIPTIVE STATISTICS

Table 5 gives the description of the variables with respect to the values of mean, median, maximum,

minimum and standard deviation. The variables display some level of consistency since their mean values fall between the minimum and maximum values. Also, the variables under consideration do not deviate from their mean values given a small value of the standard deviation.

Table 5. Summary of statistics

		Variable					
Country	Statistic	LING	$LING^+$	$LING^-$	LTAI	$LTAI^+$	$LTAI^-$
Turkey	Mean	4.776	0.222	-0.061	7.26E-16	4.423	-1.025
	Median	4.804	0.268	-0.059	0.816	5.263	-1.218
	Maximum	4.903	0.384	0	1.881	7.290	0
	Minimum	4.614	0	-0.100	-3.399	0	-2.011
	Std. Dev.	0.091	0.121	0.033	1.717	2.213	0.569
Nigeria	Mean	4.114	0.180	-0.013	3.93E-15	4.083	-1.221
	Median	4.113	0.181	-0.014	0.699	4.580	-0.915
	Maximum	4.283	0.352	0	2.046	7.550	0
	Minimum	3.947	0	-0.026	-2.862	0	-3.039
	Std. Dev.	0.124	0.129	0.006	1.610	2.448	0.967

Source: Authors' Computations

3.2. UNIT ROOT TEST

In examining whether the variables are stationary at level {I(0)} or at first difference {I(1)}, the study employs the Phillips-Perron test with intercept only. This is considered important because additional unrestricted lags must be added in the augmented VAR specified in the Toda-Yamamoto approach. The results in Table 6 reveal that all the inclusive growth and tourism as well as their cumulative negative and positive components are stationary at first difference. In other words, all the variables are integrated of order one, I(1). Thus, this suggests that one unrestricted lag must be included in the VAR model as stated in equation (5). Since the variables are I(1), it is expected that the variables must be cointegrated and this requires a cointegration test. However, according to Toda and Yamamoto (1995) and Hatemi-J (2012), co-integration is not a requirement for the testing of causal relationship between integrated variables in the VAR system when additional unrestricted lags are added.

Table 6. Unit root test (Phillips-Perron test with intercept only)

	Turkey			Nigeria		
Variable	I(0)	(I)	Status	I(0)	(I)	Status
LING	-1.190	-5.195**	I(1)	-0.467	-3.541**	I(1)
$LING^+$	-1.927	-5.549**	I(1)	-0.429	-3.486**	I(1)
$LING^-$	-1.457	-7.383**	I(1)	-0.662	-6.388**	I(1)
LTOI	-1.813	-5.257**	I(1)	-1.467	-4.763**	I(1)
$LTOI^+$	-2.279	-5.276**	I(1)	-0.935	-5.250**	I(1)
$LTOI^-$	-0.916	-6.855**	I(1)	0.394	-6.029**	I(1)
Critical values (5%)	I(0)	(I)		I(0)	(I)	
	-2.892	-2.893		-2.892	-2.893	

Note: ** indicates significant at 5% level.

Source: Authors' Computations

3.3. CAUSAL NEXUS BETWEEN INCLUSIVE GROWTH AND TOURISM

The study employs a bootstrap simulation approach with leverage adjustment following Hatemi-J (2012) and Olaniyi (2020) in examining the direction of causality between inclusive growth and tourism in Turkey and Nigeria. Tables 7 and 8 presents the symmetric (linear) and asymmetric (non-linear) causality analyses in Turkey and Nigeria, respectively. The results in Table 7 indicate that there is no asymmetric causal relationship between tourism and inclusive growth in Turkey following studies like Hampton *et al.* (2018), Hatemi-J *et al.* (2014), Phiri (2016), Katricioglu (2009) and Ozturk and Acaravci (2009). But in a linear (symmetric) framework, the tourism-led growth hypothesis (TLGH) holds for Turkey. This suggests that tourism influences inclusive growth in Turkey. This is consistent with the findings of Terzi (2015), Atan and Arslanturk (2012) and Zoturk (2009). The evidence of no asymmetric causal relationship shows that Turkey does not exhibit any exclusive relationship between international tourism and real GDP, as no causal relationship exists between them, while the acceptance of TLGH reveals that tourism not only has a positive effect on GDP, it actively promotes economic growth, as a unidirectional positive causal relation runs from both tourist arrivals and tourist receipts to economic growth.

In Table 8, all the possible combinations show that there is no causal relationship between inclusive growth and tourism in Nigeria either symmetrically or asymmetrically. This means that inclusive growth does not cause tourism and vice-versa in Nigeria. Put differently, the study lends credence to the neutrality hypothesis which shows no evidence of causal relationship between the two variables. These results align with the findings of Osinubi and Osinubi (2020), using tourism receipts and expenditures, Hampton *et al.* (2018), Hatemi-J *et al.* (2014) and Phiri (2016). This contradicts evidence from Osinubi and Osinubi (2020) in Nigeria where tourism index causes inclusive growth. This variance could stem from different methodologies employed. These findings in Nigeria are unsurprising given the unimpressive performance of the tourism sector in Nigeria and the low level of inclusive growth in Nigeria when compared to Turkey.

Table 7. Symmetric and non-asymmetric causality results: A bootstrap simulation approach in Turkey

Null Hypothesis	Wald Test	Bootstrap Critical Value (1%)	Bootstrap Critical Value (5%)	Bootstrap Critical Value (10%)	Lag Order
$LING \neq > LTOI$	5.131	20.665	14.230	11.689	6
$LTOI \neq > LING$	14.271*	21.417	14.542	12.061	6
$LING^{+} \neq > LTOI^{+}$	1.049	15.641	7.709	5.301	2
$LTOI^{+} \neq > LING^{+}$	1.181	14.006	7.066	4.981	2
$LING^{-} \neq > LTOI^{-}$	0.096	24.688	9.984	5.203	2
$LTOI^{-} \neq > LING^{-}$	0.038	24.327	9.818	5.323	2
$LING^{+} \neq > LTOI^{-}$	1.197	16.650	7.734	5.194	6
$LTOI^{-} LING^{+}$	0.407	16.494	7.791	4.925	6
$LING^{-} LTOI^{+}$	0.288	19.480	8.013	4.784	6
$LTOI^{+-}$	0.157	19.075	8.220	4.965	6

LING≠>LTOI denotes that the null hypothesis that *LING* does not cause *LTOI*. * indicates significant at 10% level. The number of bootstrap iterations in each case is 10,000

Source: Authors' Computations

Table 8. Symmetric and non-asymmetric causality results: A bootstrap simulation approach in Nigeria

Null Hypothesis	Wald Test	Bootstrap Critical Value (1%)	Bootstrap Critical Value (5%)	Bootstrap Critical Value (10%)	Lag Order
LING≠>LTOI	0.974	19.924	14.520	11.999	6
LTOI≠>LING	0.126	20.182	14.622	12.043	6
$LING^{+}\neq>LTOI^{+}$	0.270	13.554	7.011	4.981	6
$LTOI^{+}\neq>LING^{+}$	0.248	13.184	7.035	5.037	6
$LING^{-}\neq>LTOI^{-}$	0.127	20.565	7.756	4.858	2
$LTOI^{-}\neq>LING^{-}$	0.153	20.740	8.044	5.029	2
$LING^{+}\neq>LTOI^{-}$	0.057	15.716	7.579	5.171	6
$LTOI^{-}LING^{+}$	0.133	15.613	7.430	4.990	6
$LING^{-}LTOI^{+}$	1.021	17.656	7.276	4.838	2
$LTOI^{+-}$	1.028	16.191	7.066	4.864	2

LING≠>LTOI denotes that the null hypothesis that *LING* does not cause *LTOI*. The number of bootstrap iterations in each case is 10,000

Source: Authors' Computations

CONCLUSION

Tourism has yet to hit its full potential in MINT countries in which Nigeria and Turkey belong. Notwithstanding, tourism in MINT nations has progressed at various paces, with Turkey ahead of the pack in tourism performance and Nigeria faring the worst. It is on this note that this study examines the symmetric (linear) and asymmetric (nonlinear) causal relationships between tourism and inclusive growth in Nigeria between 1995Q1 and 2018Q4. Following Hatemi-J *et al.* (2014), the study employs a more advanced methodology, that is, bootstrap simulation method with leverage adjustments, to achieve its objective. The results show that there is no evidence of asymmetric causality between tourism and inclusive growth, while there is evidence of symmetric causality running from tourism to inclusive growth in Turkey. On the other hand, there is neither symmetric nor asymmetric causal relationship between tourism and inclusive growth in Nigeria. In sum, both neutrality and tourism-led growth hypotheses hold in Turkey, while Nigeria gives credence to neutrality hypothesis. For Turkey, the neutrality hypothesis derived from the nonlinear framework implies no causal relationship between tourism and inclusive growth. Succinctly, tourism has no impact whatsoever in the determination of inclusive growth and vice versa. The linear framework validates the tourism-led growth hypothesis, as it posits that tourism plays a role in influencing the level of inclusive growth in Turkey. For Nigeria, the neutrality hypothesis is corroborated by both the linear and nonlinear frameworks. Accordingly, this implies zero lines of causality running from tourism to inclusive growth and in the opposite direction.

Following the findings, the study recommends the following in Turkey and Nigeria. These are: (i)the tourism sector in both countries, Nigeria in particular, should be repositioned for better performance and effectiveness in stimulating inclusive growth. In tandem with the work of Bakker and Messerli (2017), as opposed to pro-poor and micro-based tourism policies that favour selected communities and localities, tourism should be included in development plans nationally, in order to ensure wider participation and more encompassing trickle-down effects on the citizenry (ii) the presence of no asymmetric causality between tourism and inclusive growth for both countries implies that tourism shocks do not in any way contribute to the shocks in economic growth. This paper recommends that Nigeria and Turkey should implement policies that stimulate their tourism sectors for a larger and more significant contribution to real GDP. The tourism sectors in both nations should be included in national development plans in order to ensure positive economic shocks to tourism have a wider effect on the economy. Given Nigeria's wide tourism appeal and Turkey's attraction for being regarded the link between the East and the West, the tourism sector in both countries has tremendous potential for being a driver of economic and inclusive growth.

Finally, future studies can examine the symmetric and asymmetric causality between tourism and inclusive growth in other MINT countries (Mexico and Indonesia). Also, they can decide to unbundle the tourism indicators in investigating the causal relationship between tourism and in inclusive growth in MINT nations and other emerging economies.

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