



**ST. MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES**

**DETERMINANTS OF TOURIST ARRIVAL: IN CASE OF
ETHIOPIA, KENYA, TANZANIA, AND UGANDA**

**BY
DESALE DARGIE**

**JUNE 2020
ADDIS ABABA, ETHIOPIA**

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**A THESIS SUBMITTED TO SCHOOL OF GRADUATE STUDIES, ST. MARY'S
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ST. MARY'S UNIVERSITY
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APROVED BY BOARD OF EXAMINERS

As members of the Examining Board of the final MA, open defense, we certify that we read and evaluated the thesis prepared by Desale Dargie and recommend that it be accepted as fulfilling the thesis requirement for the Degree of Master of Art in Development Economics.

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DECLARATION

I here under signed declare that the thesis entitled with “the determinants of tourist arrival: in case Ethiopia, Kenya, Tanzania and Uganda” is my own work and the all sources I have been used have fully acknowledged in a form of reference. This paper has not been presented or submitted for any academic purpose previously.

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Date June 2020.

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ENDORSEMENT

This thesis has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a University advisory.

Adviser's Name and Signature:

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ACRONYMS

WTTC: World Travel and Tourism Council

UNWTO United Nation World Tourism Organization

TLD: Tourism Lead Development

Abstract

The general objective of the study was to find out the determinants of international tourist arrival in case of Ethiopia, Kenya, Tanzania and Uganda using panel data from 1995 unto 2018. The study has employed quantitative method of data analysis. and it's expecting that the findings of the research will offer an input for regional policy makers to assess the empirical evidence when they intend to design ecotourism development. All the necessary data were collected from secondary source like World Bank, world tourism and travel council, and united nation world tourism organization annual reports. Panel data regression was employed to analyze the determinants of international tourist arrival. Finally we found that the telecom infrastructure -like percentage of the population using the internet, the percentage change in the mobile subscribes, percentage change in the capacity of air transport in terms of passenger carrying capacity annually, the life expectancy of total population and the devaluation official exchange rate positive determine the international tourist arrival in case of Ethiopia, Kenya, Tanzania, and Uganda. Whereas, the increment in the percentage of urban population negatively and significantly determines international tourist arrival in Ethiopia, Kenya Tanzania and Uganda. Based on the findings the researcher has recommended that the governments and those who have concern about the tourism of Kenya, Ethiopia, Tanzania and Uganda should works towards in the improvements of telecommunications, air transport passenger capacity , and on the improvement of nations life expectancy to get an anticipated growth on the tourist arrival in those countries.

Key words: tourism, travel, international tourist arrival, political stability, tourism lead economy, economy driven tourism

CHAPTER ONE

1. INTRODUCTION

1.1. Background of the Study

Tourism is travel for pleasure or business; also the theory and practice of touring, the business of attracting, accommodating, and entertaining tourists, and the business of operating tours. Tourism had been defined since in the late after the League of Nations (1936) defined a *foreign tourist* as "someone traveling abroad for at least twenty-four hours". This definition of tourism modified by its successor, the United Nations (1945) into including a maximum stay of six months. Finally, In 1981, the International Association of Scientific Experts in Tourism defined tourism in terms of particular activities chosen and undertaken outside the home. The term tourism and travel considered as interchangeably in different economic literatures.

Tourism is one of the world's fastest growing industries and a major foreign exchange and employment generation for many countries. It is one of the most remarkable economic and social phenomena. International tourist arrivals reached 1.4 billion in 2018, up from over 1.3 Billion in 2017, and 1.2 billion in 2016. Since 2010, international travel demand continued growing at fastest rate that recovered from the losses resulting from the late-2000s recession, where tourism suffered a strong slowdown from the second half of 2008 through the end of 2009. After a 5% increase in the first half of 2008, growth in international tourist arrivals moved into negative territory in the second half of 2008, and ended up only 2% for the year, compared to a 7% increase in 2007. The negative trend intensified during 2009, exacerbated in some countries due to the outbreak of the H1N1 influenza virus, resulting in a worldwide decline of 4.2% in 2009 to 880 million international tourists arrivals, and a 5.7% decline in international tourism receipts, WTTT(2007-2009).

The World Tourism Organization reports the France ,Spain, united states ,china, Italy, turkey, Mexico, Germany, Tiland and united kingdom are ten destinations as the most visited in terms of the number of international travelers in 2018. Hongkong, Bangkok, London, Singapore, Macu, Paris Dubai, new York city, Kuala Lumpur, and Shenzhen are the top ten world's cities most visited by international tourists in 2017, Euromonitor International (2018).

In addition to that, in the contemporary world economy, the tourism sector has become a significant driver of social, technological and economic development, as it has been reported in many studies Tourism has been the significant contributor for the global economy in last two decades. The contribution of this industry may be direct or indirect to the economy. The direct contribution of Travel & Tourism to GDP in 2018 was USD, 750.7bn (3.2% of GDP) and the total contribution of this sector was 10.4%. In the employment creation the sector directly contributes 3.8% of total employment in 2018 and the total contribution of travel and tourism industry out of the 10% out of the total employment, UNWTO (2019).

According to UNWTO (2019), “international tourism accounts for 7% world export industries and 29% of global service export industry. And the African tourism industry is the second fastest growing export industry in the world. More than 67 million tourists visited Africa in 2018, representing a rise of 7% from a year earlier, making Africa the second-fastest growing region when it comes to tourism, after Asia Pacific. The share of the global tourism pie remains too small as compared to the remaining continents. It’s accounting for 8.5% of GDP and employing 24.3 million people on the continent, only 5% of international tourist arrivals were to African countries. Additionally, in 2018, only 1% of the world tourism earnings in the sector were on the continent”.

Since the significance impacts of this sector have been acknowledged by many international institutions and scholars, A lot of scholars have been engaged in assessing the determinants of tourism destination across the world economies and regional economies. Moreover, a lot of research has been conducted in the area of tourism nexus economy. A lot of scholars acknowledge four different hypotheses in tourism nexus economy since 1970s: tourism led economic growth, economic driven tourism, bidirectional relation and significant relation between them, (Telfer et.al., 2015).

Weldearegay, J (2017) studied The Determinants of Tourism Destination Competitiveness (TDC) using Path Model of Structural Equation Modeling in case of 78 world countries. He suggested that “The exogenous latent construct “urbanization” is found to have a strong, positive and direct effect on the outcome variable which signifies that the number of worldwide psychocentric tourists is marginally higher than allo-centric and mid-centric tourists together, which has great policy and marketing implications. The path relationship between demand conditions and

TDC was found statistically significant, but negative. The exogenous latent construct “complementary conditions” took the first rank on the power of explaining TDC. This confirms the theoretical postulate that this construct amplifies Impulse Travel Decision of highly spending tourists which increases spending per arrival ratio and thereby to TDC.”

A lot of researches have been conducted on this area of study in world economy. Mukesh Ranga, & Priyanka Pradhan (2014) also studied the impact of international terrorism in tourism of India (2006-2012) and suggesting the negative correlation between the international terrorism and international tourism arrivals. Lukáš Malec and Josef Abrahám (2016), acknowledge Various events, such as the global economic crisis, have seriously hampered long-term stable tourism processes with a particular relevance to international visits in the European selected regions.

Naudé & A. Saayman (2015), studied the determinants of tourism arrival in Africa using both cross-section data as well as panel data for the period 1996 to 2000 to identify the determinants of tourism arrivals in 43 African countries, taking into account the country of origin of tourists. Their results strongly suggest that political stability, tourism infrastructure, marketing and information and the level of development in the destination are key determinants of travel to Africa. Typical “developed country determinants” of tourism demand, such as the level of income in the origin country, the relative prices and the cost of travel, are not that significant in explaining the demand for Africa as a tourism destination. W.A. Naudé & A. Saayman (2004) suggested that political stability, tourism infrastructure, marketing and information and the level of development in the destination are key determinants of travel to Africa. Typical “developed country determinants” of tourism demand, such as the level of income in the origin country, the relative prices and the cost of travel, are not that significant in explaining the demand for Africa as a tourism destination. Yibalal (2010) also acknowledged, Level of economy, urbanization, distance in Km, CPI ratio, and the performance of last year tourism destination in the countries was the main significant drivers of the tourism destination flow in Ethiopia. But there is no recent evidence about the area of study in the east African states. Because of the lack of data, data uncertainties and incomparable performance of some nations like Egyptian performance the researcher only intends to analyze the determinants of tourism arrival in Ethiopia, Kenya, Tanzania and Uganda.

1.2. Statement of the Problem

Tourism has been the most significant export service sector in many developing and developed countries. A general consensus had been emerged for the relationship between tourism industry development and economic development. But there are different arguments whether economic growth triggers tourism industry developments or the tourism industry sector development lead to economic development. This sector tourism sector is one of the main components of export industry. But it has been acknowledged that Tourism and tourism-related activities are regarded as one of the most important sectors of economic growth in the world. It is estimated that the tourism sector stimulates investment, and due to increased competition, leads to the greater efficiency of local companies. This, in turn, decreases production costs in many cases. Tourism increases foreign exchange earnings and decreases unemployment because of its close connection with human capital (Zavadskas et al., 2015).

Along with confirmation of the significant share of tourism in national and worldwide economy accounts, a vast amount of literature was focused on connections between tourism and the wide range of economic parameters. Publications dealing with tourism demand and supply and the economy are currently oriented to in different econometrics approach- vector error correlation and cointegration approaches are the most common along with panel regression analysis. The first arguments of literature have on supporting the idea of Tourism activities are considered to be one of the major sources of economic growth. Lea (1988) and Sinclair (1998) have highlighted the potential of the tourism sector in promoting growth, creating jobs and generating revenue for the government. There are a number of empirical papers confirming the tourism industry's contribution to a country's economic growth. The importance of tourism to economic development has been widely recognized due to its contribution to the balance of payments, GDP and employment. As a worldwide export category, tourism ranks third after chemicals and fuels and ahead of automotive products. In many developing countries, tourism is the top export category, WTO (2017).

The level of economy has significant contribution in the growth of tourism destination competitiveness growth which has been hypothesized by many researchers in tourism nexus economy literatures. The basic idea of this hypothesis is that economic development is the main determinants of the tourism industry development. Rather political stability, marketing and

information, drought, tourism, infrastructure, the level of development in the destination are key determinants of tourism flow to these countries (Ethiopian economic association, 2009). The top ten countries that got the highest benefit in the global tourism industry were those have large economy. USA, Japanese chines, Germany, UK, Italy, France Indian, Spain and Mexico are the leading top ten countries that afford highest share from world tourism industry (WTTTC 2019).

However, the significant determinants of tourism destination are not such limited by one factor which economic status of the region or the country rather a lot of social cultural and environmental factors. Andrea s. (2004) studied the determinants of African tourism using panel data regression analysis. And she strongly suggests that political stability, tourism infrastructure, marketing and information and the level of development in the destination are key determinants of travel to Africa. Typical “developed country determinants” of tourism demand, such as the level of income in the origin country, the relative prices and the cost of travel, are not that significant in explaining the demand for Africa as a tourism destination. But she took all countries of Africa in one data analysis which undermines the regional perspectives and many factors are now changing since there are updated scholars about the determinants of Africana tourism.

YabibalW.(2010), studied tourism flow and its determinants in Ethiopia using panel data regression over different factors. According his conclusion Level of economy, urbanization, distance in Km,CPI ratio, and the performance of last year tourism destination in the countries was the main significant drivers of the tourism destination flow in Ethiopia.Sikawa M. (2019), examines how to improve tourism in Kenya and actualize untapped potential by compared Kenya’s tourism with South Africa, with the aim to providing a measurable benchmark for the sector in Kenya to emulate in order to increase the economic input it has on the country’s GDP. It seems as though tourism in South Africa is a far much success story as compared to Kenya. But he does not figure out what macro-economic, social and political factors have significant impact to Kenyan tourism as compared to South Africa’s.

However, there is a shortage of studies focus on the determinants of international tourism destination in Ethiopian, Kenya, and Tanzania and Uganda tourism industry. This study will therefore try to measure and identify the major determinants of tourist destination in Ethiopian, Kenya Tanzania, and Uganda tourism industry. To better understand the concepts of destination

of tourism experience This study would focus on the determinants of tourist arrival using panel data regression analysis for the period 1995 until 2018.

1.3. Objectives of the Study

1.3.1. General Objective

The general objective of this analysis is to examine the determinants of tourist arrival in case of Ethiopia, Kenya, Tanzania, and Uganda for the period 1995-2018, for 24 years in comprehensive using panel data regression analysis.

1.3.2. Specific Objectives

- to identify the determinant of tourist arrival in case of Ethiopia, Kenya, Tanzania, and Uganda for the period 1995-2018
- To compare and contrast the trends of international tourist arrival among the four selected countries.

1.4. Research Question

- What are the significant variables/regressors which mainly affect the number of international tourism arrival in east Africa specifically in Ethiopia, Kenya, Tanzania and Uganda?
- Is there a significant difference holistically over time in international tourist arrival among the east Africa countries specifically in Ethiopia, Kenya, Tanzania and Uganda?

1.5. Significance of the Study

The researcher anticipated that the finding of the research and the direction of the research that would be employed would be use full in broad understanding on the determinants of tourist arrival in case of Ethiopia, Kenya, Tanzania, and Uganda empirically. And it's expecting that the findings of the research would offer an input for regional policy makers to assess the empirical evidence when they intend to design ecotourism development. Additionally, the research finding would also add margin of knowledge on the field of development economics and ecotourism. Finally, this research would contribute as reference to those who are engaged in the study of the socio- economic and environmental determinants of tourist arrival.

1.6. Scope and limitations of the Study

The scope of this study was limited in terms of regional and time coverage and method. With regard to coverage, first it is limited to the Ethiopia, Kenya, Tanzania and Uganda at macro economy level as well as tourism industry at the national level excluding and undermining the regional determinants of tourist arrival which will be under taken on specified countries based on availability of data. Secondly the researcher only analyzes the determinants of international tourism arrivals (inbound tourism). In terms of time, it covers only the time period 1995–2018 G.C. available data at different sources like WBO, UNDP, IMF, WTTC, and Ethiopia ministry of tourism. As with any other study, this study has its own limitations. The determinants of tourist arrival on east Africa countries like Ethiopia Kenya Tanzania and Uganda were sampled based on bases of non- probability purposive sampling method based on the selection criteria used by researcher such as the size of tourism, earlier contribution of tourism on those countries and their past contribution to economic development and the availability of the data. Therefore, the result and findings of the research does not generalize for other east Africa countries. In the present study the researcher used annual data. This may obscure potentially important and interesting seasonal effects since High frequency data on tourism in Ethiopia Kenya and Tanzania including Uganda is, however, lacking.

The research analysis for determinants of tourist arrival will based on using 24 years' time series data that generated from different international source mainly, united nation world tourism organization and world trade organization and World Travel & Tourism Council as a result there may be data inconsistency and afraid of accuracy because. It is limited to the considered years only and there may data inconsistency due to missing values and measurement problems. Finally, the researcher takes a lot of proxy variables which are assumed to be good representative for some variable.

1.7. Organization of the Paper

The study paper has organized in five chapters. The first chapter focuses on the background of the study, statement of the problem, research questions, general and specific objectives of the study, significance, limitation of the study and organization of the paper.

The Second chapter mainly highlights the related literature review of the study. It comprises details about tourism definition, significance of tourism. In addition, to that this chapter includes the theoretical and empirical literature review about the determinants of tourist arrival in global market and regional markets. The third chapter discusses about research methodology; research design, source of the data and data analysing mechanisms.

The fourth chapter provides results and discussion of the study. The final chapter includes summary, conclusion, recommendations and at the end references and appendixes were attached.

CHAPTER TWO

2. LITERATURE REVIEW

This chapter mainly focuses on theoretical literature review as well as the empirical literature that has been done review in global and regional level in the recent years. Finally, it will summarize by discussing the overview of both the theoretical and empirical review.

2.1.Theoretical Literature Review

Hunziker and Kraft (1941), defined tourism as "the sum of the phenomena and relationships arising from the travel and stay of non-residents, insofar as they do not lead to permanent residence and are not connected with any earning activity." In 1976, the Tourism Society of England's definition was: "Tourism is the temporary, short-term movement of people to destinations outside the places where they normally live and work and their activities during the stay at each destination. It includes movements for all purposes." In 1981, the International Association of Scientific Experts in Tourism defined tourism in terms of particular activities chosen and undertaken outside the home. The term tourism and travel considered as interchangeably in different economic literatures. Tourism can be classified as local/ domestic tourism which accounts for four-fifths of tourists and International tourism. International tourists are "tourists who stay at least one night in a country where they are not residents". This is further classified as inbound tourism and out bound tourism. Such types of tourism have incoming and outgoing significant implication for countries balance of payment. Domestic tourism, involving residents of the given country traveling only within their own country's territory (UN, 1994). After this statement the researcher considers/ focus on only in the inbound tourism.

Businesses and public organizations are increasingly interested in the economic impacts of tourism at national, state, and local levels. Economists have been also analyzing the nexus between the tourism and economic growth. Some economists, environmentalists also rise out the negative impact tourism in the nation's economic development. The direct impact of tourism for the economy is through increasing the local demand which mainly boosting sale volume, job creation, direct contribution to GDP, sustaining balance of payment ... etc.

According to United Nations 1979 Classification of purpose of visit (or trip) by major groups for inbound, outbound and domestic tourism are Leisure, recreation and holidays Visiting friends and relatives Business and professional Health treatment Religion/pilgrimages and others.

Tourism is the act and process of spending time away from home in pursuit of recreation, relaxation, and pleasure, while making use of the commercial provision of services. As such, tourism is a product of modern social arrangements, beginning in Western Europe in the 17th century, although it has antecedents in Classical antiquity. It is distinguished from exploration in that tourists follow a “beaten path,” benefit from established systems of provision, and, as befits pleasure-seekers, are generally insulated from difficulty, danger, and embarrassment, (John K. 2018).

Adam Smith (1776), on his famous book of, “The Wealth of Nations”, reasoned that a nation would produce that good at lower cost, becoming more competitive than its trading partner. Therefore, Smith viewed the determination of competitive advantage from the supply side of the market. Having this line of argument, amongst the most publicized problems facing less developed countries are their balance of payments deficits and their high level of international debt arising from having less absolute advantage in international trade. With limited natural resources and restricted industrial production, less developed countries, by necessity, import many of their basic needs. The most important means for compensate their trade deficit is exporting industry. Tourism industry is the main contributor of for development of export industry in developing and developed countries.

The relationship between tourism and economic development has been addressed by two different components in the economic literature. The first was derived from the Keynesian theory of multiplier. According to Keynesian approach, international tourism can be accepted as an exogenous component of aggregate demand that has a positive effect on income, employment and so on, thus leading to economic development through the multiplier (Suresh and Senthil Nathan, 2014). Multiplier effects mean that any government expenditure about cycles of spending that increases employment and income regardless of the form of the expenditure. Tourism yields income and employment multiplier effects in addition to direct income and employment effects (Albaladejo et al., 2014).

By the early 21st century, international tourism had become one of the world's most important economic activities, and its impact was becoming increasingly apparent from the Arctic to Antarctica. The history of tourism is therefore of great interest and importance. That history begins long before the coinage of the word tourist at the end of the 18th century. In the Western tradition, organized travel with supporting infrastructure, sightseeing, and an emphasis on essential destinations and experiences can be found in ancient Greece and Rome, which can lay claim to the origins of both "heritage tourism" (aimed at the celebration and appreciation of historic sites of recognized cultural importance) and beach resorts. The Seven Wonders of the World became tourist sites for Greeks, Romans Egyptians.

Tourism entered the mainstream of development thinking in the context of debates in the 1950s and 1960s regarding the need to promote economic development in the 'Third World' (Monten& Popovic, 1970). There followed an excess of applied empirical studies of tourism development accompanied by the enthusiastic advocacy of tourism as a development strategy by international development agencies, banks and foreign 'experts' (Crick, 1989). For the most part these works were preoccupied with the quantification of tourism's economic impact on 'Third World' destinations using a range of multiplier and input-output analyses (Eadington& Redman, 1991). The putative success or failure of tourism development was then calibrated in relation to its contribution to foreign exchange, national income and employment (Kottke, et al.,1988).

2.1.1.Tourism Nexus Economy

In all of the world's emerging economies, tourism is one of the primary industries driving growth and job creation. Even a decade ago, tourists were already spending \$295 billion every year (world tourism statistics 2007) in developing countries—which amounts to roughly three times total overseas development assistance to the developing world in 2007—and interest in under-explored and remote travel destinations continues to rise. This signals enormous potential for tourism-driven development in Africa's emerging markets over the long term.

Since 1950s many scholars have been analyzed the relationship between the macro-economic theory of growth and the tourism industry development. In the last three decades' scholars have been giving an attention to make case for tourism as the diversification needed to improve the economic development in the global context. Some Scholars have theoretically analyzed the

relationship between economic development and tourism development. The theoretical relationship between the two have been generalizes by four different hypotheses.

The first hypothesis was tourism lead growth hypothesis. According to this hypothesis the development of tourism export industry has significant impact on the economy. The most important economic feature of activities related to the tourism sector is that they contribute to three high-priority goals of developing countries: the generation of income, employment, and foreign-exchange earnings. In this respect, the tourism sector can play an important role as a driving force of economic development. The impact this industry can have in the different stages of economic development depends on the specific characteristics of each country. Given the complexity of tourism consumption, its economic impact is felt widely in other production sectors, contributing in each case toward achieving the aims of accelerated development.

The second one is economic driven tourism growth has been hypothesized by many researchers. The basic idea of this hypothesis is that economic development is the main determinants of the tourism industry development. Rather political stability, marketing and information, drought, tourism, infrastructure, the level of development in the destination are key determinants of tourism flow to these countries (Ethiopian economic association, 2009). The top ten countries that got the highest benefit in the global tourism industry were those have large economy. USA, Japanese chines, Germany, UK, Italy, France Indian, Spain and Mexico are the leading top ten countries that afford highest share from world tourism industry (WTTTC 2019). The chart below here depicts the contribution of travel and tourism to different regions of the world's GDP:

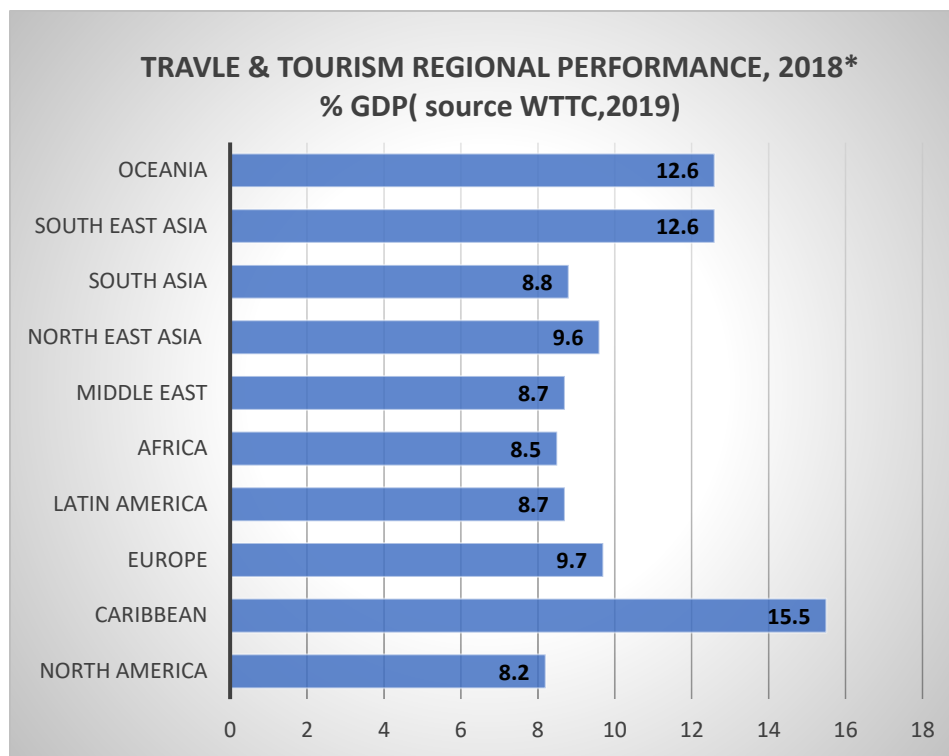


Figure 1 contribution of tourism in world economy

Vera Shanshan Lin, Yang, and Gang Li (2013), investigate the causal relationships between international tourism growth and regional economic expansion in China, and more importantly, disclose the factors determining the occurrence of these relationships. The empirical results reveal that 10 of 29 regions experienced nine regions experienced economy-driven tourism growth (EDTG). According to their results they suggest that regions with less developed economies, small economic size and covering small regional areas are more likely to experience EDTG. Gibson N. and Ariuna T. (2017) also claimed that The economic development-led tourism development result in 40% of the SSA countries. Those countries mostly used their incomes to improve their tourism infrastructure with the objective of accelerating long-run economic growth.

The third hypothesis is bidirectional relation between tourism industry development and economic growth. In this argument the improvement in the indicator of economic development have significant positive impact on the variables of tourism industry development. The most visible supporting idea of this hypothesis is the impact of human development index which is the

main driver of educational tourism and health tourism. Simultaneously, the development of the tourism industry has significant impact the economic development the nation through Keynesian multiplier effect.

The last hypothesis is the neutral relation in between those two – economic growth and development and tourism industry growth. As the sector became incorporated into the debate about global dependency in the 1970s and 1980s, a number of scholars were skeptical of the potential for tourism to have a positive impact beyond strict measures of growth and export earnings. and also, many argued that the nature of tourism relies on small and short-term investments from foreign visitors, which are volatile and prone to extreme shocks during times of political or health crises, and which often exacerbate problems of cultural appropriation and environmental degradation with little direct benefits for local communities.

By this argument some scholars about tourism industry vis-à-vis economic growth is there is no any linkage between the economy growth and tourism industry that is the called neutral hypothesis. The followers of this argument thought that weather the there is no significant long and short run linkage in between two or existence of negative relation between the economic development and tourism industry development, Britton (1981). The main pillars of this argument are the neo-colonialism and leisure imperialism. Tourism sometimes in developing country known by its exploitive activities through Eroding the value of important natural and cultural heritage assets, Causing the loss of urban environmental amenity, contributing to undesirable social impacts including exploitation of vulnerable groups notably women, children, and ethnic minorities, Tun Lin and Franklin D. (2009).

The other side effect of tourism on the economic growth is the Dutch disease. The diversion of factor of production mainly labor and capital from manufacturing sector into tourism industry services sector was referred as beach disease, Copeland (1991). He explained that under special condition, the appreciation of the real exchange rate is the only mechanism by which tourism can increase domestic welfare (in the absence of taxation and distortions such as unemployment). The main idea of this proposition was based on the evidence that tourism industry is labor incentive and financial capital incentive sector; the development of this sector would be as the cost of another economic sector.

Alexander C. (2014), analyzed Determinants of International Tourism with the help of IMF and suggested their view. That paper estimated the impact of macroeconomic supply- and demand-side determinants of tourism, one of the largest components of services exports globally, and the backbone of many smaller economies. They applied the gravity model to a large dataset comprising the full universe of bilateral tourism flows spanning over a decade. Their results show that the gravity model explains tourism flows better than goods trade for equivalent specifications. The elasticity of tourism with respect to GDP of the origin (importing) country was lower than for goods trade. Tourism flows respond strongly to changes in the destination country's real exchange rate, along both extensive (tourist arrivals) and intensive (duration of stay) margins. OECD countries generally exhibit higher elasticities with respect to economic variables (GDPs of the two economies, real exchange rate, bilateral trade) due to the larger share of business travel. Tourism to small islands is less sensitive to changes in the country's real exchange rate, but more susceptible to the introduction/removal of direct flights.

2.1.2.Determinants of Tourism Performance

Since 1970s the tourism industry deployment indicators statistics have been recorded by different international organization like UNWTO, WTTC and also WORLD BANK (1944) on its economic growth and development indicator for 189 countries recognize and recorded the statistics of the world tourism. This creates incentives for many researchers in different fields of research. Many researchers have been analyzing the determinants of the tourism industry in different regions of the world in last three decades. Some of the concluding that level of the economy, the infrastructure, stability, environmental and socio-cultural issues are the generic determinants for world tourism industry.

Why do some destinations attract more visitors than others? This question has been asked by various researchers and has attracted numerous studies since the 1970s. Grouch (1994) indicates that the responsiveness of demand for international travel varies, depending upon the nationality of the tourist and the specific destination involved. Thus, demand-elasticity for international tourism varies by country-of-origin and country-of-destination. The demand for tourism is therefore a function of the tourist's country of origin, since cultural difference affect travel behavior.

According to Alexandra F. and Yi G. (2017) Variation in tourism demand and inflows is induced by many factors – ranging from economic and political to social, natural and technological. Income in the country of tourists' origin plays an essential role when it comes to traveling. It is one of the most frequently used variables in tourism studies. Even during the last decade, income has continued to be chosen by many researchers as a significant determinant of tourism demand. In contrast to this unity, they each expressed income in a slightly different way (Andrea,(2004) and Lim (1997). There is evidence that an increase in the World's GDP per capita, a depreciation of the national currency, and a decline of relative domestic prices do help boost tourism demand. The World's GDP per capita is more important when explaining arrivals, but relative prices become more important when the researcher uses expenditures as the proxy for tourism demand.

Attractiveness of the country has been also acknowledged as the significant determinants of world tourism inflow. Tastes vary from person to person. Moreover, they change and develop over our life. Age is just one among other various socio-economic factors that influence traveler's tastes. Sex, marital status and level of education also result in different tastes across population. They can further change as a consequence of rising living standards, advertising or innovation (Song et al., 2009).

Lim (1997) summarizes some of the variables used in the analysis of tourism demand since the 1960s. As dependent variable, tourist arrivals and/or departures is the most popular (used in 51% of studies), followed by tourist expenditure and/or receipts (49% of studies). Various independent variables are used and the number of independent variables ranges from 1 to 9. The most popular variables, listed from most-used to least-used, included in previous research are Income, which affects the ability to pay for overseas travel, and the proxies used include nominal or real per capital personal, disposable or national income, or GDP and GNP, Relative prices of goods and services purchased by tourists in the destination, compared with the origin and competing destinations as measured by the CPI ratio, Transportation cost, which refers to the cost of round-trip travel between the destination and the origin country, Exchange rate between the currencies of the destination and origin country, Exchange rate between the currencies of the destination and origin country, Other factors, such as supply/capacity constraints on tourism accommodation, exchange rate reforms or foreign currency restrictions, cross price elasticity of vacation goods and the average propensity to consume tourism goods (Andrea s. 2005).

Coshall (2000) indicates, “There are many financial, perceptual, cultural, social and environmental factors that could be used to try and explain international tourism flows.” The research on which these statistics were compiled was mainly based on tourism demand in developed countries, with little reference to developing countries and none to African countries. Certain factors not included in previous studies, but which certainly affect tourism to Africa (see Kester, 2003; Ahmed et al, 1998 and Gauci et al, 2003), needs to be identified.

According Professor Klaus Schwab in World economic forum (2015) they have looked at the T&T competitiveness of 141 economies, based on the updated World Economic Forum’s Travel & Tourism Competitiveness Index (TTCI). The TTCI represents their best efforts to capture the complex phenomenon of Travel & Tourism (T&T) competitiveness, demonstrating that a whole array of reforms and improvements in different areas are required for improving the T&T competitiveness of nations .In the middle of 2010s The Travel & Tourism sector has shown surprising resilience to geopolitical tensions, threats of terrorism, global pandemics and sluggish economic growth in advanced economies. While international tourist arrivals are correlated with economic fluctuations and sensitive to security issues, these tend to impact specific countries or regions; if one country is hit by instability, others will receive more tourists. Globally, the trend for growth seems unstoppable (Klaus Schwab, 2015).

2.2. Empirical Literature Review

2.2.1. Determinants Tourism Destination Growth in Africa

More than 1.5 billion international tourist arrivals were recorded in 2019, globally. A 4% increase on the previous year which is also forecasted for 2020 by different international organizations, confirming tourism as a leading and resilient economic sector, especially in view of current uncertainties. By the same token, these calls for such growth to be managed responsibly so as to best seize the opportunities tourism can generate for communities around the world (WTTC,2020). According to the first comprehensive report on global tourism numbers and trends of the new decade, the latest UNWTO World Tourism Barometer, this represents the tenth consecutive year of growth. However, uncertainty surrounding the global world the like the natural disasters, widespread virus driven diseases, terrorism, world political tension, and other human made and natural factors have been exerting.

According to world trade organization (2000), the lasted half century- in between 1950-2000 recorded tremendous sustainable growth on the emerging tourism industry in different aspect of all over the world. The number of annual international tourism arrival was not more that 25 million of people before 1950s. This figure was surprisingly and consistently advanced to more than 650 million international arrivals in the late 1990s. Since the 1950s, the global market for international travel and tourism has exhibited uninterrupted growth. After the end of the Cold War, the sector accelerated more rapidly than the global economy, with an average annual growth rate of 4.1 percent between 1995 and 2010(Landry S., 2018). This modern tourism industry was strongly expanded by ongoing geographical expansion. In that period of time many countries had been success full by attracting international tourist and by turning tourism industry to main contributor to their economy growth. An outstanding diversification in tourism destinations had taken place, with those of Asia, North Africa and Latin America and the Caribbean being the emerging destinations joining in.

This sector has archived great improvement in terms direct contribution to GDP, direct and indirect employment creation of in Africa since early 2000s. In between 1998 and 2015 service export industry including of industries without smokestacks such as tourism had been growing at average annual growth rate of six times faster than merchandise export in Africa, (Landry S., 2018).

Why do some destinations attract more visitors than others? This question has been asked by various researchers and has attracted numerous studies since the 1970s (only 4 studies attempted to provide answers to the question during the 1960s). Grouch (1994) indicates that the responsiveness of demand for international travel varies, depending upon the nationality of the tourist and the specific destination involved. Thus, demand-elasticity for international tourism varies by country-of-origin and country-of-destination. The demand for tourism is therefore a function of the tourist's country of origin, since cultural difference affect travel behavior.

Tourism in Africa is an important economic activity. The tourist characteristics of Africa lie in the wide variety of points of interest, the diversity, and variety of landscapes, as well as the rich cultural heritage. Having this Tourism in Africa has been growing at in last decades continually as compared to other continents. The sector in Africa was booming, growing 5.6% in 2018 compared to the global average of 3.9% and the broader African economy rate of 3.2%. This

places Africa as the second-fastest growing tourism region behind only Asia-Pacific. Such growth is partly explained by North Africa's rebound from security crises as well as the development and implementation of policies that promote travel facilitation. Ethiopia stands out not only as Africa's fastest growing travel economy but indeed the world's, growing by 48.6% last year to be worth \$7.4bn. Notably, international Travel & Tourism spending made up a massive 61.0% of exports in the country. This stunning growth can be attributed, in part, to Ethiopia's improved connectivity as a regional transport hub and to recent visa relaxation policies, world travel and tourism council 2019.

Africa's tourism potential is acknowledged to be significantly growing but it is still immature. Naudé, W. and Saayman, A. (2005), studied the Determinants of tourist arrivals in Africa using both cross-section data and panel data for the period 1996–2000 to identify the determinants of tourism arrivals in 43 African countries, taking into account tourists' country of origin. The results strongly suggest that political stability, tourism infrastructure, marketing and information, and the level of development at the destination are key determinants of travel to Africa. Typical 'developed country determinants' of tourism demand, such as the level of income in the origin country, the relative prices and the cost of travel, are not so significant in explaining the demand for Africa as a tourism destination. It is therefore recommended that attention should be given to improving the overall stability of the continent and the availability and quantity of tourism infrastructure.

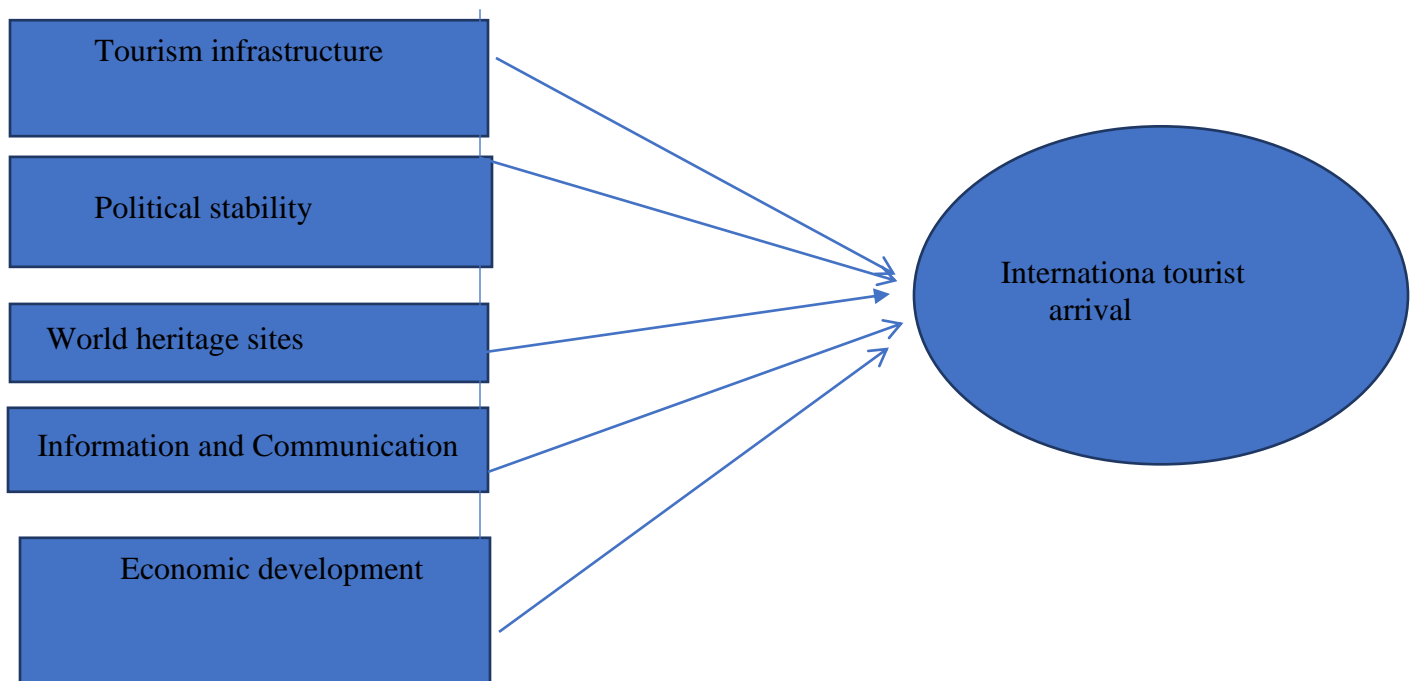
According to Baker (2014) terrorism has been the main negative contributor towards travel and tourism sector. "The impact of terrorism on the travel and tourism industry can be enormous. It can lead to unemployment, homelessness, deflation, and many other social and economic ills. The contribution of tourism for many countries is so great that any downturn in the industry is a cause of major concern for many governments."Seddighi et al. (2001) and Stafford et al. (2002) state that the effects of terrorist attacks might cause political instability, which leads to the decline or disappearance of tourist arrivals in some tourist destinations The literature and statistics all confirm that terrorist attacks alter tourism demand patterns, indicating an increasing demand to cancel travel or holiday plans particularly just after the 9/11 terrorist attack (Brunn, et al., 2004).

2.3. Conceptual Framework

A conceptual framework is a concise description of a phenomena usually aided by graphic of major variables of the study. It shows the interaction of variables under study (Mugenda, 2008). The researcher believes that when, the researcher selects international tourist arrival as a dependent variable and tourism infrastructure, information and communication, tour price, economic development as independent variables.

Independent variables

Dependent variable



CHAPTER THREE

3. Research Methodology

This part of the study gives details on how the research activities will be carried out. Therefore, the researcher concentrates on the methods that were adopted throughout the study to accomplish the research objectives. It includes the research design, the type and source of data to be used, the model specifications, estimation techniques and data analysis methodology.

3.1. Research Approach and Design

The research adopted a quantitative research approach to analyze the determinants of international tourist arrival: in case of Ethiopia, Kenya, Tanzania and Uganda using panel data regression analysis for the period of 1995 to 2018.

3.2. Data Source and Methods of Collection

The study employed secondary data that the researcher collected (1995 to 2018) from World Bank (WBO) development indicator database, World Travel and Tourism Council, Ministry of Finance and Economic Development (MOFED), Ethiopian Ministry of Culture and Tourism etc.

3.3. Variable Under the Study

The variables under the study are mainly classified into two. The response variable and variables which are assumed to be explanatory to tourism destination in Ethiopia, Kenya, Tanzania and Rwanda.

- **Response variable:** number of international tourist arrival for 24 years annually
- **Explanatory variables:** From the discussion in different literatures on the factors that may determine tourism in the world including Africa - the researcher identified political stability, and available infrastructure, information communication, and economic development. In most research areas, finding a suitable proxy (or actual variable) is straightforward. Unfortunately, in the case of tourism marketing we use the number of internet users in a country as a proxy to capture the effects of networks and information on tourist flows.

- ✓ Political stability; the researcher takes proxy of political stability which is political stability absence of violence index, world governance indicator world bank, (2018).
- ✓ Consumer price index& official exchange rate;proxy for tour price
- ✓ the number of UNESCO World Heritage sites. This variable is used as control for the influence of important historical and cultural sites on tourism.
- ✓ life expectancy as a proxy for the safety and the quality of the health system of a destination, source is CIA (2018),
- ✓ urbanization: percentage of urban population would be used as proxy
- ✓ the percentage the population who have internet accesses as a proxy for communication possibilities, source is World Bank (2018)
- ✓ number of mobile subscribers and % population using the internet: as proxy for information communication (World Bank (2018)

3.4.Methods of Data Analysis

The study used both the descriptive and econometric methods of data analysis. To analyze the data, statistical package of STATA software version 14 will be used.

3.4.1.Descriptive Statistics

The descriptive statistics of the research will main concentrate assesses the trends and growth rates of international tourism arrivalsin deferent category and their factors using charts, graphs and measuring their central tendencies.And the researcher will be conducting correlation analysis between the determiner and the tourism arrivals over long period of time.Andalso, the researcher will describe the impact of some variable which cannot be addressed by quantitative approaches.

3.4.2.Inferential Statistics

In order to answer the research questions, the researcher intends to apply two the method of dataanalysis—the descriptive statistic’s and the inferential statistics. The inferential statistics will focus on analyzing the data using panel data regression by testing the fixed effect model and random effect model and by applying the statistical analysis using statistical application software like STATA and SPSS.

3.4.2.1. Model specification: Fixed versus Random Effects

The researcher applied the panel data model for this research purpose for different reasons. Panel data, by blending the inter-individual difference's and intra-individual dynamics have several advantages over cross-sectional or time-series data:

- (i) More accurate inference of model parameters. Panel data usually contain more degrees of freedom and more sample variability than cross-sectional data which may be viewed as a panel with $T = 1$, or time series data which is a panel with $N = 1$, hence improving the efficiency of econometric estimates (e.g. Hsiao et al., 1995).
- (ii) Simplifying computation and statistical inference. Panel data involve at least two dimensions, a cross-sectional dimension and a time series dimension. Under normal circumstances one would expect that the computation of panel data estimator or inference would be more complicated than cross-sectional or time series data. However, in certain cases, the availability of panel data actually simplifies computation and inference.
- (iii) Analysis of nonstationary time series. When time series data are not stationary, the large sample approximation of the distributions of the least-squares or maximum likelihood estimators are no longer normally distributed, (e.g. Anderson, 1959; Dickey and Fuller, 1979, 1981; Phillips and Durlauf, 1986). But if panel data are available, and observations among cross-sectional units are independent, then one can invoke the central limit theorem across cross-sectional units to show that the limiting distributions of many estimators remain asymptotically normal (e.g. Binder et al., 2005; Im et al., 2003; Levin et al., 2002; Phillips and Moon, 1999).

Panel data are also called longitudinal data or cross-sectional time-series data. These longitudinal data have “observations on the same units in several different time periods” (Kennedy, 2008: 281); A panel data set has multiple entities, each of which has repeated measurements at different time periods. Panel data may have individual (group) effect, time effect, or both, which are analyzed by fixed effect and/or random effect models. As more and more panel data are

available, many scholars, practitioners, and students have been interested in panel data modeling because these longitudinal data have more variability and allow to explore more issues than do cross-sectional or time-series data alone (Kennedy, 2008: 282). Baltagi (2001) puts, “Panel data give more informative data, more variability, less collinearity among the variables, more degrees of freedom and more efficiency”. Given well-organized panel data, panel data models are definitely attractive and appealing since they provide ways of dealing with heterogeneity and examine fixed and/or random effects in the longitudinal data.

Panel data models examine fixed and/or random effects of individual or time. The core difference between fixed and random effect models lies in the role of dummy variables. Panel data models examine fixed and/or random effects of individual or time. The core difference between fixed and random effect models lies in the role of dummy variables:

Fixed effect model: $y_{it} = (\alpha + u_i) + x_{it}\beta + v_{it}$ equation 1

Random effect model: $y_{it} = \alpha + x_{it}\beta + (u_i + v_{it})$ equation 2

Where y_{it} is the dependent variable number of tourist arrival; x_{it} is the remain explanatory variables; u_i is a fixed or random effect specific to individual (group) or time period that is not included in the regression, and errors are independent identically distributed and $v_{it} \sim IID(0, \delta^2_v)$ The key insight is that if the unobserved variable does not change over time, then any changes in the dependent variable must be due to influences other than these fixed characteristics. (Stock and Watson, 2003, p.289-290).

In the case of time-series cross-sectional data the interpretation of the beta coefficients would be “for a given country, as X varies across time by one unit, Y increases or decreases by β units (Bartels, Brandom, 2008).

A fixed group effect model examines individual differences in intercepts, assuming the same slopes and constant variance across individual (group and entity). Since an individual specific effect is time invariant and considered a part of the intercept, u_i is allowed to be correlated with other regressors; whereas random effect model assumes that individual effect (heterogeneity) is not correlated with any regressor and then estimates error variance specific to groups (or times). Hence, u_i is an individual specific random heterogeneity or a component of the composite error

term. This is why a random effect model is also called an error component model. The intercept and slopes of regressors are the same across individual. The difference among individuals (or time periods) lies in their individual specific errors, not in their intercepts. Although including country fixed effects eliminates the risk of a bias due to omitted factors that vary across country (cross section) but not over time, the researchers suspect that there are other omitted variables that does vary over time like (world heritage site) and thus may cause a bias.

How do we know if fixed and/or random effects exist in panel data in hand? A fixed effect is tested by F-test, while a random effect is examined by Breusch and Pagan’s (1980) Lagrange multiplier (LM) test. The former compares a fixed effect model and OLS to see how much the fixed effect model can improve the goodness-of-fit, whereas the latter contrast a random effect model with OLS. The similarity between random and fixed effect estimators is tested by a Hausman test.

In a regression of $y_{it} = \alpha + \mu_i + x_{it}\beta + v_{it}$ equation 3

- the null hypothesis is that all dummy parameters except for one for the dropped are all zero.

$$H_0: \mu_1 = \mu_2 = \mu_{n-1} = 0 \text{ equation 4}$$

- The alternative hypothesis is that at least one dummy parameter is not zero. This hypothesis is tested by an F test, which is based on loss of goodness-of-fit.

If the null hypothesis is rejected (at least one group/time specific intercept μ_i is not zero), the researcher may conclude that there is a significant fixed effect or significant increase in goodness-of-fit in the fixed effect model; therefore, the fixed effect model is better than the pooled OLS.

Breusch-Pagan LM Test for Random Effects

Breusch and Pagan’s (1980) Lagrange multiplier (LM) test examines if individual (or time) specific variance components are zero;

Null hypothesis $H_0: \delta_u^2 = 0$ The LM statistic follows the chi-squared distribution with one degree of freedom. If the null hypothesis is rejected, you can conclude that there is a significant

random effect in the panel data, and that the random effect model is able to deal with heterogeneity better than does the pooled OLS.

How do the researcher know which effect (fixed effect or random effect) is more relevant and significant in the panel data? The Hausman specification test compares fixed and random effect models under the null hypothesis that individual effects are uncorrelated with any regressor in the model (Hausman, 1978). After this will be issued the researcher estimated the appropriate panel data regression model to analyze the determinants of tourism destination in Ethiopia, Kenya, Tanzania, Uganda over the period of 1995 unto 2018.

Tests of cross-sectional dependence

The impact of cross-sectional dependence in dynamic panel estimators is more severe. In particular, Phillips and Sul (2003) show that if there is sufficient cross-sectional dependence in the data and this is ignored in estimation (as it is commonly done by practitioners), the decrease in estimation efficiency can become so large that, in fact, the pooled (panel) least-squares estimator may provide little gain over the single-equation ordinary least squares. This result is important because it implies that if one decides to pool a population of cross sections that is homogeneous in the slope parameters but ignores cross-sectional dependence, then the efficiency gains that one had hoped to achieve, compared with running individual ordinary least-squares regressions for each cross section, may largely diminish.

Dealing specifically with short dynamic panel-data models, Sarafidis and Robertson (2006) show that if there is cross-sectional dependence in the disturbances, all estimation procedures that rely on OLS and the generalized method of moments (GMM)—such as those by Anderson and Hsiao (1981), Arellano and Bond (1991), and Blundell and Bond (1998)—are inconsistent as N (the cross-sectional dimension) grows large, for fixed T (the panel's time dimension). This outcome is important given that error cross-section dependence is a likely practical situation and the desirable N -asymptotic properties of these estimators rely upon this assumption.

The above indicates that testing for cross-sectional dependence is important in fitting panel-data models. In our situations $T > N$: $T=24$ and $N=4$ the researcher the Lagrange multiplier (LM) test, developed by Breusch and Pagan (1980), which is readily available in Stata through the command `xttest2` (Baum 2001, 2003, 2004). According to Baltagi, cross-sectional dependence is

a problem in macro panels with long time series (over 20-30 years). This is not much of a problem in micro panels (few years and large number of cases).

The null hypothesis in the B-P/LM test of independence is that residuals across entities are not correlated. The command to run this test is `xttest2` (run it after `xtreg, fe`). If the researcher rejected the null hypothesis, the researcher would apply the robust panel data regression analysis.

CHAPTER FOUR

4. Data Analysis and Presentation

4.1. Descriptive Analysis Results

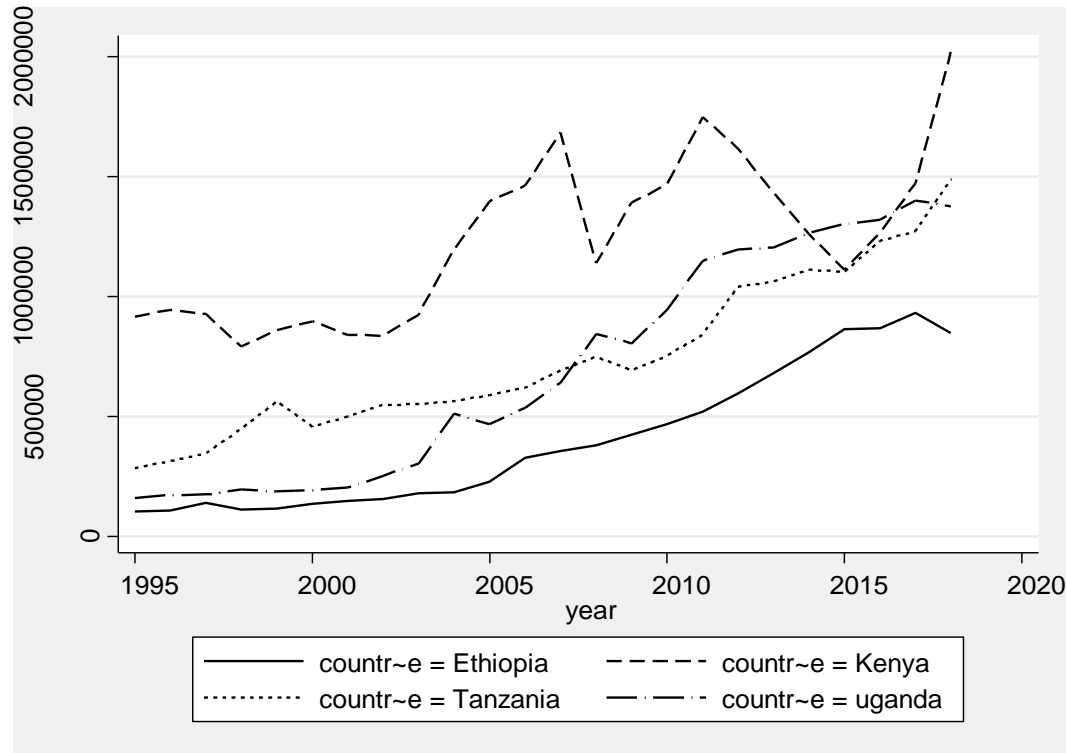


Figure 2 international tourist arrival 1995-2018

In the late 1990s the number of international tourists travelling to Kenya decreased, partly due to the well-publicized murders of several tourists. In 1997 the number of international tourists traveled to Kenya was 92800 this decreased by 14.7% in 1998. The same to that of Ethiopia in 1998 the number of tourist arrival were decreased 19.4% due to Ethiopian Eritrean war. but the two countries Tanzania and Uganda were enjoying slight improvement on their performance. Meanwhile in 2000 the Tanzania tourism recorded 18.6% decline as compared to preceding five-year sustaining growth even if there were remarkable civil unrest and terrorist attack and bombing. After 1998 the Ethiopian tourism performed to slight improvement.

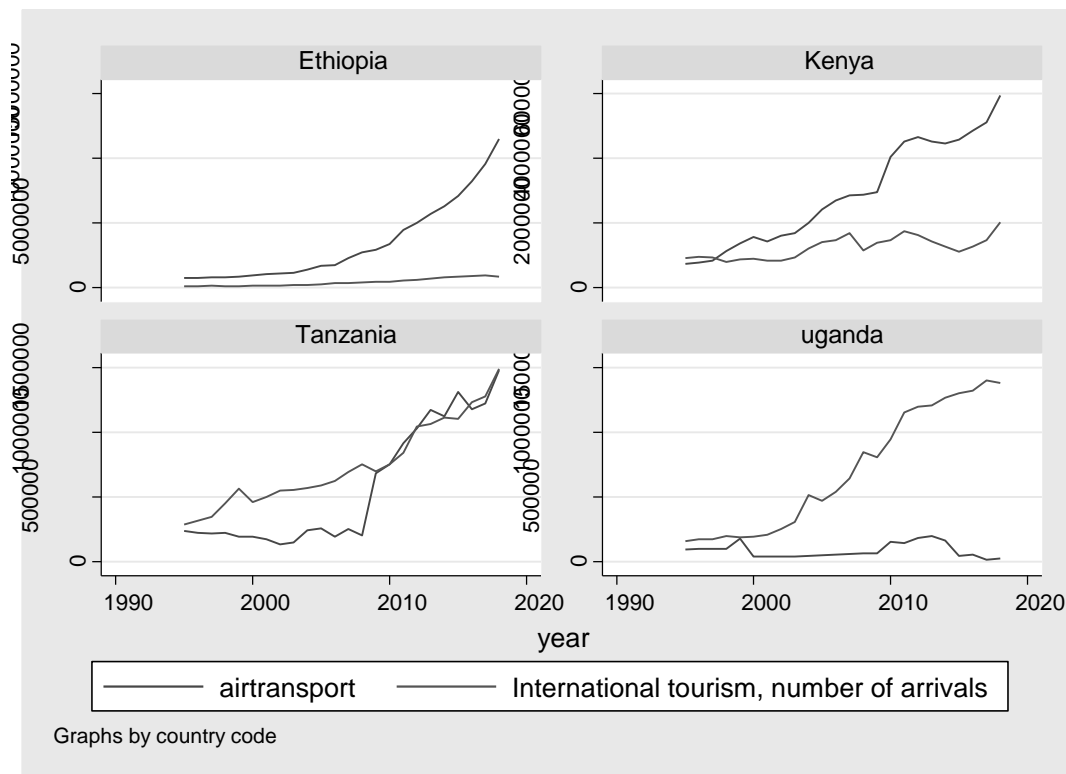


Figure 3 air transport passenger carried test vs tourist arrival 1995-2018

Kenyan tourism was highly improved during 2001-2007. It reaches more than one million arrivals in 2004. After big sustainable growth in tourism sector for five consecutive year the international tourist arrival in Kenya plummeted by 32.32% in 2008 following the presidential election 2007 and Kenyan crisis 2007-2008. And it has been attracting more tourists than the rest of the three countries until 2018.

Since 1995 until 2007 the Tanzania tourism attracts an average of more 27727 internationaltourists than Uganda tourism. In 2008 the Ugandan tourism attracts 94000 more international visitors than Tanzania. And performed to record more than one million arrivals after it was hampered by global financial crisis in 2009- 37000 fewer international tourists was arrived as compared to 2008. After the Kenyan international tourist arrival recorded highest in 2011 (1.75 million arrivals) it continues to decline for five years until 2015. between 2011 and 2017, there were on average 60 attacks each year carried out by different groups, each varying in magnitude. Over half of them are suspected to have been perpetrated by al-Shabaab. travel

restriction also was prompted by some European countries like England. the year 2014- 2015 was also the most challenging year for Kenya tourism near to 100 terrorist attack were recorded and the international tourist arrival was dropped into 1.1 million in 2015 it was laid below Uganda performance.

However, after political riots and security concerns in 2016 the Kenyan tourism started to get great improvement while there has been a visible increase in the number of tourists in Ethiopia after the Ethiopian Eritrean war. Ethiopia welcomed over 933,000 travelers in 2017, a slight increase on the 870,000 recorded in 2016. But such slight improvement was not continued in 2018 since 84000 less tourists were arrived in Ethiopia as it is compared to 2017. And even the growth in tourist arrival in 2016 was less that the preceding years due to the political protests in 2016.

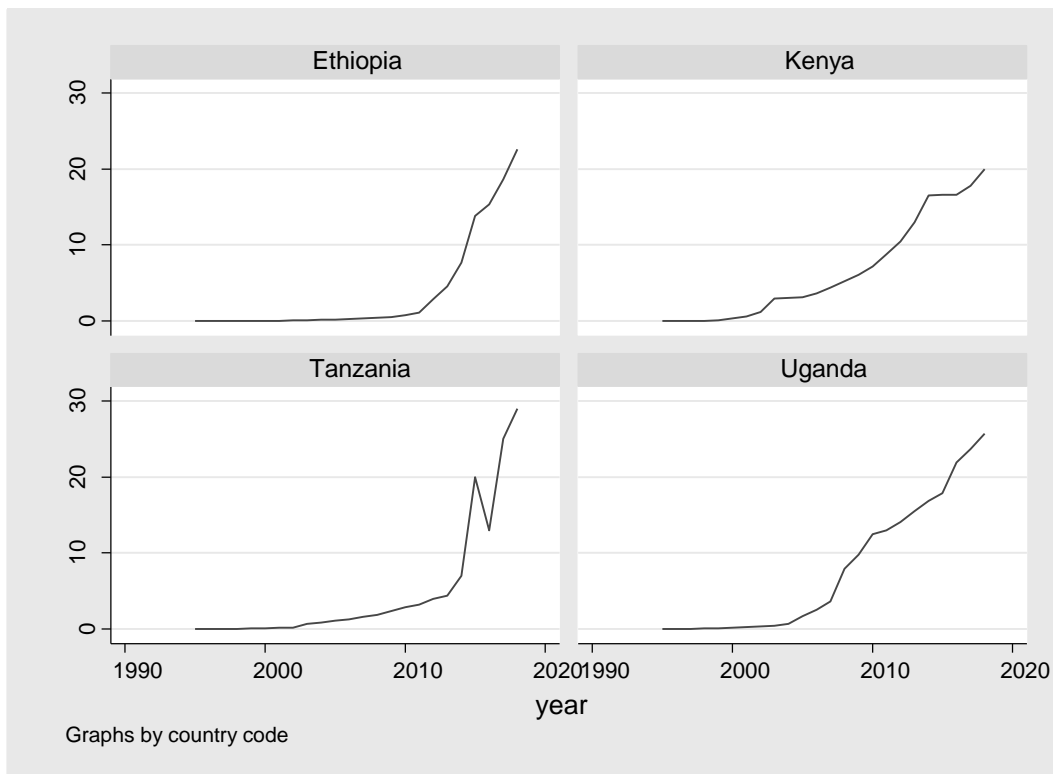


Figure 4 % population using the internet

Ethiopia deserves to be higher on the list of key African tourism markets due to its nine UNESCO World Heritage sites, the air transport infrastructure (Bole International Airport recently overtook Dubai as the major African transit hub). Unfortunately, Ethiopia is still a

relatively unknown tourist destination to the traveling public as the researcher compared the tourist arrival with Kenyan Tanzanian and Uganda. In 2010 Ethiopia had the second lowest Internet penetration in Africa with only less than 500000 direct access to a connection, constituting less than 1 percent of the population. Internet cafes were also the main source of the internet access in the urban area. More than half of those were operating on the Addis Ababa often the service was slow and unreliable as compare to those three countries.

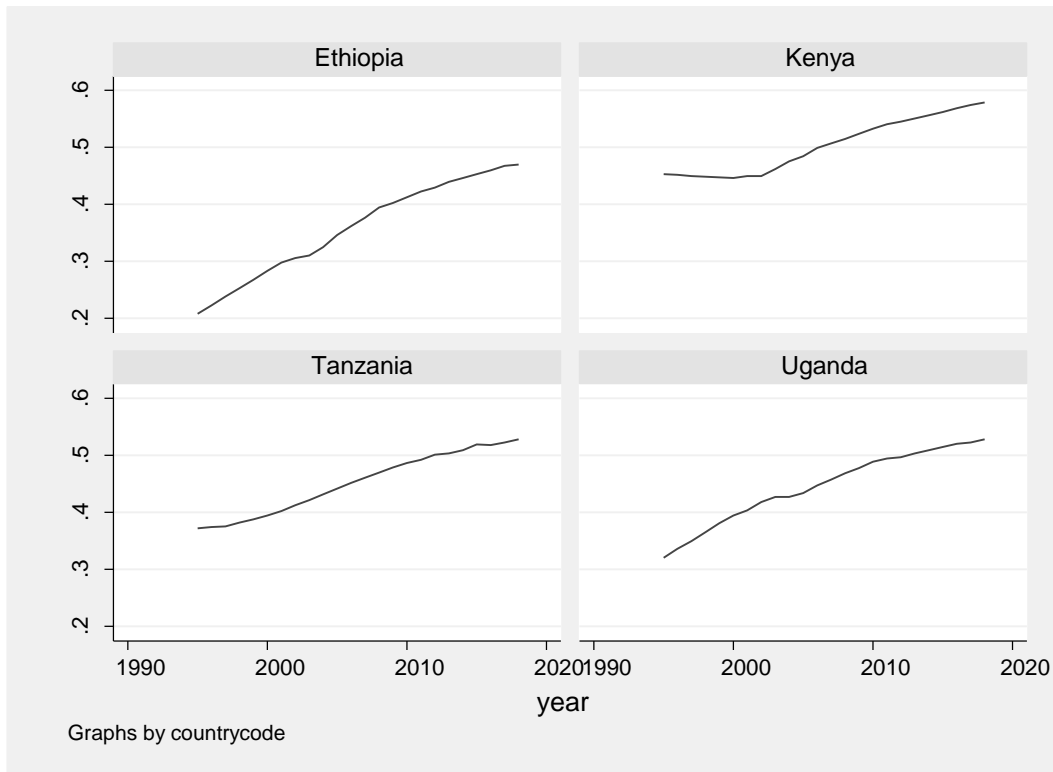


Figure 5 human development index from 1995-2018

4.2. Inferential Data Analysis and Result

In this section the regression results, using random effects/fixed effects, is set out and compared to identify the determinants tourist arrivals in Ethiopia, Kenya Tanzania and Uganda. One dependent variable is used, namely total tourist arrivals in those four countries.

4.2.1. Panel Data Regression Results

Using panel data allows one not only to investigate dynamic relations, but also to control for unobserved cross-section heterogeneity. With panel data, the issue is whether to use a random effects or fixed effects estimation approaches. Accordingly, to determine which of these estimators are more appropriate to use in the present case, both a fixed effects (FE) and random effects (RE) estimator was initially used to estimate equation (6) and the Hausman specification test done to evaluate the assumption in the random effects model that v_{it} is orthogonal to x_{it} . The researcher also used the Breusch-Pagan Lagrange Multiplier (LM) test to test for if the variance of the intercept components of the composite error term is zero. Rejection of the null in both these cases would lead to rejection of the random effects estimator. The results of the Hausman Specification Tests and Breusch-Pagan LM Tests are summarized in Table 1 below.

Before using *xtreg* the researcher needs to set Stata to handle panel data by using the command `xtset, type:`

```
. xtset countrycode year
      panel variable:  countrycode (strongly balanced)
      time variable:  year, 1995 to 2018
      delta: 1 unit
```

Figure 6 panel data description

In this case “country code” represents the entities or panels (i) and “year” represents the time variable (t). The note “(strongly balanced)” refers to the fact that all the four countries have data for all years. If, for example, one country does not have data for one year then the data is unbalanced. Ideally, the researcher would want to have a balanced dataset but this is not always the case, however the researcher can still run the model.

Fixed effects: Heterogeneity across countries:

Control for time effects whenever unexpected variation or special events may affect the outcome variable but the researcher is expecting variation across period of time. As shown two-way scatter plot the mean of international tourist arrival across entities heterogeneous. There is an increment in the variance of international tourist arrival across the countries as shown in figure 5 below. Ethiopian tourism was relatively late in terms of international tourist arrival next to Uganda. In 2018 Kenyan tourism attracts more tourists than the others/ the three countries.

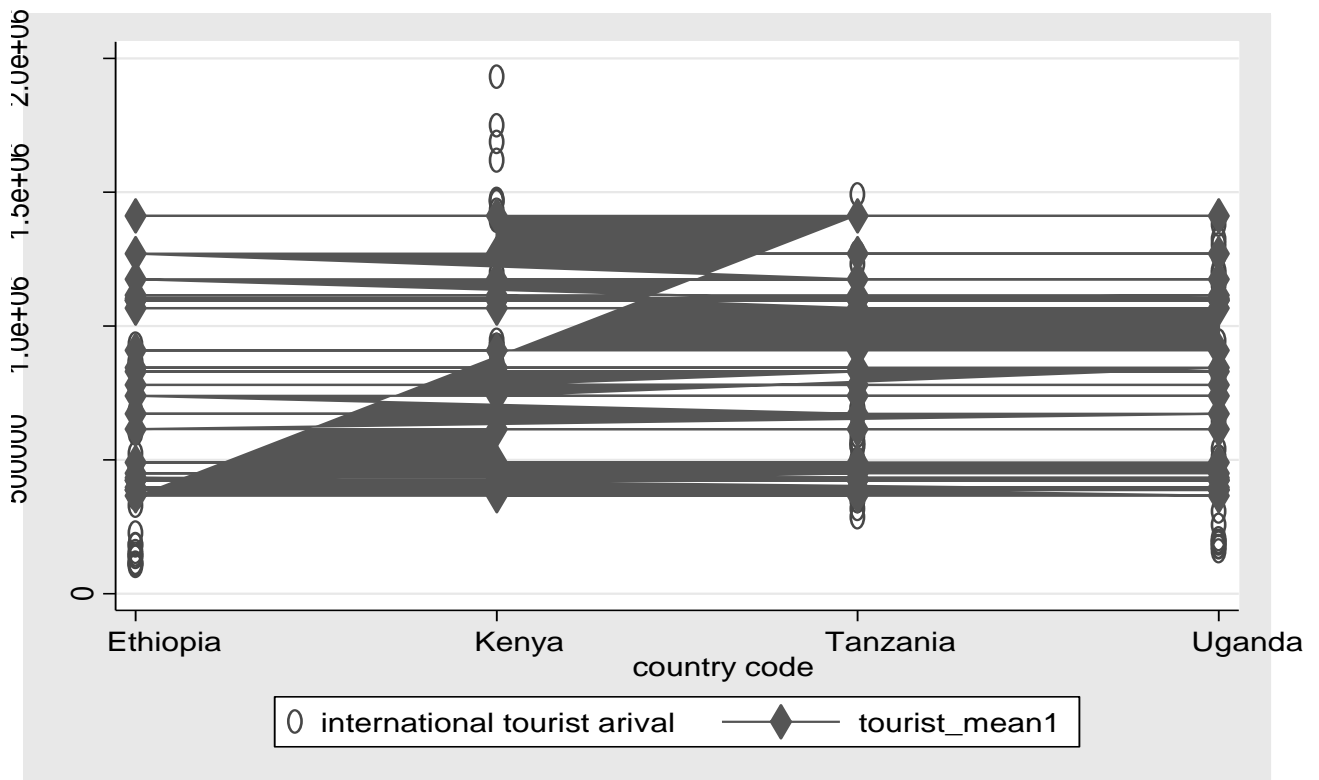


Figure 7 Heterogeneity across countries

Test for random effects

```
. xttest0
```

Breusch and Pagan Lagrangian multiplier test for random effects

```
touristarival[countrycode,t] = Xb + u[countrycode] + e[countrycode,t]
```

Estimated results:

	Var	sd = sqrt(Var)
tourist~1	2.07e+11	454529.4
e	1.74e+10	131884.9
u	0	0

Test: Var(u) = 0

chibar2(01) = 0.00

Prob > chibar2 = 1.0000

Figure 8 Breusch and pagan lagrangian multiplier test for random effect

In the table 1 above, Breusch and Pagan Lagrangian multiplier test for random effects, under the null hypothesis of there are no random effect, the finding suggested that the researcher cannot reject the null hypothesis that there is no random effect in our panel data under the minimum 5% level of significance. Therefore, the random effect model is does not significantly able to deal with heterogeneity better than does the pooled OLS. So, the researcher cannot apply the random effect model. Since there no significant random effect in our data the researcher does not need to apply The Hausman Specification test for random fixed effect.

Finally, the researcher concludes that there is a significant fixed effect or significant increase in goodness-of fit in the fixed effect model; therefore, the fixed effect model is better than the pooled OLS. conclude that there is a significant fixed effect or significant increase in goodness-of-fit in the fixed effect model; therefore, the fixed effect model is better than the pooled OLS. The results are contained in Table 3 below.

Test for fixed effect

Fixed effects: four country-specific intercepts using xtreg

```
. xtreg touristarival internetuser lex cpi urbanization exrate pvel logair logmob lnhd, fe
```

Fixed-effects (within) regression	Number of obs	=	92
Group variable: countrycode	Number of groups	=	4
R-sq:	Obs per group:		
within = 0.8827	min =		20
between = 0.5606	avg =		23.0
overall = 0.0577	max =		24
	F(9,79)	=	66.05
corr(u_i, Xb) = -0.6362	Prob > F	=	0.0000

Figure 9 fixed effect goodness fit test

As given on the above fixed effect regression result the goodness of fit measured by **within R²**= 0.8827 which indicates that 88.27% of explanatory variables in the above model account for changes in the number of international tourist arrival over time. $Corr(u_i X\beta) = -0.6362$ is the correlation between the fixed effect the explanatory variables. strong correlation of this type usually indicates that pooled OLS or random effects will not be suitable for your purpose because both of these models assume that the correlation between u_i and $X\beta$ is zero.

Fixed effects: four country-specific intercepts using xtreg results for estimated coefficients

touristari~l	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
internetuser	10239.44	5369.761	1.91	0.060	-448.8003	20927.68
lex	49019.72	13860.93	3.54	0.001	21430.22	76609.22
cpi	606.9431	957.8836	0.63	0.528	-1299.676	2513.563
urbanization	-78253.02	28125.65	-2.78	0.007	-134235.7	-22270.31
extrate	332.0178	89.89638	3.69	0.000	153.0835	510.9521
pvel	91477.32	65910.72	1.39	0.169	-39714.68	222669.3
logair	106927.7	39010.81	2.74	0.008	29278.64	184576.8
logmob	45875.57	16143.28	2.84	0.006	13743.17	78007.97
lnhdi	-810031.8	483355.6	-1.68	0.098	-1772127	152063.4
_cons	-3391343	1084606	-3.13	0.002	-5550198	-1232488
sigma_u	640879.19					
sigma_e	131884.89					
rho	.95937206	(fraction of variance due to u_i)				

F test that all u_i=0: F(3, 79) = 16.48

Prob > F = 0.0000

Figure 10 fixed effect model coefficients

Where internetuser = the number of populations who use an internet

Logmob = natural log of total number of populations subscribed mobile phone

Lnhdi = natural log of human development index

Logair= natural log of air transport passenger carried out

Pve= political stability and absence of violence index

Exrate= exchange rate in USD

LEX = life expectance at birth

Cpi= Consumer price index

Urbanization = percentage of urban population

- The results in Table 3 indicates that at the end of table test for overall significance test for fixed effect model under the null hypothesis no fixed effect model; the researcher reject the

null hypothesis of all coefficients are statistical insignificant since $\text{prob} > F = 0.000$ which is less than 5% confidence level. So, the researcher concludes that there is statistically significant fixed effect model at 95% statistical confidences.

- telecom infrastructure like percentage of the population using the internet and mobile subscribers, capacity of air transport passenger carried out, and exchange rate have significant positive impact to the inflow of international tourist arrival in Ethiopia Kenya Tanzania and Uganda. Unfortunately, the above result shows that urbanization (percentage of urban population) and human development index (that is used proxy for education and health and GDP at 10% level of significance) have negative linkage with the inflow number of tourist arrival in those country aggregately. The political stability and absence of terrorism index used as proxy for political stability is not significantly affect tourist arrival in the research areas. And also, the consumer price index used as proxy for tour cost is not also significantly determine the number of international tourist arrival in Ethiopia, Kenya, Tanzania and Uganda at 10% level of significance. Value of $\rho = 95.93\%$ of the variance is due to differences across panels.

Then final for the fixed effect model with 95% statistical confides would be:

$$\hat{y}_t = \hat{\beta}_0 + \hat{\beta}_1 x_{1t} + \hat{\beta}_2 x_{2t} + \hat{\beta}_3 x_{3t} + \hat{\beta}_4 x_{4t} + \hat{\beta}_5 x_{5t} + \hat{\beta}_6 x_{6t} + \hat{\beta}_7 x_{7t} + \hat{v}_t \dots \text{equation 5}$$

Where $\hat{\beta}_1, \hat{\beta}_2 \dots \hat{\beta}_6$ are the coefficient of estimated parameters of estimated equation and

$$\hat{y}_t = -3391343(1084606) + 49019.72(13860.93)x_{1t} + 78253.02(28125.65)x_{2t} + 332.0178(89.89638)x_{3t} + 106927.7(39010.81)x_{4t} + 45875.5(16143.2)x_{5t} + \hat{v}_t \dots \text{equation 6}$$

Where, X1= life expectancy at birth of total population

X2= % urban population

X3= exchange rate

X4= natural log of air transport carried out annually

X5= natural log of mobile subscription and

\hat{v}_t = is error term which is unexplained by the model.

The coefficient of $\widehat{\beta}_1=49019.72$ indicated that as unit change in the = life expectancy at birth of total population by one year then international tourist arrival will increases by 49019.72 additional visitors, other variables remaining constant. Under the assumptions of *ceteris paribus*, As The unit change(devaluation) in annual average official exchange rate would result in 332.0178 additional international tourists to arrive. And holding other variables constant, the unite percentage change in annual air transport passenger carried out in the region will result 106927.7 additional number of international tourists to arrive in the region.

The slop for percentage of urban population in the above fixed effect model were -78253.02 indicating the negative relationship between urbanization and number of tourist arrival, *ceteris paribus*. this coefficient is unusual; but uncontrol urbanization may be leads to distraction of historical site, deforestation, loss of wild life, and air pollution which are endogenous to un-anticipated urbanization directly affect the tourism performance negatively, Zhang and Wan (2015).

Finally,45875.5 number of international visitors will arrive as the result of the a unite percentage change in number of mobile subscribers in the region, holding other variables remaining constant.

4.2.2. Post estimation diagnostics checking

Test for normality of residuals:the researchernow wish to compare the distribution of residuals with the normal distribution: as shown in the kernel residual normality plot the residual follows the normal distribution since plot depicted the residual normality line close to the theoretical normal distribution plot (the red line).The result shows that the distributions are not far from normal.

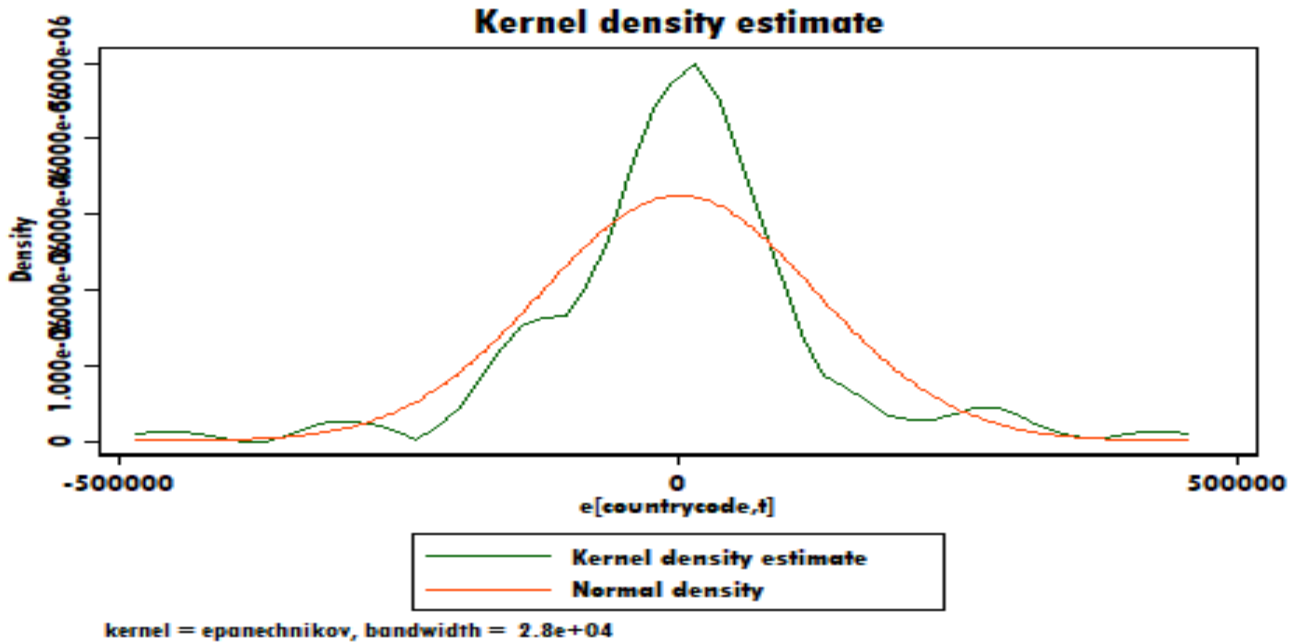


Figure 11 residual normality

Testing for time-fixed effects

To see if time fixed effects are needed when running a FE model use the command `testparm`. It is a joint test to see if the dummies for all years are equal to 0, if they are then no time fixed effects are needed. As shown in the result below for the test of time fixed effect the $\text{Prob} > F$ is > 0.05 , so the researcher failed to reject the null that the coefficients for all years are jointly equal to zero, therefore no time fixed effects are needed in this case.

$$\begin{aligned}
 F(23, 56) &= 1.23 \\
 \text{Prob} > F &= 0.2614
 \end{aligned}$$

Figure 12 test for time fixed effect

Test of cross-sectional independence

As shown in the result below the p -values for Breusch-Pagan LM test of independence were $Pr = 0.4158$. therefore, the researcher failed to reject the null hypothesis that residuals across entities are not correlated. As a result, the researcher has no serial dependency problem. Our fixed effect model has no bias as the result of the lack of cross-sectional independence across the four entities (countries). Hence, the researcher does not need to further robust panel regression.

Breusch-Pagan LM test of independence: $\chi^2(6) = 6.067$, Pr = 0.4158

Based on 20 complete observations

Figure 13 test for cross sectional independence

CHAPTER FIVE

5. Conclusion and Recommendation

5.1. Conclusion

The aim of this paper was to explain the determinants of international tourist arrival to east African countries specifically Ethiopia, Kenya, Tanzania, and Uganda taking into account typical factors that are present within the continent, such as political and social instability, telecom capacity, air transport passenger carrying capacity, the economic and economic development. The key variables, as identified by authors such as Lim (1997), and Andrea (2004) were also taken into account.

The variables used were, air transport passenger carried, mobile subscription, % of population using the internet, the consumer price index (2010=100), political stability, human development index, world heritage sites. Some of the main problems encountered centered on the issue of obtaining data in Africa and some proxies had to be used to obtain a complete data set. Because of the limitations of cross-sectional data, panel data techniques were employed to estimate the determinants of tourist arrivals in the above described countries. static panel data regressions (fixed effect vs random effect) were applied by comparing with pooled ordinary least square regression. the diagnostics was checked for heteroscedastic problem using plots, correctional independence check using brush Pagen LM test of independence and for the need of time fixed effect in the model using “testparm” in stata, and heteroskedasticity problem using two-way scatter plots.

The panel data results depicted that the percentage change in the air transport passenger carried out annually were significantly determine the international tourist arrival in Ethiopia, Kenya, Tanzania, and Uganda. In the panel data analysis, tour price, were measured by consumer price index(2010=100) and official exchange rate (per US\$) hence the official exchange rate(per US\$) of the countries were significantly determine the number of international tourist arrival in those countries. The telecom infrastructure which is capture by the two-proxy variable namely mobile subscriptions (the total population subscribed to mobile phone number) and percentage of the

population using the internet were significantly determine the number of international tourist arrival. specifically, the percentage of the population using the internet were determine the international tourist arrival in Ethiopia, Kenya, Tanzania and Uganda at 10% level of significance. Moreover, the percentage change in the number of mobile subscriptions in those countries were significantly determine the number of international tourist arrival at 5% confidence level. However,percentage of the urban population negative and significantly determine the number of international tourist arrival at 95% statistical confidence. And the same is true for the percentage change in human development index which were not significant determinants of international tourist arrival at 5% level of significance but it is less significant at 90 % statistical confidence – which determines the international tourist arrival in those countries.

5.2. Recommendation

Taking into consideration the findings in this study, the researcher recommends the government and stakeholders to work towards making Ethiopian, Kenya, Tanzania and Uganda tourism products more competitive by developing/improving infrastructure in the country. Specifically assessing the policies that improve the air transport capacity in terms of passenger carried out, and improving telecom infrastructure would last in high performance of their tourism industry in terms of number of international tourist arrival. Moreover, the researcher recommends that government and stakeholders to work towards making Ethiopian, Kenya, Tanzania and Uganda tourism to focus on the improving the life expectancy of the nations which have strong image in attracting international tourists.

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Appendix

Contains data from C:\Users\love\Desktop\research data.dta

obs: 96
 vars: 16 28 May 2020 14:32
 size: 5,760

variable name	storage type	display format	value label	variable label
year	int	%8.0g		
touristarival	double	%8.0g		international tourist arival
internetuser	float	%8.0g		Individuals using the Internet (% of population)
lex	float	%8.0g		Life expectancy at birth, total (years)
cpi	float	%8.0g		Consumer price index (2010 = 100)
urbanization	float	%8.0g		% urban population
airtransport	long	%8.0g		air transport passenger carried out
countrycode	byte	%8.0g		country code
exrate	float	%8.0g		exchange rate
hdil	float	%8.0g		human development index
pvel	float	%8.0g		poetical stability index
mobilecellulars	long	%8.0g		Mobile cellular subscriptions
logair	float	%9.0g		logarith of air transport passenger carried out
logmob	float	%9.0g		natural log of mobile subscription
_est_fx	byte	%8.0g		esample() from estimates store
lnhdi	float	%9.0g		natural log of human development index

Sorted by:

Note: Dataset has changed since last saved.

Figure 13 descriptions of variables under the study

```
. xtreg touristarival internetuser lex cpi urbanization exrate pvel logair logmob lnhdi, re
```

```
Random-effects GLS regression           Number of obs   =           92
Group variable: countrycode            Number of groups =            4

R-sq:                                   Obs per group:
    within = 0.8184                      min =           20
    between = 0.9966                     avg =           23.0
    overall = 0.8812                     max =           24

Wald chi2(9) =           608.06
corr(u_i, X) = 0 (assumed)              Prob > chi2     =           0.0000
```

touristari~l	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
internetuser	27930.66	5553.99	5.03	0.000	17045.04	38816.28
lex	5926.193	9760.362	0.61	0.544	-13203.76	25056.15
cpi	-3706.868	836.9332	-4.43	0.000	-5347.227	-2066.509
urbanization	-10208.64	9687.445	-1.05	0.292	-29195.69	8778.401
exrate	35.20051	60.78714	0.58	0.563	-83.94008	154.3411
pvel	88063.42	81131.93	1.09	0.278	-70952.24	247079.1
logair	91042.73	37724.51	2.41	0.016	17104.06	164981.4
logmob	-2907.563	16059.35	-0.18	0.856	-34383.32	28568.19
lnhdi	2120799	199869.7	10.61	0.000	1729061	2512536
_cons	1469976	540153.1	2.72	0.007	411295.2	2528656
sigma_u	0					
sigma_e	131884.89					
rho	0	(fraction of variance due to u_i)				

Figure 14 random effect model coefficients

	Coefficients			
	(b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
internetuser	10239.44	27930.66	-17691.22	.
lex	49019.72	5926.193	43093.53	9841.79
cpi	606.9431	-3706.868	4313.811	465.9225
urbanization	-78253.02	-10208.64	-68044.38	26404.66
exrate	332.0178	35.20051	296.8173	66.22902
pvel	91477.32	88063.42	3413.905	.
logair	106927.7	91042.73	15884.99	9935.038
logmob	45875.57	-2907.563	48783.13	1644.007
lnhdi	-810031.8	2120799	-2930830	440096.2

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(8) = (b-B)'[(V_b-V_B)^(-1)](b-B)
 = 53.96
 Prob>chi2 = 0.0000
 (V_b-V_B is not positive definite)

Figure 15 Hausman fixed-effect random-effect

```
. summ touristari~1 internetuser lex cpi urbanization airtransport exrate hdi1 pve1 mobilecell~s mobilecell~s logmob lnhdi
```

Variable	Obs	Mean	Std. Dev.	Min	Max
touristari~1	96	770801.8	467953.8	103000	2020299
internetuser	96	5.784401	7.707001	.0000175	29
lex	96	56.2052	6.099343	43.824	66.3
cpi	96	90.98842	55.10003	25.31329	249.0905
urbanization	96	20.79483	4.967536	12.846	33.776
airtransport	96	1742434	2267869	14958	1.15e+07
exrate	96	864.0925	990.3069	6.158333	3727.069
hdi1	96	.439375	.0819666	.208	.579
pve1	96	-1.003372	.4522357	-1.803412	.0891499
mobilecell~s	96	1.25e+07	1.49e+07	0	5.12e+07
mobilecell~s	96	1.25e+07	1.49e+07	0	5.12e+07
logmob	92	14.36536	3.094956	7.465655	17.75172
lnhdi	96	-.8425732	.2111691	-1.570217	-.5464528

Figure 16 summary of the variables under the study

```
. xttest2
```

Correlation matrix of residuals:

	__e1	__e2	__e3	__e4
__e1	1.0000			
__e2	-0.5037	1.0000		
__e3	0.0892	-0.0604	1.0000	
__e4	-0.0824	0.1091	-0.1390	1.0000

Breusch-Pagan LM test of independence: chi2(6) = 6.067, Pr = 0.4158

Based on 20 complete observations

Figure 17 cross-sectional test of independence

```
. testparm i.year

( 1) 1996.year = 0
( 2) 1997.year = 0
( 3) 1998.year = 0
( 4) 1999.year = 0
( 5) 2000.year = 0
( 6) 2001.year = 0
( 7) 2002.year = 0
( 8) 2003.year = 0
( 9) 2004.year = 0
(10) 2005.year = 0
(11) 2006.year = 0
(12) 2007.year = 0
(13) 2008.year = 0
(14) 2009.year = 0
(15) 2010.year = 0
(16) 2011.year = 0
(17) 2012.year = 0
(18) 2013.year = 0
(19) 2014.year = 0
(20) 2015.year = 0
(21) 2016.year = 0
(22) 2017.year = 0
(23) 2018.year = 0

F( 23, 56) = 1.23
Prob > F = 0.2614
```

Figure 18 test for time fixed effect