

# **DETERMINANTS OF INBOUND TOURISM TO KENYA**

**BY**

**PETER KIANO CHABARI**

**X50/60409/2013**

**Research Project Submitted to the School of Economics, University of Nairobi**

**In Partial Fulfillment of the Requirements for the Award of the**

**Degree of Masters of Arts in Economics**

**November, 2014**

**DECLARATION**

I declare that this is my original work and that it has not been submitted in any University for any degree award.

**PETER KIANO CHABARI**

SIGNATURE:.....DATE.....

This Research Paper has been submitted in partial fulfillment for the award of a degree of Masters of Arts in Economics with our approval as University Supervisors.

**DR. LUCY MARY MBITHI**

SIGNATURE.....DATE.....

**PROF. TABITHA KIRITI NG'ANG'A**

SIGNATURE..... DATE.....

## **DEDICATION**

I dedicate this research paper to my beloved wife Faith, my dear daughter Patience, dear sons Finley and Myles. You are great people and you make my life meaningful.

## ACKNOWLEDGEMENT

If it were not of the Ministry of Devolution and Planning that offered me full scholarship funded by the AfDB and GoK, the MA Economics programme would have been an uphill task. I thank Ms. Beatrice Manyonge, Ms. Fresia Kamau and Mr. Joseph Mukui for their consideration.

Doing things alone in the world of academics is almost an impossible undertaking. My classmates provided the environment that could not have been provided by anybody else. Thank you for all the support that you offered to me in anyway. I cannot forget to thank Bro. James Murunga for his 'true loving people heart'. You have assisted many through MA Economics course and may you maintain the same spirit.

My family you have been there for me. You never reserved any effort from praying, guiding, encouraging and supporting me during my studies. Patience, Finley and Myles I will never forget the first evening I came home from my MA Economics class; you asked why I was not in school uniform and demanded to see my homework. Am excited by the way you have been enjoying my passing exams news.

During data collection spree in the Ministry of Devolution and Planning; Ministry of East African Affairs, Commerce and Tourism; Kenya National Bureau of Statistics; Kenya Tourism Board and University of Nairobi, I met people who really went out of their way to assist me – they took my work as if it was their own. I sincerely appreciate your assistance.

Am almost missing the right words to acknowledge my two supervisors (Dr. Lucy Mary Mbithi and Prof. Tabitha Kiriti-Ng'ang'a). May I just say thank you for the spirit of 'a great teacher'. Out of your very busy schedules you made sure you were available for guidance whenever I booked an appointment with you. This research project could not have been a reality without your persistent but sure guidance.

Last but not least I thank the Almighty God for His ceaseless providence. Nothing can move on without His grace.

However, I accept full responsibility for any flaws in the writing of this paper.

## LIST OF TABLES

<b>Table 1:</b> %age GDP Contributions by Sectors in Kenya (1980, 1990, 2000, 2011 & 2012).....	4
<b>Table 2:</b> Summary Statistics.....	27
<b>Table 3:</b> Variance Inflation Factors.....	35
<b>Table 4:</b> Correlation Matrix before differencing.....	35
<b>Table 5:</b> Correlation Matrix after differencing.....	36
<b>Table 6:</b> Breusch-Pagan / Cook – Weisberg test for heteroscedasticity.....	36
<b>Table 7:</b> Breusch-Godfrey LM test for Autocorrelation.....	37
<b>Table 8:</b> Shapiro Wilk test for residuals.....	37
<b>Table 9:</b> Augmented Dickey Fuller test for unit root.....	38
<b>Table 10:</b> The Engle-Granger test.....	39
<b>Table 11:</b> Regression results for linear model .....	40

## LIST OF FIGURES

<b>Figure 1:</b> Tourist Arrivals by Purpose of Visit ('000) (1983-2012) to Kenya.....	2
<b>Figure 2:</b> Earnings from Tourism for Kenya from 2001-2012 in Ksh. Billion .....	3
<b>Figure 3:</b> Arrivals from UK to Kenya.....	28
<b>Figure 4:</b> UK Gross Domestic Product per capita.....	29
<b>Figure 5:</b> Relative Price between Kenya and UK.....	30
<b>Figure 6:</b> Accommodation Capacity of the destination country (Kenya).....	31
<b>Figure 7:</b> Public Investment as a ratio of GDP.....	32
<b>Figure 8:</b> UK population .....	33
<b>Figure 9:</b> Advertisement .....	34

## LIST OF ACRONYMS AND ABBREVIATIONS

<b>ADF</b>	– Augmented Dickey - Fuller
<b>AIDS</b>	– Almost Ideal Demand Systems
<b>BPO</b>	– Business Processing off-shoring
<b>CPI</b>	– Consumer Price Index
<b>ECM</b>	– Error Correction Model
<b>EX</b>	– Exchange Rate
<b>GDP</b>	– Gross Domestic Product
<b>ICCA</b>	– International Congress and Convention Association
<b>KICC</b>	– Kenyatta International Conference Centre
<b>KNBS</b>	– Kenya National Bureau of Statistics
<b>KTB</b>	– Kenya Tourism Board
<b>OLS</b>	– Ordinary Least Squares
<b>PEV</b>	– Post Election violence
<b>STSM</b>	– Structural Time Series Model
<b>TVP</b>	– Time Varying Parameters
<b>TVP-AIDS</b>	– Time Varying Parameter Almost Ideal Demand Systems
<b>TVP-STSM</b>	– Time varying Parameter Structural Time Series Model
<b>UK</b>	– United Kingdom
<b>UNWTO</b>	– United Nations World Tourism Organization
<b>USA</b>	– United States of America
<b>VIF</b>	- Variance Inflation Factor
<b>WTA</b>	– World Travel Awards
<b>WTM</b>	– World Tourism Market

## TABLE OF CONTENTS

<b>DECLARATION.....</b>	<b>i</b>
<b>DEDICATION.....</b>	<b>ii</b>
<b>ACKNOWLEDGEMENT.....</b>	<b>iii</b>
<b>LIST OF TABLES.....</b>	<b>iv</b>
<b>LIST OF FIGURES.....</b>	<b>v</b>
<b>LIST OF ACRONYMS AND ABBREVIATIONS.....</b>	<b>vi</b>
<b>ABSTRACT.....</b>	<b>x</b>
<b>CHAPTER ONE: INTRODUCTION.....</b>	<b>1</b>
1.1 Background of the study.....	1
1.2 Kenya National Tourism Policy.....	5
1.3 Kenya’s Global and African Position in Tourism.....	6
1.4 Problem Statement.....	8
1.5 Research Questions.....	8
1.6 Objectives of the Study.....	9
1.7 Significance of the Study.....	9
1.8 Organization of the Study.....	10
<b>CHAPTER TWO: LITERATURE REVIEW.....</b>	<b>11</b>
2.0 Introduction.....	11
2.1 Theoretical Literature.....	11
2.1.1 Factors that Influence the Demand for Tourism.....	12
2.2 Empirical Literature.....	15
2.3 Overview of Literature Review.....	18
<b>CHAPTER THREE: METHODOLOGY.....</b>	<b>19</b>
3.0 Introduction.....	19
3.1 Theoretical Framework.....	19
3.2 Empirical Model.....	19
3.2.1 Description of Variables.....	20
3.2.2 The expectations for the signs of the parameters are:-.....	23
3.3 Tests.....	23



3.3.1 Multicollinearity Test.....	23
3.3.2 Test for Heteroscedasticity .....	24
3.3.3 Test for Autocorrelation.....	24
3.3.4 Unit Root Test.....	25
3.3.5 Co-integration Analysis .....	25
3.3.6 Normality Test .....	26
3.4 Data.....	26
3.4.1 Data Source.....	26
3.4.2 Data Analysis.....	26
<b>CHAPTER FOUR: RESULTS AND DISCUSSION.....</b>	<b>27</b>
4.0 Introduction.....	27
4.1 Descriptive statistics .....	27
4.2 Trends of the economic variables used in the study .....	28
4.3 Tests.....	34
4.3.1 Multicollinearity Test.....	34
4.3.2 Tests for Heteroscedasticity.....	36
4.3.3 Tests for Autocorrelation.....	36
4.3.4 Normality Test .....	37
4.3.5 Unit root tests.....	37
4.3.6 Tests for Cointegration .....	39
4.4 Regression results for General Linear Model.....	39
<b>CHAPTER FIVE: SUMMARY, CONCLUSIONS AND POLICY RECOMMENDATIONS.....</b>	<b>42</b>
5.0 Introduction.....	42
5.1 Summary of the study findings.....	42
5.2 Conclusions.....	42
5.3 Policy Recommendations.....	43
5.4 Limitations of the study .....	43
5.5 Areas of further study .....	43
<b>REFERENCES.....</b>	<b>44</b>

**APPENDICES .....49**

Annex 1: Tourist Arrivals to Kenya from various Countries of Residence ..... 49

Annex 2: Data used in the Study..... 50

## **ABSTRACT**

Tourism is one of the six priority sectors identified in the economic pillar of Kenya Vision 2030 development blue print of Kenya. These sectors are expected to spur Kenya's Economic Growth to double digit and retain that growth to the year 2030 and beyond. Despite making positive progress, Kenya has not fully exploited the existing potential in the tourism sector. This study explores the factors that influence the inbound tourism to Kenya. Specifically, it investigates factors that influence the international tourist arrivals in Kenya from the major source market. The study employs General Linear model in estimation upon addressing the basic assumptions of the Ordinary Least Square (OLS) which includes accounting for Multicollinearity, No serial correlation, Normality, Unit root test, heteroscedasticity and Cointegration. At 95% confidence interval, Relative prices between the sending and receiving country, Population of the sending country (UK), and tourism advertisement costs incurred by KTB are revealed to be positively and statistically significant factors that affect inbound tourism in Kenya. Based on the study findings, it is suggested that the Government of Kenya through the Ministry of East African Affairs, Commerce and Tourism and various tourism agencies should focus in re-examining its tourism promotion strategies and contemplate expanding new markets from other countries with relatively high population as well as high prices compared to Kenya.

## CHAPTER ONE: INTRODUCTION

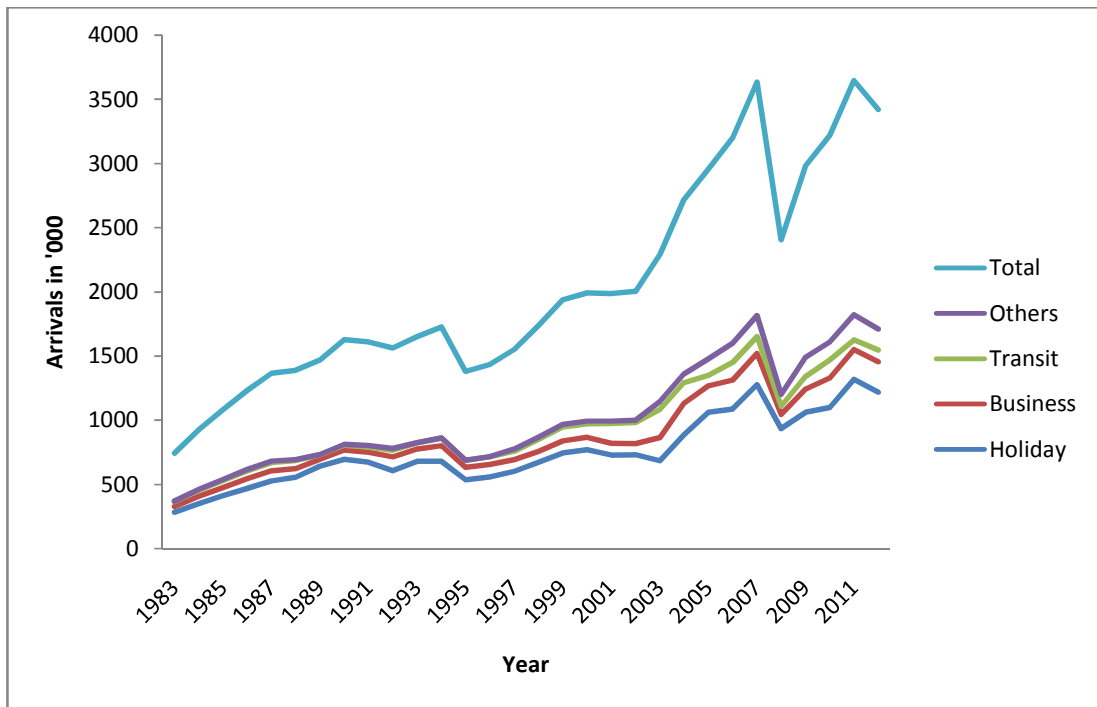
### 1.1 Background of the study

It's not easy to define a 'tourist' or 'tourism' in a fashion which will meet undisputed approval. However, the standard definition in the group of nations is a tourist is any person travelling for a period of twenty four hours or more in a country other than in which he resides. Therefore, tourism is taken to comprise of the activities of persons travelling and staying in places outside their usual environment for not more than one consecutive year for leisure, business, transit and other purposes. It can also be defined as business of attracting and transporting visitors, accommodating them and graciously catering to their needs (Lickorish, 1958).

There are two broad levels of tourism, 'in bound or international' tourism involving visitors from other countries travelling to and holidaying in the host country where there is need for the consumers to cross the national borders in order to satisfy their demand. There is also 'Internal or domestic tourism' which involves residents travelling outside their normal domicile to other areas within their home country. Domestic tourism is a substitute for foreign travel, so it saves foreign currency for the country of residence of the domestic tourism and reduces income for the countries that would have been visited (Republic of Kenya, 2007).

It is not possible to talk about international tourism demand to Kenya without talking about international tourist arrivals to Kenya because tourism arrival is the measure of tourism demand. The Figure 1 overleaf tracks the number of international tourists' arrivals to Kenya from 1983 to 2012 by purpose of visit and the overall total visitors hence the demand for international tourism to Kenya.

**Figure 1: Tourist Arrivals by Purpose of Visit ('000) (1983 – 2012) to Kenya.**

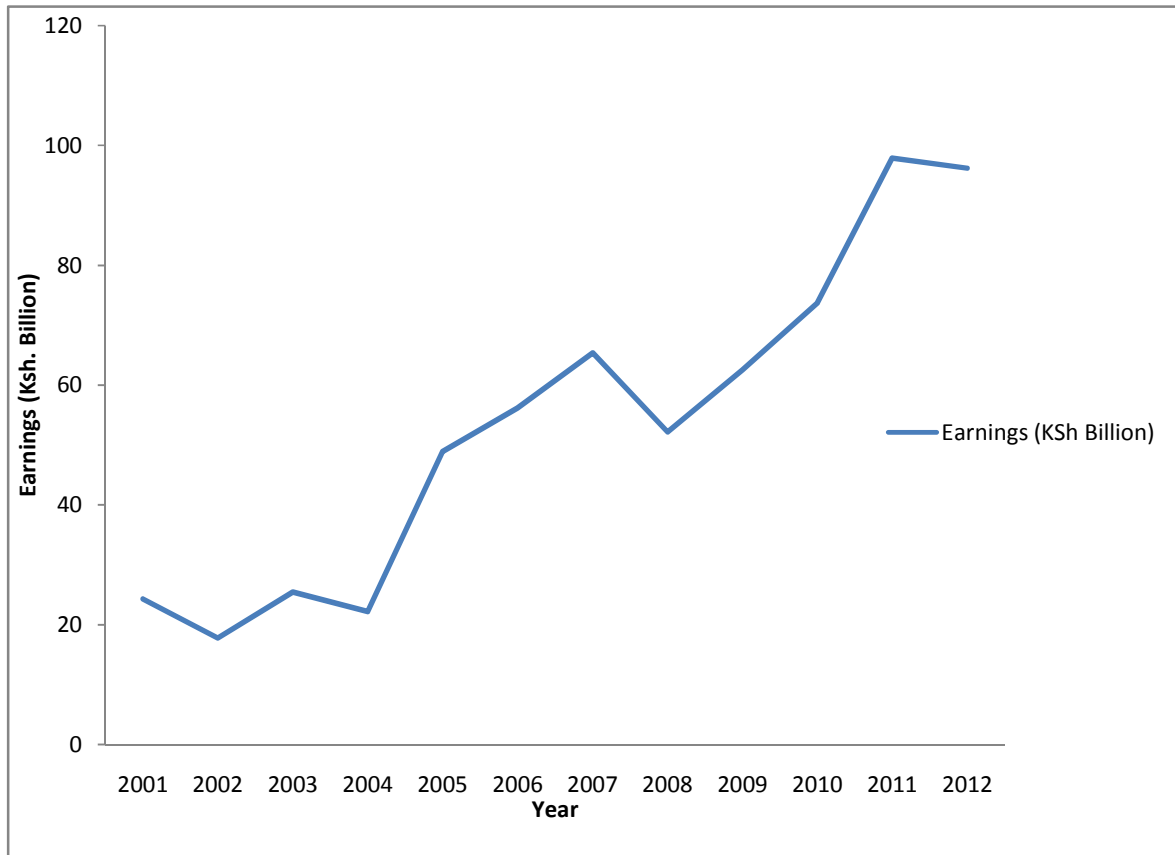


**Source:** Kenya National Bureau of Statistics: Economic Surveys (1983-2012)

As can be observed from Figure 1, there has been general increase in demand for tourism to Kenya over the years. All types of visitors indicated in the Figure 1 have been increasing. However, there has been some drastic and notable decline in all types of visitors and hence total visitors in some years like 1992, 1995, 2002, 2008 and 2012 amongst others. Some of these declines in the demand for tourism to Kenya like 1992, 1995 and 2002 can be associated with insecurity because of ethnic clashes experienced in those years. In 2008 there was post-election violence (PEV) that possibly contributed to decline in the demand. The decline in demand in 2012 can be associated with anticipated violence like that of 2008 because it was election year by prospective visitors. This study will confirm all this in the analysis.

Another way of measuring the demand for tourism is by looking at the tourism earnings. The Figure 2 below shows the earnings of Kenya from tourism from the year 2001 to year 2012.

**Figure 2: Earnings from Tourism for Kenya from 2001 – 2012 in Ksh. Billion**



**Source:** Kenya National Bureau of Statistics: Economic Surveys (2001-2012)

From Figure 2 it can be observed that it is consistent with Figure 1. Generally from year 2001 to year 2012 the tourism earnings grew tremendously with notable declines in years 2002, 2004, 2008 and 2012. Of course again in 2002, 2004 there was ethnic clashes that scared away the prospective tourists who usually bring in the tourism earnings. In 2008 there was PEV that led Kenya to be insecure preferred destination and in year 2012 there were travel advisories because there was anticipation of reoccurrence of 2008 scenario since it was an election year.

Tourism occupies a special and important position in Kenya's National Development Strategy as anchored in the Kenya Vision 2030. It is one of the six key sectors identified in the economic pillar that will catapult the growth rate in Kenya's Gross Domestic Product (GDP) from 5.6 percent in 2010 to 10 percent for the period between now and 2030 to attain the Vision's goal. The contribution from tourism is contingent to "polishing of the Gem"

through new products development and preservation of wildlife and natural resources (World Bank, 2010).

Kenya Vision 2030 aimed at increasing tourism’s contribution to GDP to more than Sh. 200 billion and increase international arrivals to 3 million by 2012 while expanding hotel beds capacity from 40,000 to at least 65,000 (Republic of Kenya, 2007).

The tourism sector has continued to perform well despite various challenges affecting the sector. This has been attributed to Government commitment in providing an enabling environment coupled with successful tourism promotion and the efforts aimed at diversification of source markets and ventures into emerging economies.

By focusing on the tourism sector, Kenya aspires to be among top ten long haul tourist destinations offering a high-end, diverse, and distinctive visitor experience. China, Mexico and Malaysia are the leading destinations for long-haul tourists worldwide, accounting for 47 million, 22 million and 16 million annual visitors, respectively. In Africa, Egypt and South Africa are the leading long-haul tourist destinations (Republic of Kenya, 2007). To be ranked among the top ten long haul tourist destinations, Kenya must concentrate its efforts working on the factors that determine the inflow of tourists.

Tourism, agriculture, manufacturing, wholesale and retail, business process off shoring (BPO) and financial services contribute 57 percent of the total GDP and account for approximately half of the country’s formal employment (Republic of Kenya, 2007).

Again to be specific the table 1 below shows the sectoral shares in real GDP in percentages for the years 1980, 1990, 2000, 2011 and 2012.

**Table 1: Percentage GDP Contributions by Sectors in Kenya (1980, 1990, 2000, 2011 & 2012)**

<b>Sector \ Year</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>	<b>2011</b>	<b>2012</b>
Agriculture	33	30	32	23	24.2
Industry & Manufacturing	20	19	17	19	14.8
Services	47	51	51	58	61.0

**Source:** United States. Central Intelligence Agency, (2013)

Kenya’s service sector, which is dominated by tourism, has been contributing more than 50 percent of GDP all the years as Table 1 shows.

## **1.2 Kenya National Tourism Policy**

The National Tourism Policy represents a comprehensive strategic framework for the development of Kenya's tourism. It contains many interdependent and interlocking elements.

Kenya has for many years been well renowned in world tourism and was originally the most developed and premier destination in Sub-Saharan Africa. In recent years, the prime position has been overtaken due to competition from new contenders, in the beach as well as the lucrative Wildlife Safari Market (Republic of Kenya, 2006).

The first statement of national tourism policy was set out in Sessional Paper No. 8 of 1969 which established growth targets for the industry and spelled out strategies as to how the Government would both participate and encourage participation by the private sector in tourism development so as to achieve the desired growth targets. Since then, successive National Development Plans and other relevant public policy documents (including the Japanese – funded National Tourism Master Plan of 1995) have placed great emphasis on the development of the tourism sector through creation of an enabling environment and maintenance of an open door policy towards foreign investment in tourism (Republic of Kenya, 2006).

The overall aim of the national tourism policy is to ensure that tourism retains its position as leading export, and that it becomes a major vehicle for job creation, poverty reduction and wealth creation for Kenyans in the future, and whose practices are closely harmonized with key national policies and laws pertaining to wildlife conservation, land ownership and physical planning (Republic of Kenya, 2006).

In order to be able to achieve the aforementioned aim, the following policy instruments are outlined in the document to be utilized: development of conducive and attractive environment, resource base and sustainable development; involvement of local communities in the development of tourism; timely resolution of conflict and land use planning; enhancing safety and security and finally development and diversification of tourism product (Republic of Kenya, 2006)



### **1.3 Kenya's Global and African Position in Tourism**

Since 1950s, rapid growth has been the main characteristic of the demand for the tourism industry. According to the World Tourism Organization, the total number of tourists in the world increased from 25 million persons in 1950 to 160 million persons in 1970, 429 million persons in 1990, 689 million persons in 2001, and 919 million persons in 2011. International tourism continued growing in 2012 although at a slower rate. Arrivals were expected to increase, reaching the historic one billion mark by the end of the year 2012 (United Nations World Tourism Organization, 2012). The arrivals surpassed the projection to 1.035 billion tourists. This number of international tourists, increased by 5 percent to 1.087 billion in 2013. The UNWTO expects international tourist arrivals to continue increasing up to 4.5 percent in 2014. The statistics reveal that the ever increasing number of tourists shows the importance of the tourism industry in the world economy.

It's a globally known fact that Kenya and the wider East African region are the premier destination for travelers who seek to enjoy the scenic beauty and nature's endowments that the region is blessed (Leisure and Travel Guides East Africa Ltd, 2014).

From Annex 1 (see appendices) it can be observed that United Kingdom (UK) is the largest market for international tourist to Kenya. This study has considered UK to represent the international market for tourist source to Kenya.

The top ten tourists destinations in Kenya are Masai Mara National Reserve because of the 'Great Migration' that takes place every year from July to October when millions of wildebeest and zebra migrate from the Serengeti in Tanzania; Amboseli National Park for its fame for being the best place in Africa to get close to free-ranging elephants. Other attractions of the park include opportunities to meet the Maasai people and spectacular views of Mount Kilimanjaro. Lake Nakuru National Park because of its flamingos, Tsavo National Park for its wilderness being the largest park in Kenya and one of the largest in the world. Lamu Island is part of Kenya's Lamu Archipelago and has managed to stay unspoiled and untouched by the mass tourism that has hit much of Kenya's coastline. Hell's Gate National Park for its dramatic scenery, with steep cliffs, gorges and basalt columns. It is home to a wide variety of wildlife, though many are few in number. Samburu National Reserve where all the three big cats, lion, cheetah and leopard, can be found, as well as elephants, buffalo and hippos. UasoNyiro River that runs through it contains large numbers of Nile crocodile.

Mount Kenya the highest mountain in Kenya and the second-highest in Africa. Malindi provides a very nice introduction to the coastal tourist attractions in Kenya with its extensive coral reefs and beautiful beaches. Nairobi National Park is famous for migrating wildebeest and zebra gather in the park during the dry season, and it is one of Kenya's most successful rhinoceros sanctuaries (Leisure and Travel Guides East Africa Ltd, 2014).

The introduction of the single Tourist Visa for the three East African countries (i.e Kenya, Uganda and Rwanda) from January 2014 during the World Tourism Market (WTM) in UK, is facilitating free movement of tourist and citizens alike hence boosting tourism in the region(Leisure and Travel Guides East Africa Ltd, 2014).

Kenya was once again named world's leading safari destination at the 20<sup>th</sup> World Travel Awards (WTA) grand finale in Doha, Qatar. Kenya got the most votes from travel agents worldwide at the auspicious ceremony event held on 30<sup>th</sup> November 2013 to beat other competing destinations. The award came barely a month after the country's tourism marketing agency; Kenya Tourism Board (KTB) was voted Africa's leading Tourism Board in Africa by WTA during the African chapter held in Kenya in October 2013 (Leisure and Travel Guides East Africa Ltd, 2014).

Kenya has been ranked second in Conference Tourism in Africa and 58<sup>th</sup> globally in the Country and City rankings 2012 report by the International Congress and Convention Association (ICCA) – a worldwide umbrella body for international conference and conventions. The country hosted 29 International Association Conferences with the country's conference hub – The Kenyatta International Conference Centre (KICC) playing host to most of them. On City ranking, Nairobi, which hosted 22 conferences emerged 100<sup>th</sup> best city destination for international association conferences globally, up from the 104<sup>th</sup> position it held in 2011. The Kenyan capital is also the 2<sup>nd</sup> best city in Africa after Cape Town in South Africa (Kenya Tourism Board, 2014).

#### **1.4 Problem Statement**

While the number of international visitors increased to a record 1.6 million in 2010, other top tourist destinations like South Africa and Egypt attracted four to five times more tourists than Kenya (8.5 million in Egypt and 7.5 million in South Africa). In addition, the average spending per tourist in Kenya is lower than in other destinations (e.g tourist expenditure per capita is 70 per cent more in Egypt). This shows that Kenya has enormous potential for increasing tourist arrivals and overall earnings. While the number of tourists and length of stay have been increasing over time, average spending by a tourist per day, which has been Sh. 53,705.60 per stay per tourist in 2011 and Sh. 56,231.00 per stay per tourist in 2012, has been low compared to competing destinations.

In Kenya, tourism remains a leading earner of foreign exchange for the country, and brought in US\$800 million in 2006. Due to its many linkages to other sectors (including agriculture, manufacturing, banking and finance, wildlife, entertainment and handicrafts), tourism has great potential to generate employment and wealth. Currently, tourism activity in Kenya is responsible for approximately 21 percent of Kenya's total foreign exchange earnings. It accounts for about 12 percent of Kenya's GDP making it third contributor after Agriculture and Manufacturing and employs at least 9 percent of Kenya's formal sector workforce (Republic of Kenya, 2007; Republic of Kenya, 2010).

In addition, the receipts from tourism contribute substantially in financing the current account deficit of the balance of payments in this country. Additionally, most of the targets of the first Medium Term Plan of Kenya Vision 2030 have not been achieved; hence making it crucial to investigate the weight of the presumed factors of determining international tourist inflows. These are strong and convincing arguments to justify the study on the analysis of the determinants of the demand for tourism in Kenya and might constitute an important guideline for the policy making institutions.

#### **1.5 Research Questions**

The study sought to answer the following questions:-

- What are the factors that determine the inbound tourism to Kenya?
- How significant are the factors that determine the inbound tourism to Kenya?

- What are the policy implications arising from this study?

### **1.6 Objectives of the Study**

The main objective of the study is to investigate the determinants of inbound tourism to Kenya.

The specific objectives are:-

- To determine the factors that influences the international tourist arrivals in Kenya from the major source market.
- To investigate the significance of the factors that determine the international tourism to Kenya
- Draw policy suggestions for planners and decision makers

### **1.7 Significance of the Study**

Kenya in its major development blueprint (Kenya Vision 2030) has identified six priority sectors that promise to raise GDP growth rate to the region of 10 per cent in a number of years. These sectors are: Tourism; agriculture and livestock; wholesale and retail; manufacturing; finance and business processing outsourcing/off shoring.

In the tourism sector, Kenya aims to be among the top ten long-haul tourism destination globally. Hence there is need to investigate the factors that determine the inflow of international tourism in the country.

Some studies have been done both in Kenya and abroad like a study by Kimuyu, (2009) but these studies have only put into consideration the demand factors while ignoring the supply factors. This study will bring both the demand and supply factors on board and investigate their contribution to the demand of tourism. After the investigation and deductions done, advice will be done to the policy makers and decision makers effectively.

If Kenya is to realize the goals of Vision 2030, then since tourism is the major sector in the vision and again the major foreign exchange earner, the determinants of tourism have to be identified so that the country can pay attention to them. The Vision is equally targeting more international tourist as compared to local / domestic tourists. The findings of this study will

be used by policy making institutions in the country to track and if need be review the existing National Development Plans and other Policy Documents to capture the recommendations.

### **1.8 Organization of the Study**

Chapter one is the introduction where the background information is given. It also includes the statement of the problem, the objectives, research questions and justification of the study. Chapter two provides a review of the literature on the demand of tourism explaining the theoretical and empirical aspects. Chapter three explains the methodology and the model to be estimated, data sources and description of the variables. Chapter four presents the results from the model estimations and their analysis. Chapter five gives conclusions, recommendations and policy implications.

## CHAPTER TWO: LITERATURE REVIEW

### 2.0 Introduction

This chapter of literature review will contain three sections: - one is the theoretical literature, two is the empirical literature and three is the overview of the literature review. The first section will be looking at the existing theoretical development as far as the demand for tourism is concerned. The second section will be looking at the studies that have been done on tourism demand and what the study found out and the third section will comprise of personal observations based on both theoretical and empirical literatures.

### 2.1 Theoretical Literature

The theoretical explanation of the movement of a tourist from the source to the destination country is supported by the demand function. The product emanating from the demand of tourism is the total amount of the individual's desire to travel within a given period of time. Looking at it from the destination country perspective, tourism demand is a group of goods and services that the visitors purchase during a specific period of time of their permanence. Song and Witt (2000) define tourism demand as the amount of a set of tourist products that the consumers are willing to purchase during a given period of time and under some given conditions which are determined by the explanatory factors used in the demand equation. Stucka (2002) discloses that a lot of empirical studies try to model the movement of tourism between the destination and the source countries by specifying a demand function of the type:-

$$C = f(Y, P) \text{ ----- (1)}$$

Where  $C$  stands for tourist consumption in the receiving country,  $Y$  is income per capita of the supplying country as a measure of its purchasing power capacity and  $P$  is a relative price index to measure price levels between the source and the destination countries. Other studies on demand for tourism compare price levels between different destination countries with a price-substitution effect.

According to the literature review by Lim (1997) on the econometric modeling of tourism demand, there is no any standard measure of tourism movement which is universally

acceptable. Majority of the empirical studies define international tourism demand by using either the number of foreign visitors crossing the borders or the number of nights spent by visitors from abroad or the receipts originating from the visitors spending; or the length of stay of tourists visiting the destination country. There is no single measure that is fully satisfactory in bringing together all the aspects which characterize the demand for tourism in a given location.

The most appropriate variable to be used as the dependent variable in the demand for tourism equation is tourism receipts from the point of view of the destination country or tourism spending from the point of view of the origin country (Tse, 1999; Lathiras and Siriopoulos, 1998). But according to Crouch and Shaw (1992), almost 75 percent of the studies that approximated tourism demand functions have used the number of entrances as the dependent variable (Qui and Zhand, 1995; Morris, Wilson and Bakalis, 1995; Kulendran, 1996; Akis, 1998). What leads to choice has been the unavailability of data on tourism spending.

### **2.1.1 Factors that Influence the Demand for Tourism**

Crouch (1994a) identifies a huge number of potential factors that explain tourism demand and the specification of the demand function changes as per the period of the study, the countries used, the type of the data (time series or panel data) and the nature of tourism (holidays, business trips, visits to family or friends, etc.). The degree of freedom loss, collinearity problems, data reliability, omitted variable bias or endogeneity inconsistency, are the problems that originate from the choice of the explanatory variables to be included in the models.

Socioeconomic factors, like income level, relative prices between the source and the receiving places, length of the leisure time, urbanization and demography; technical factors like communications and transport; psychological and cultural factors reflecting personal preferences and the style of life of the potential travelers; and random factors related to unexpected events, like political instability, weather conditions, natural disasters, epidemic diseases, etc. are identified by Crouch (1994a), as a set of potential determinants that can influence the decision to travel.

### 2.1.1.1 The Income Factor

According to the literature review on demand for tourism, income per capita is identified as the most important factor to influence the decision of people to travel. As shown in the empirical literature on the same demand, the demand for tourism and the length of staying are directly related to the level of income of the potential travelers and inversely related to the domestic cost of living. Hence, the purchasing power position of the potential travelers is the dominant factor in explaining tourist flows (Crouch, 1994b).

The Gross National Product (Garin-Munoz and Amaral, 2000; Qui and Zhang, 1995) or the Gross Domestic Product (Kulendran and Wilson, 2000; Lathiras and Siriopoulos, 1998) in real or nominal terms but, in per capita terms has been used to proxy the level of wealth of the sending country. Some other studies use the Industrial Production Index (Gonzalez and Moral, 1995) and the families' disposable income as measures of economic wealth. Most studies use the real per capita income as the most appropriate indicator to measure people's living standards of the sending country.

Based on Witt and Witt (1992) tourism is a luxury product with an expected income elasticity of demand higher than one. And according to Crouch (1995), income elasticities of the demand for tourism are specific to each country and no generalization can be made about its value.

### 2.1.1.2 The Price Factor

Tourism is a consumption product just like any other products. The products prices will greatly influence the decision of the household. Based on the price of the tourism product; the household will make a decision of either to consume tourism or other products especially durables. After deciding to consume tourism then the household has to make a choice of the destination country based on the costs of travelling and other expenses related to tourism (which is the price of tourism) but maximizing its utility subject to budget constraint.

In other words, it is assumed a world of only two commodities: tourism goods  $q_t^{tourism}$  and all other goods  $q_t^o$ . Hence a demand function for tourism is obtained by maximizing the utility function subject to the budget constraint:

$$\begin{aligned}
 \text{Max:} \quad & u = u(q_t^{tourism}, q_t^o), \\
 \text{s.t:} \quad & Y_t^o = (P_t^{tourism} q_t^{tourism} + P_t^o q_t^o) \text{-----} (2)
 \end{aligned}$$



where  $Y^o$  is the consumer's income and  $P_i$  represents prices. Forming a lagrangian function and first –order derivation with respect to  $q^o$  and  $t^{tourism}$  one can solve equation (2) to obtain the demand function for tourism and all other goods. This demand function denotes demand for tourism as a function of the price of tourism products and services, price of other goods, and the level of the consumer's income. This can be denoted as:-

$$q^{tourism} = f(P^{tourism}, P^o, Y, \dots). \text{-----} (3)$$

It should be noted that the increase in general prices of the sending country reduces the purchasing power of the potential traveler hence reducing the demand for tourism. And number two, the increase in general prices of the receiving country reduces the demand for tourism in that particular country and may be the potential traveler decision to other cheaper alternative places. In this context two prices have to be considered; one is the relative price between the receiving country and the sending country and two, the relative prices between different competing destination places which originate the substitution price effect.

The relative price variable which is normally used in the demand for tourism function is the ratio of the consumer price indexes between the destination and the origin countries adjusted by the bilateral exchange rate (Kulendran and Wilson, 2000; Lathiras and Siriopoulos, 1998). In the same way, some authors (Turner, Reisinger and Witt, 1998; Lathiras and Siriopoulos, 1998) introduce the same ratio between different competing countries to count for the price substitution effect.

### **2.1.1.3 Other Factors**

In many studies on the demand for tourism, total population of the sending country is used as an explanatory variable in the demand for tourism function to count for the market size. The rationale behind this variable is that large countries constitute a potential market for supplying tourists and, therefore, more economies of scale can be explored. A trend variable is also used to capture specific households' behaviour, such as, inertia, consumers' preferences and habits in this sector. The same variable can also capture cyclical effects, demographic changes in the sending country or supply improvements in the receiving country (Mello and Sinclair, 2002).

Because of the dynamics into the demand function and persistence of the revisit in tourists' behavior, the lagged dependent variable in the tourism demand function is usually included.

According to Sinclair and Stabler (1997) tourists are averse to risk. They prefer to visit places that they are already familiar to or places they have heard something positive about.

Witt and Witt (1995) point out another possible explanation for the inclusion of an autoregressive term in the demand function of tourism: a certain rigidity from the supply side behaviour. Supply factors related to transportation facilities, human capital qualifications, accommodation capacity and generally the provision of efficient services are long term issues involving structural changes and better reallocation of resources in the sector. Long term or medium term contracts of the operating agencies can be another source of rigidities as Carraro and Manente (1994) explains.

## **2.2 Empirical Literature**

Syriopoulos and Sinclair (1993) used an Almost Ideal Demand System (AIDS) to estimate tourism demand by the Western European countries and US for the Mediterranean destination between 1992 and 1975. Their findings indicated that the expenditure elasticities demonstrated considerable differences in tourism demand preferences between source countries and between traditional and newly developing destinations. The own-price and cross-price elasticities indicated the importance of effective prices in determining the allocation of expenditure among destinations.

Lyssiotou (2000) investigated how preference endogeneity, in the form of habit persistence, can affect short-run and long-run tourism expenditure decisions. The author used a dynamic demand system to model British demand for tourism abroad using British quarterly data over the period 1979–1991. The study found that preference endogeneity appears to have a significant effect on both short-run and long-run tourism expenditure decisions.

De Mello, Pack and Sinclair (2002) used AIDS to approximate demand of tourism of Britain for its southern neighbour destinations (France, Spain, and Portugal) between 1970 and 1993. The study showed that the ratio of tourism spending of England to Spain increased compared to the other two destinations.

Hellstrom (2006) applied households' choice of the number of leisure trips and the total number of overnight stays using tourism data for Sweden. The study modelled the

quantity decision with a bivariate mixed Poisson log-normal model allowing for both positive and negative correlations between count variables. The study used a bivariate hurdle approach separating the participation (to travel and stay the night or not) from the quantity (the number of trips and nights). The approximation results indicated a negative correlation between the nights and number of trips.

Ouerfelli (2008) used a cointegration analysis and error correction models (ECMs) to approximate the long-run demand of tourism elasticities and to forecast the quarterly European tourism demand for a one-year-ahead horizon. The author found that there is variation in European tourists' behaviour from one country to another.

Kulendran and Dwyer (2009) estimated the return per dollar investment in tourism industry in Asia applying a dynamic modelling approach and cost-effectiveness analysis using Australian data. The study found that the return per dollar investment was 7:1 for the USA and 17:1 for Asia. These results had implications for targeting the highest yield markets to increase the economic returns to Australia from its destination marketing activity.

Song, Li, Witt and Fei (2010) estimated demand for Hong Kong tourism by residents of Australia, the UK, and the USA. Using the general-to-specific modelling approach, they found that tourist arrivals in Hong Kong are influenced mainly by tourists' income and habit persistence effects, while the tourism price in Hong Kong relative to that of the tourist source country is the most important determinant of tourist expenditure in Hong Kong.

Moore (2010) studied the potential effects of climate changes on tourism demand for Caribbean destinations, and a cross-country tourism demand model was augmented with relative tourism climatic indices to examine the importance of an island's climatic features. The author concluded that climate changes had direct effects on tourist arrivals to the region.

Song and Wong (2003) used the TVP approach to tourism demand modelling based on a data-set of the demand for Hong Kong tourism by residents from six major tourism origin countries. Also, Wu, Li and Song (2012) studied the dynamics of the consumption behaviour of tourists using a TVP-AIDS model. They used the top four source markets for tourism in

Hong Kong. The result of the elasticity analysis revealed different consumption trends and patterns across the source markets.

Athanasopoulos and Hyndman (2008) used a regression framework to estimate important economic relationships for domestic tourism demand in Australia. They also captured the impact of world events such as the 2000 Sydney Olympics and the 2002 Bali bombings on Australian domestic tourism. They employed state-space models with exogenous variables and showed that these models outperform alternative approaches for short-term forecasting. Comparing their forecasts with the official Australian government forecasts, they found that the latter is more optimistic.

Song, Li, Witt and Athanasopoulos (2011) attempted to forecast tourist arrivals to Hong Kong with time-varying parameter structural time series (TVP-STSM) model. The empirical results showed that the TVP-STSM outperforms all seven competitors, including the basic and causal STSMs and the TVP model for one-quarter-ahead to four-quarter-ahead ex post forecasts and one-quarter-ahead ex ante forecasts.

Song, Dwyer, Li and Cao (2012) attempted to summarize most up-to-date survey of tourism economics research and key trends in its recent development. They found that while neoclassical economics has contributed the most to the development of tourism economics, alternative schools of thought in economics have also emerged in advancing the understanding of tourism from different perspectives. As tourism studies are multi-band interdisciplinary, they suggested that integrating economics with other social science disciplines will further contribute to knowledge creation in tourism studies.

Chenguang, Li and Song (2012) investigated the effect of four source markets for tourism in Hong Kong and three major tourist expenditure categories, including shopping, hotel accommodation, and meals outside hotels with use of TVP-AIDS model. Elasticity analysis revealed different consumption trends and patterns across the source markets.

### **2.3 Overview of Literature Review**

As observed from the literature review, many studies have been carried out to investigate the factors forecasting the demand for tourism in different destinations. Different models have respectively been utilized.

All studies on demand for tourism have enormously agreed that income and price are some of the factors influencing the demand for tourism. Most of the studies have utilized what we refer to as demand factors.

This study also looks at other factors on the supply-side. It uses a total of seven variables and one dummy variable. One of the seven variables is the independent variable and six dependent variables. Out of six dependent variables, two were on the supply side while four were demand factors. This made the study the first to utilize such many variables.

## CHAPTER THREE: METHODOLOGY

### 3.0 Introduction

This section contains four parts namely: - theoretical framework, the model, the data and tests. Theoretical framework looks at the model in theory form. Then the second section looks at the model that is utilized and its description. The data section looks at the data source and its analysis and lastly tests that are required during analysis.

### 3.1 Theoretical Framework

An individual's demand for a commodity is the quantity of the commodity an individual is willing and able to buy at any given period of time. Economic theory has it that consumer's demand for commodity X over a given period of time is usually influenced by the price of the commodity; price of other related commodities; level of consumer's income; changes in consumer's tastes, fashions and preferences for the commodity; future expectation of changes in price and quantity supplied; changes in population; advertising; seasonal changes; distribution of income; terms of sale; government policy among other factors.

Thus we can have  $d_x = f(P_x, P_{xy}, y, \dots\dots\dots)$ .

The demand for the commodity is a function of all the factors listed above. But if we can hold constant all other factors apart from the price of the commodity; the demand for the commodity can be said to be a function of its price.

That is  $d_x = f(P_x)$ , ceteris peribus

### 3.2 Empirical Model

From the theoretical framework it can be deduced that demand for tourism is influenced by many factors among them individual's income; price of the tourism; availability of accommodation in the destination country; customer care; quality/standards of hotels; infrastructure; population of the source country; advertisement; natural resource endowment and security.

The study uses tourist arrivals from UK as the dependent variable. The reason is that tourism receipts are not by the individual country but in totals. The study utilizes arrivals from UK because it's the major tourist feeder to Kenya as observed above.

In order to be able to investigate the share of the key proposed determinants of international tourism to Kenya based on literature review and theoretical framework; demand for tourism function will be represented using linear model of the form shown below.

$$Arr_t = \beta_0 + \beta_1 RGDPC_t + \beta_2 RP_{t+} + \beta_3 Acc_t + \beta_4 PI_t + \beta_5 UKpop_{t+} + \beta_6 Adv_{t+} + \beta_7 Pol_{t+} + u_{t} \dots \dots \dots (4)$$

Where,

$Arr_t$  is the tourist arrivals from UK to Kenya in period t in numbers;

$RGDPC_t$  is real per capita income of UK in period t in UK pounds;

$RP_t$  is relative price between Kenya and UK in period t;

$Acc_t$  is accommodation capacity in Kenya in period t in hotel rooms available;

$PI_t$  is public investment to GDP ratio in Kenya in period t;

$UKpop_t$  is total population of UK in period t in numbers;

$Adv_t$  is the amount spent by KTB in advertising in UK in period t in Kenya shillings;

$Pol_t$  is dummy to capture the impact of political instability caused by PEV, ethnic clashes, terrorism etc;

$U$  is the stochastic error.

$\beta_0 \dots \beta_7$  are parameters to be estimated

t is 1981(1) to 2013(30)

### 3.2.1 Description of Variables.

#### **Dependent Variable: Arrivals from UK to Kenya.**

The demand for tourism will be represented by number of visitors' arrivals to Kenya from UK. Tourism earnings emerging from UK visitors could even have been the best dependent variable as many literature reviews suggest because it takes into consideration three variables namely: - entries, number of days stayed and the average daily expenditure. But the main challenge that hinders many researchers from using it is the unavailability of data per country. Otherwise the data on arrivals to Kenya from each country was available. But

according to Crouch and Shaw (1992), almost 75 percent of the studies that approximated tourism demand functions have used the number of arrivals as the dependent variable (Qui and Zhand, 1995; Morris, Wilson and Bakalis, 1995; Kulendran, 1996; Akis, 1998). The data will be obtained from KNBS from 1981 to 2013.

## **Independent Variables**

### ***Real per capita income***

This is usually calculated from GDP divided by total population. This is done for all years under study (1981 – 2013). It is assumed that the per capita income is the income of the visitor which is one of the factors determining the demand of any product. All studies on the demand of tourism have used this variable as one of the explanatory variables. The Gross Domestic Product (Kulendran and Wilson, 2000; Lathiras and Siriopoulos, 1998) in real or nominal terms but, in per capita terms has been used to proxy the level of wealth of the sending country. The data will be obtained from KNBS.

### ***Relative Price between Kenya and UK***

This variable is a proxy of the price of tourism. Price is the key variable in determination of the demand of any product. Equally, the study will use it as one of the independent variables. The price can be determined by transport costs from the country of origin to Kenya plus the costs of living in the destination country. It is usually not easy to compute transport costs. The study will utilize the tourism price index as consumer price index (CPI) in the form of relative price assuming that the tourists have the option of spending their holiday in Kenya or in their home countries. The study will adopt the relative price definition which will be calculated as the ratio of the consumer price index in destination country to that of the country of origin adjusted by the relative exchange rate to obtain a proxy for the real cost of living (Kulendran, 1996)

$$Pr_t = \frac{CPI_{i,t} / EX_{i,j,t}}{CPI_{j,t}}$$



Where

$Pr_t$  = Relative Consumer Price Index for Kenya in time t

$CPI_{i,t}$  = Consumer Price Index for Kenya in time t

$EX_{i,j,t}$  = Exchange rate between Kenya shillings divided by UK pound in time t

$CPI_{j,t}$  = Consumer Price Index for UK in time t

Consumer Price Index will be obtained from KNBS.

### ***Accommodation Capacity in Kenya***

This is the determinant of the demand for tourism from the supply side. It is one of the explanatory variables in the model to look at the influence of supplying more accommodation in order to appeal to more tourists. It is expected that the increase in accommodation capacity will increase the number of visitors to the country. This variable has not been commonly used in the studies since it's a supply factor. But this study will put it into consideration. The data will be obtained from KTB

### ***Public Investment to GDP ratio in Kenya (IP)***

Again this explanatory variable is a more general supply measure related to infrastructure (airports, roads, railways, hospitals and telecommunications, among others) which we believe may have welfare effects on the daily life of the tourists that visit Kenya. The ratio of public investment to GDP (IP) is used as a proxy to capture the welfare effects emanating from public infrastructure networks.

This is the budgetary allocation to infrastructure per year. The data will be obtained from the National accounts.

### ***Total Population of the Sending Country***

This variable is used to count for the market size. The rationale behind this variable is that a bigger population constitutes a bigger potential market for supplying tourists. Therefore, more economies of scale can be realized. The data will be obtained from Wikipedia

### ***Advertisement Costs / Marketing / Promotion Expenses***

This was looking at the amount spent each year by the Kenya Tourism Board in advertising or awareness creating in the UK for the period under study.

It is usually assumed that the more the amount spent the more the tourists are received because the awareness has been created and people are aware of the services available for the tourist.

### ***Dummy***

This is introduced in the model to capture effects of some special events that might have had a transitory influence on demand. This influence must have brought political instability. These events are like election inspired ethnic clashes, the terrorists bombing of the US embassy in Nairobi and post – election violence (PEV). It is assumed that both of these special events related to security will lead to travel advisories by foreign countries hence scaring away tourists.

### **3.2.2 The expectations for the signs of the parameters are:-**

$\beta_1 > 0$ : Increase in real income will boost tourist demand

$\beta_2 < 0$ : Increase in relative prices will push down tourist demand

$\beta_3 > 0$ : Increase in the accommodation capacity will boost tourist demand

$\beta_4 > 0$ : Increase in public investment ratio will boost tourist demand

$\beta_5 > 0$ : a bigger population will provide a bigger tourism market

$\beta_6 > 0$ : Increase in amount of advertisement will boost tourism demand

$\beta_7 < 0$ : We anticipate this parameter to be negative as this dummy variable captures calamities that have negative influence to tourism to Kenya.

### **3.3 Tests**

The following are the tests that were carried out before regression was done.

#### **3.3.1 Multicollinearity Test**

Multicollinearity is the undesirable situation where the correlations among the independent variables are strong.

Multicollinearity increases the standard errors of the coefficients. Increased standard errors in turn means that coefficients for some independent variables may be found not to be significantly different from 0, whereas without multicollinearity and with lower standard

errors, these same coefficients might have been found to be significant and the researcher may not have come to null findings in the first place.

In other words, multicollinearity misleadingly inflates the standard errors. Thus, it makes some variables statistically insignificant while they should be otherwise significant.

Multicollinearity will be tested using variance inflation factors and correlation matrix to confirm whether there is a degree of correlation among the variables. Multicollinearity will be said to exist when there is perfect linear relationship between the variables concerned.

### **3.3.2 Test for Heteroscedasticity**

One of the assumptions of the OLS is that error term has a constant variance. This might not be true even if the error term is assumed to be drawn from identical distributions.

For instance, the error term could vary or increase with each observation, something that is often the case with cross-sectional or time series measurements. One of the assumptions of the classical linear regression model is that there is no heteroscedasticity. Breaking this assumption means that the Gauss-Markov theorem does not apply, meaning that OLS estimators are not the Best Linear Unbiased Estimators (BLUE) and their variance is not the lowest of all other unbiased estimators. Heteroscedasticity does not cause ordinary least squares coefficient estimates to be biased, although it can cause ordinary least squares estimates of the variance (and, thus, standard errors) of the coefficients to be biased, possibly above or below the true or population variance.

The Breusch pagan heteroscedasticity test will be used to test the hypothesis as opposed to plotting graphs in order to establish the presence of heteroscedasticity.

### **3.3.3 Test for Autocorrelation**

Autocorrelation test investigates whether the variables under study have serial correlation which affects the regression results by giving spurious results and incorrect estimates. Breusch Godfrey test will be used to test autocorrelation.

### 3.3.4 Unit Root Test

Since time series data is mostly non-stationary, Augmented Dickey-Fuller (ADF) tests are carried out to test whether or not the data presented contain unit root. This is meant to guard against getting spurious results.

A stationary series has no unit root and does not require differencing, hence it is integrated of order zero i.e I(0) and at the same time it does not have estimation problems. However, if a series has a unit root or more, it is non-stationary and use of classical estimation method such as ordinary least squares (OLS) to estimate the long-run equation could lead to mistaken acceptance of spurious relationships with meaningless results. A non-stationary series is therefore differentiated to make it stationary before estimation. This is meant to avoid problems associated with non-stationary series. The unit root test is based on the null hypothesis of non-stationary or existence of a unit root against the alternative hypothesis of stationary. In this study, the existence of unit root(s) will be examined by carrying out ADF tests.

In this regard, the data used is non-stationary but becomes stationary after first differentiation; here the short run response model with differentiated data will be estimated.

### 3.3.5 Co-integration Analysis

Differentiating the variables leads to non-recovery of long-run properties since a model when differentiated is short-run in nature, to overcome this problem an error-correcting model (ECM) is introduced and is suitable where variables are co-integrated. This is to reconcile the short-run behavior of an economic variable with its long-run behavior.

The study will use Granger and Engle test. This involves examining the residuals from the co-integrating regression and in particular testing the null hypothesis that assumes the residual series have a unit root against an alternative that the series is stationary i.e the null hypothesis is no co-integration and the alternative is co-integration. The test for co-integration is analogous with the above unit root tests, though applied on the residuals.

The null and alternative hypotheses are:-

$H_0 = 0$  (no co-integration)

$H_1 = 1$  (co-integration exist)

### 3.3.6 Normality Test

A series is usually tested for normal distribution using Shapiro Wilk test. The test statistics measure the difference of the skewness and kurtosis of the series with those from normal distribution and is computed as

$$JB = (N - k)/S [S^2 + \frac{1}{4}\{K - 3\}^2]$$

Where S is the skewness, K is the Kurtosis, and k represents the number of estimated coefficients used to create the series. All the variables will be subjected to normality test.

### 3.4 Data

A thirty three years' (1981 – 2013) time series data from the source country (UK) and the destination country (Kenya) was utilized. Annual data of the period under study of all the variables was used. Where manipulation was required in order to arrive at the variable; (for example in order to get per capita income, we have to get GDP divided by total population of that particular year) it was done from annual raw data of the period under study.

#### 3.4.1 Data Source

All the data that this study has utilized is secondary data. This secondary data was obtained from Kenya National Bureau of Statistics (KNBS), Kenya Tourism Board (KTB), Ministry of East African Affairs, Commerce and Tourism, Kenya Treasury and Various Websites like [www.worldtourismorganization.com](http://www.worldtourismorganization.com)

#### 3.4.2 Data Analysis

A linear model was used to regress the number of tourist arrivals from UK against the hypothesized variables. It is assumed that the tourists' arrival from UK which is the greatest source of international tourist to Kenya is representative of the demand for tourism. The hypothesized variables are per capita income, relative price, accommodation capacity, public investment to GDP ratio, population of the sending country, and promotion expenses. The linear model is estimated. Many studies on demand for tourism like Kimuyu, (2009) have utilized such variables but not the supply factors.

## CHAPTER FOUR: RESULTS AND DISCUSSION

### 4.0 Introduction

This chapter presents the findings of the main objective of our study which is meant to investigate the determinants of inbound tourism to Kenya. Factors analysed recognizes that tourism remains a leading earner of foreign exchange for the country, due to its many linkages to other sectors. The chapter used both tables and figures to illustrate the trends of various factors which influence tourism sector in Kenya.

### 4.1 Descriptive statistics

The mean, standard deviation, the range, skewness and kurtosis of both dependent and independent variables of the 33 years (a period of 1981-2013) are presented in Table 3. The average values for each variable was a point indicating the deviations of each variation through the standard deviations. The range also indicated the lowest and the highest value of the variables. The variables involved in the study were the number of arrivals, the real Gross Domestic Product per Capita of the UK, relative prices, Accommodation capacity, Public investments, UK population, Advertisements and Political instability.

Table 3 indicates the summary statistics;

**Table 2: Summary Statistics**

Variable	Obs	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis
Arr	33	153845.5	80612.54	42100	313600	0.396186	1.858423
RGDPC	33	30156.49	6739.434	19890.76	40230.96	-0.024024	1.564437
RP	33	0.017981	0.0050262	.0106174	0.0276278	0.899093	2.416673
Acc	33	10711.52	13780.82	4336	61382	2.823038	9.488598
PI	33	0.0348729	0.0280452	0.0079199	0.1298285	1.694236	5.654971
UKpop	33	5.88e+07	2277917	5.63e+07	6.45e+07	0.9153479	2.943932
Adv	33	6.21e+07	8.15e+07	105200	2.33e+08	0.8780326	2.174105
Pol	33	0.2424242	0.4351941	0	1	1.202082	2.445

**Source:** Author's computation

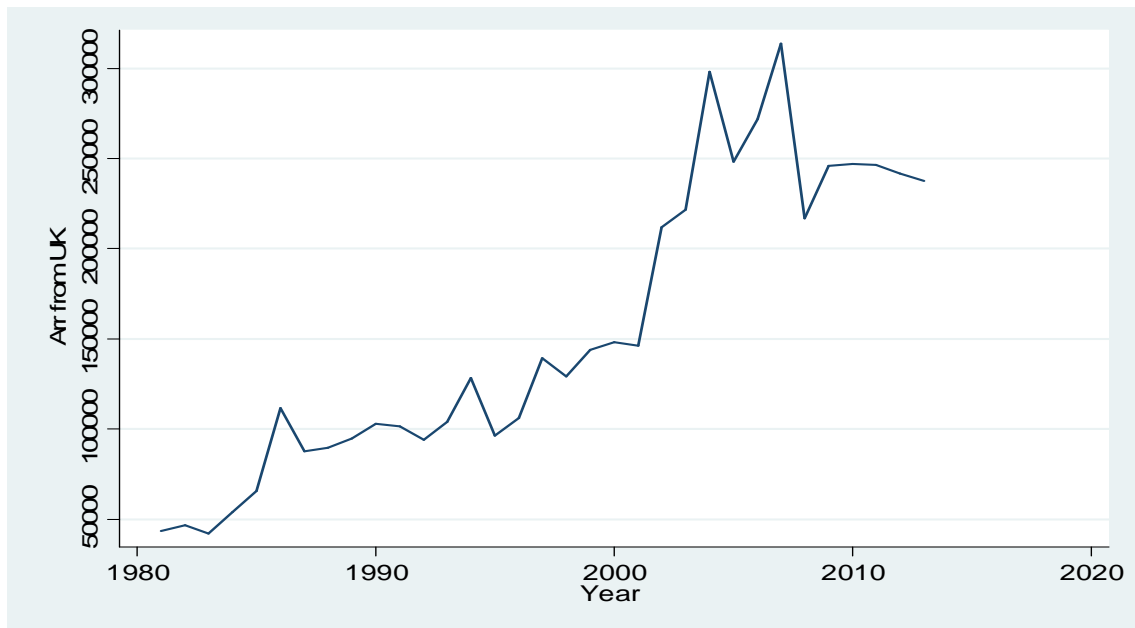
From Table 3, we find that the average arrivals from United Kingdom to Kenya were 153,845 tourists, lowest turnout of 42,100 tourists and the highest turnout of 313,600 tourists in a good year. The gross domestic product per capita in the United Kingdom had a mean average

of UK£30,156 deviating with a value of UK£6,739.43. The accommodation capacity in the entire time periods was ranging between 4,336 and 61,382 rooms. Further, the UK population deviated with a value of 2,277,917 populations over the study period. This shows the range between the greatest available market and the smallest available market. Also, the advertisement costs by the government of Kenya was above Kenya shillings 105,200 until the end of the study period.

#### 4.2 Trends of the economic variables used in the study

The patterns of the trend of variables under study are shown in figure 3 to figure 9. The graphical trend runs from 1980 to 2012. There has been a continuous increase in the number of arrivals from UK to Kenya. However, this rise has been faced with a lot of upswings which may be as a result of inconsistent efforts from Kenya in terms of marketing the country and the existence of other competing destinations for example South Africa. We observe a downward trend from the year 2008 which may be attributed to insecurity due to post election violence in the destination country and indeed associated to the global financial crises.

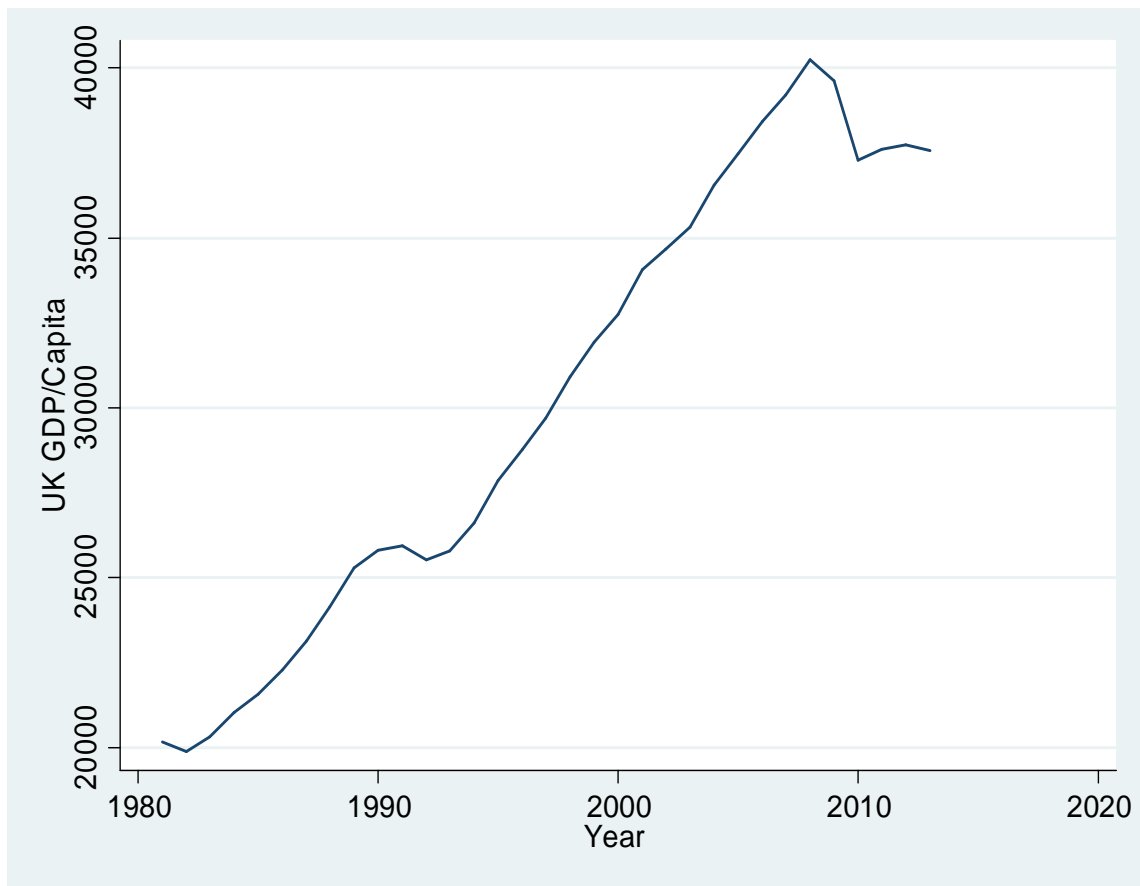
**Figure 3: Arrivals from UK to Kenya**



**Source:** Author's computation

Gross domestic product per capita in UK was evaluated and just like the number of tourists arriving in the country, it can be observed that there has been a rise in this variable. This rise is however smooth unlike the trend observed in the number of arrivals. This implies that the UK economy has been systematically growing throughout the study period and this may be due to the increased good international partnerships in trading. Income per capita is the most important factor that influences the decision of people to move from one place to another.

**Figure 4: UK Gross Domestic Product per Capita**



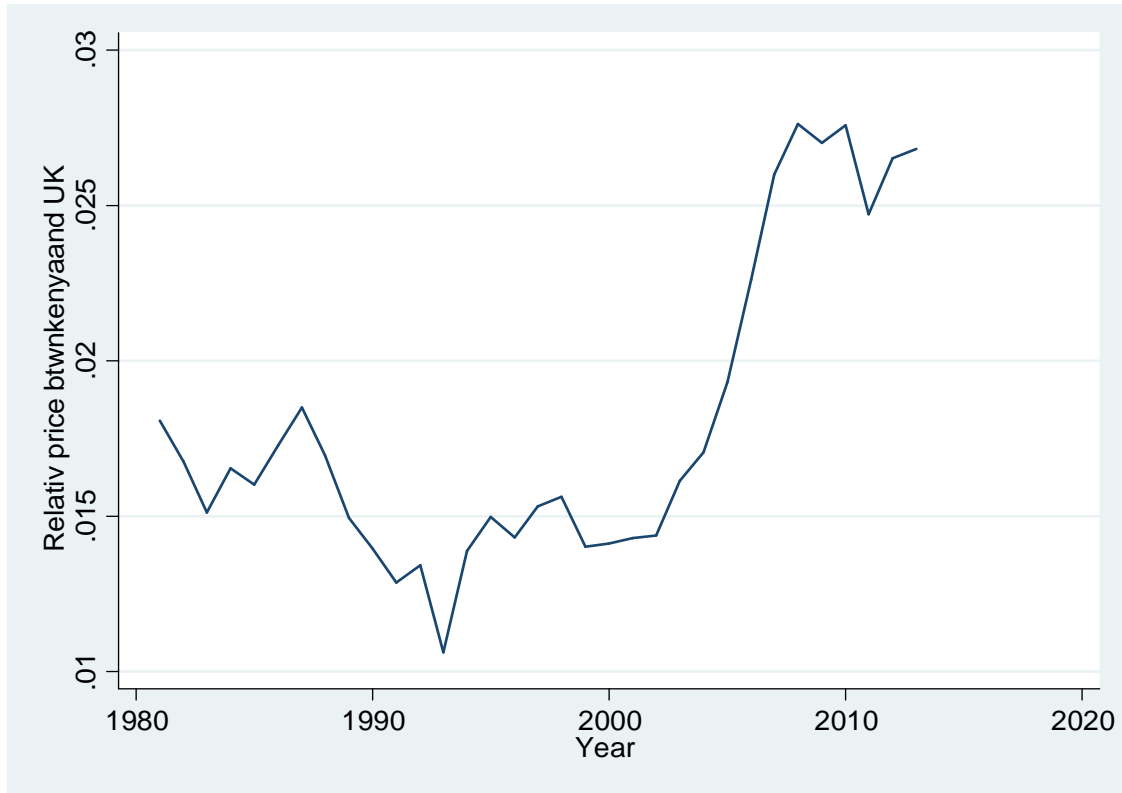
**Source:** Author's computation

Relative prices were also computed and examined and we found that generally, there have been periods where relative price between the two countries was high and other period when it was low. The general “U” shape pattern shows that the years 1981, 1989, 2008 and 2010 had high relative prices whereas the years 1983, 1993 and 2012 showed a decreasing trend. This declining pattern may be associated with the political turmoil of 1982, the increase in



money supply as a result of multiparty in 1992 and the uncertainty in terms of general elections in Kenya.

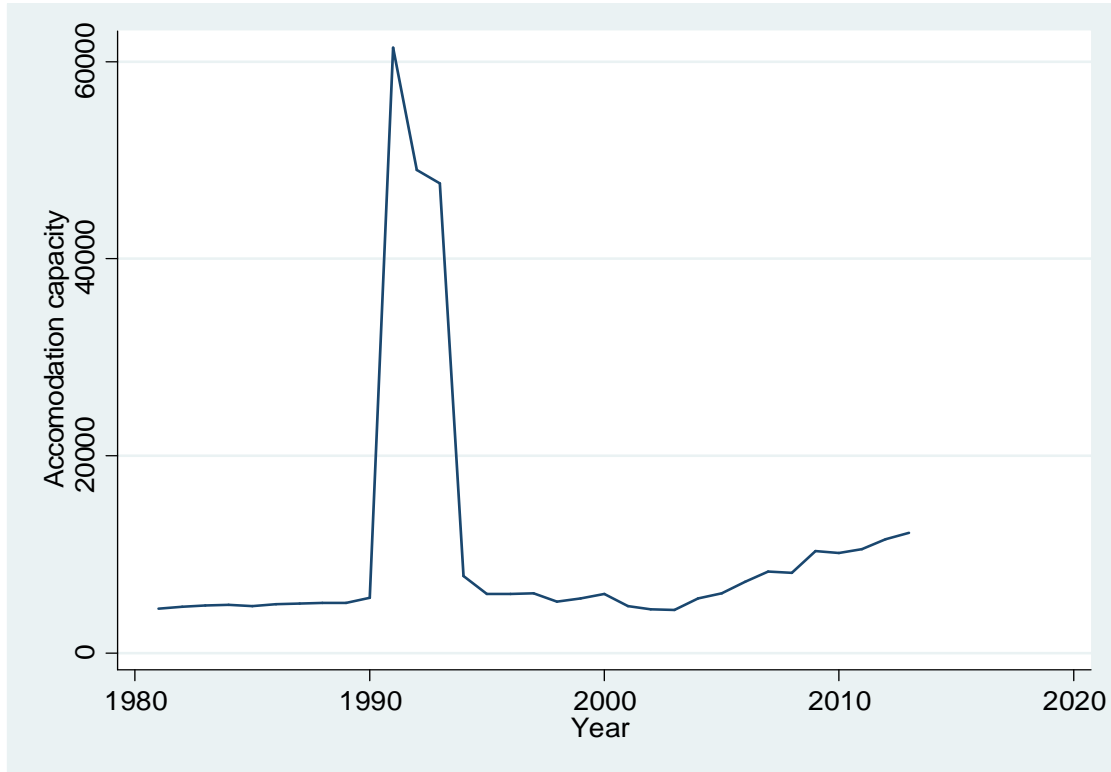
**Figure 5: Relative prices between Kenya and UK**



**Source:** Author's computation

Accommodation capacity which was assessed in terms of the number of bed capacity in the country showed a unique trend. From the beginning of the study period up to the year 1992, there was constant bed capacity from which it rose instantly to for about two years and later declined tremendously in the year 1994 like the previous period whereby it maintained a fairly constant trend. The instantaneous rise we observed might be attributed to the perceived democracy which attracted more tourists both local and international and consequently investors in hotel industry however, this did not last for long due to change of regime leading to discouragement of potential investors in this industry.

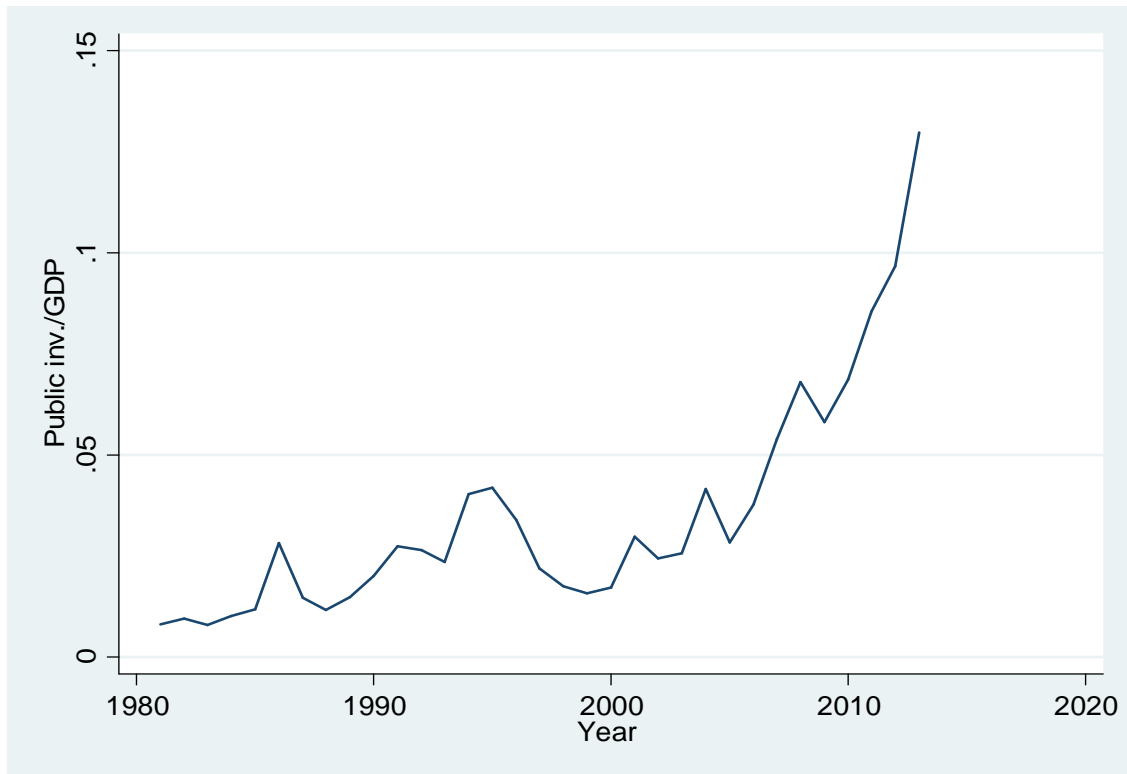
**Figure 6: Accommodation Capacity of the country of destination**



**Source:** Author's computation

Public investment which is a proportion of GDP increases also although it has a “J” pattern. It has inconsistent fluctuations which imply that the country faced a lot of challenges throughout the study period except from the year 2010 where we observe a systematic rise in public investments.

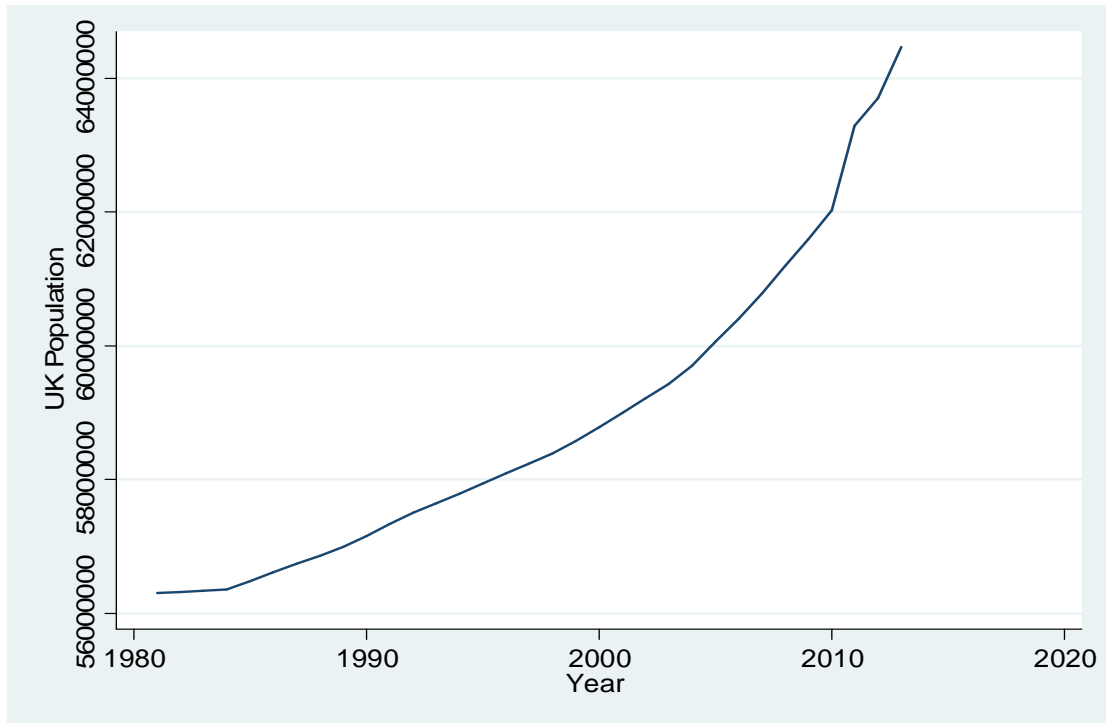
**Figure 7: Public Investment as a ratio of GDP**



**Source:** Author's computation

UK population shows a consistent rise as expected throughout the study period. However, we observed that from the year 2010, there was a sharp rise or increase in the population of the UK.

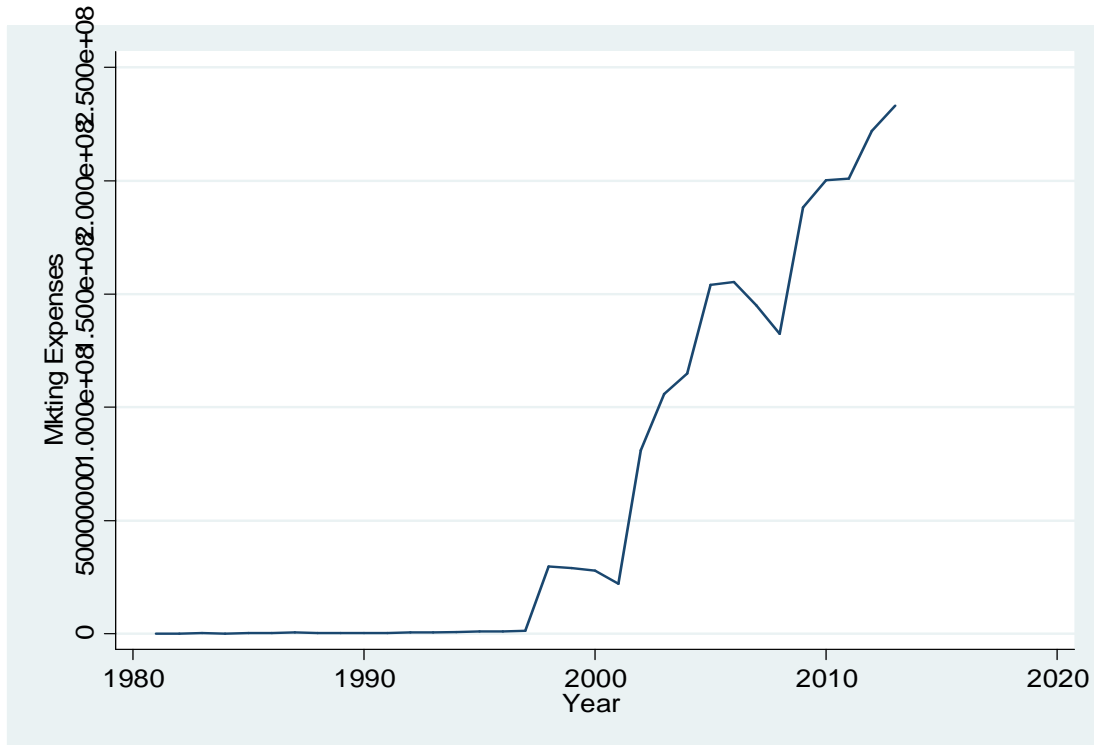
**Figure 8: UK Population**



**Source:** Author's computation

Marketing expenses was considered in this study and as can be observed from figure 9, there has been challenges in terms of advertising our tourism sector. Until 1998, there has been a constant advertisement trend. Despite the fact that there was an improvement thereafter, these improvements have been faced by a downward pull especially in the years 2002 and 2008 which may be associated with the new government and change of structures affecting the allocations in marketing expenditure.

**Figure 9: Advertisements**



**Source:** Author’s computation

Generally, the graphical illustrations showed that most of our study variables had an increase trend although inconsistency was manifested.

The following is the relationship we considered in our study;

$$Arr = \beta_0 + \beta_1RGDPC_t + \beta_2RP_t + \beta_3Acc_t + \beta_4PI_t + \beta_5UKpop_t + \beta_6Adv_t + \beta_7Pol_t + \mu_t \dots\dots\dots (5)$$

Where Arr=the number of arrivals, RGDP=the real Gross Domestic Product per Capita of the UK, RP=relative prices, Acc=Accommodation capacity, PI=Public investments, UKpop=UK population, Adv=Advertisements and Pol = Political instability.

### 4.3 Tests

#### 4.3.1MulticollinearityTest

We conducted two tests that is variance inflation factors and correlation matrix to confirm whether there is a degree of correlation among the variables. Multicollinearity shall be said to exist when there is perfect linear relationship between the variables concerned. We used the variance inflation factors to determine if any pair of independent variables are highly collinear. We found that before first differencing, UKpop, Adv and PI contributed to

multicollinearity. However, after first differencing, there was no Multicollinearity since the results showed that all VIF values were less than 10 and their tolerance values  $1 / \text{VIF}$  were greater than 0.10, Multicollinearity does not exist.

**Table 3: Variance Inflation Factors**

Variable	VIF Before	1/VIF	VIF after 1 <sup>st</sup> Differencing	1/VIF after 1 <sup>st</sup> Differencing
<b>UKpop</b>	59.61	0.016775	1.62	0.617513
<b>Adv</b>	23.86	0.041911	1.59	0.628112
<b>PI</b>	15.69	0.063720	2.01	0.498331
<b>RGDPC</b>	9.45	0.105867	1.21	0.829682
<b>RP</b>	6.64	0.150586	1.27	0.787950
<b>Acc</b>	1.42	0.701854	1.11	0.899600
<b>Pol</b>	1.28	0.778342	1.16	0.858421
<b>Mean VIF</b>	16.85		1.42	

**Source:** Author's computation

We also considered correlation matrix whereby we conducted correlation matrix before and after first differencing of the collinear variables

**Table 4: Correlation Matrix before differencing**

Variables	Arr	RGDPC	RP	Acc	PI	UKpop	Adv	Pol
Arr	1.0000							
RGDPC	0.9423	1.0000						
RP	0.6699	0.6456	1.0000					
Acc	-0.1139	-0.1054	-0.2274	1.0000				
PI	0.6646	0.6827	0.7651	0.0465	1.0000			
UKpop	0.8505	0.8900	0.7895	-0.0484	0.9118	1.0000		
Adv	0.8788	0.8543	0.8624	-0.1100	0.8331	0.9510	1.0000	
Pol	-0.1291	-0.1033	-0.0481	0.2509	-0.1285	-0.1325	-0.1648	1.0000

**Source:** Author's computation

**Table 5: Correlation Matrix after first differencing**

Variables	Arr	Drgdpc	Drp	Dacc	Dpi	Dukpop	Dadv	Dpol
Arr	1.0000							
Drgdpc	-0.1369	1.0000						
Drp	0.4352	0.1540	1.0000					
Dacc	-0.0067	-0.0957	-0.2933	1.0000				
Dpi	0.3763	-0.1202	0.1971	-0.0553	1.0000			
Dukpop	0.6512	-0.2531	-0.0572	0.0355	0.4891	1.0000		
Dadv	0.3683	-0.2139	0.0603	0.0105	-0.3396	0.1259	1.0000	
Dpol	0.0174	-0.0827	0.0436	0.1329	-0.0161	-0.0094	-0.2434	1.0000

**Source:** Author's Computation

We found from Table 4 that all relationship are less than the absolute value of 0.6 except the relationship between arrivals and the first difference of the UK population which is 0.6512 which is not more than tolerable absolute value of 0.7. We retained the variables.

#### 4.3.2 Tests for Heteroscedasticity

The Breusch pagan heteroscedasticity test was used to test the hypothesis as opposed to plotting graphs in order to establish the presence of heteroscedasticity. Both diagnostic tests confirm the presence of Heteroscedasticity. From Table 7, the p-value of 0.5782 in the Breusch pagan test leads to the failure of rejection of the null of homoscedasticity. This implies that there is no heteroscedasticity.

**Table 6: Breusch-Pagan / Cook-Weisberg test for heteroscedasticity**

Ho: Constant variance
Variables: Fitted values of Arrivals (Arr)
Chi2(1) = 0.31
Probability > chi2 = 0.5782

Source: Author's Calculations

#### 4.3.3 Tests for Autocorrelation

We also investigated whether our study variables had serial correlation which affects the regression results by giving spurious results and incorrect estimates. We applied BreuschGodfrey test for autocorrelation of which we found that the probability value of

27.18% as shown by Table 8 is more than the threshold valued of 5%. This implies that there is no autocorrelation.

**Table 7: Breusch-Godfrey LM test for Autocorrelation**

Lags(p)	chi2	df	Prob> chi2
1	1.208	1	0.2718
<b>H<sub>0</sub>: No Serial Correlation</b>			

Source: Author's computation

#### 4.3.4 Normality Test

Normality test was also conducted to validate our model since normality of residuals was very important and critical for valid estimation. Our study considered Shapiro Wilk test which employs a bootstrapping technique. We found that probability value of 26.56% as indicated by Table 9 was more than probability value of 5% implying that the residuals are approximately normally distributed.

**Table 8: Shapiro Wilk test for Residuals**

Variables	Observation	W	V	z	Probability >z
Residuals	32	0.95947	1.352	0.626	0.26556

Source: Author's Calculations

#### 4.3.5 Unit root tests

The existence of the unit roots tends to make estimates to change from time to time. We carried out Augmented Dickey Fuller (ADF) test to detect whether a variable is stationary or not. This was meant to avoid spurious regression and inconsistent regression results. The null hypotheses of the variable has got unit root was tested. From the Table 10, we have calculated the test statistic and probability values;



**Table 9: Augmented dickey fuller tests for unit roots**

<b>Variables</b>	<b>Test statistic</b>	<b>Test statistic after first differencing</b>
<b>Arr</b>	-3.289 <b>(0.0013)</b>	-
<b>RGDPC</b>	-1.163 <b>(0.6895)</b>	-3.307 <b>(0.0146)</b>
<b>RP</b>	-0.064 <b>(0.9529)</b>	-4.739 <b>(0.0001)</b>
<b>Acc</b>	-2.768 <b>(0.0629)</b>	-5.993 <b>(0.0000)</b>
<b>PI</b>	1.975 <b>(0.9986)</b>	-4.380 <b>(0.0003)</b>
<b>UKpop</b>	7.273 <b>(1.000)</b>	-2.604 <b>(0.0092)</b>
<b>Adv</b>	1.196 <b>(0.9960)</b>	-5.147 <b>(0.0000)</b>
<b>Pol</b>	-2.873 <b>(0.0522)</b>	-5.770 <b>(0.0000)</b>

\*The 5% critical value is 2.980 before first differencing and 2.983 after first differencing.

\* The figures in Parenthesis represents the p values indicating the presence of unit roots if they are greater than 0.05.

$H_0$ : Variable is Non-Stationary

Table 10 indicated that all variables were non stationary since their respective test statistics were less than the 5% critical value implying that we failed to reject the null hypothesis confirming existence of a unit root except the dependent variables for arrivals which had no unit root. Upon first differencing, the variables became stationary. The following equation was obtained;

$$Arr = \beta_0 + \beta_1 DRGDPC_t + \beta_2 DRP_t + \beta_3 DAcc_t + \beta_4 DPI_t + \beta_5 DUKpop_t + \beta_6 DAdv_t + \beta_7 Dpol_t + \mu \dots\dots\dots(6)$$

Arr=the number of arrivals, DRGDP=first difference of the real Gross Domestic Product per Capita of the UK, DRP=first difference of the relative prices, DAcc=first difference of the

Accommodation capacity, DPI=first difference of the public investments, DUKpop=first difference of the UK population, DAdv=first difference of the Advertisements and DPol=first difference of the political instability.

#### 4.3.6 Tests for Cointegration

We conducted Engle Granger test to ascertain whether our study variables were cointegrated and to what order of cointegration. Equation 6 has been used to generate the residuals and the first differences of the residuals. The first differences, lagged values and lagged values of the first differences are included in another successive regression as model regressors. We tested the null hypothesis of no Cointegration. From the results in Table 11, the probability value of 4.72% is less than 5% which implies that the null hypothesis of no cointegration is rejected. This means that there is a long-run relationship between the number of arrivals and independent variables.

**Table10. The Engle-Granger Test**

D.uhat	Coefficients	t
<b>uhat</b>		
<b>L1.</b>	0.0377676	0.73
<b>LD.</b>	-0.4480809	-2.52
Number of observations = 30		
F( 2, 28) = 3.17		
Prob> F = 0.0472		
R-squared = 0.4845		
Adj R-squared = 0.2863		
Root MSE = 36304		

**Source:** Author's Computation

#### 4.4 Regression results for General Linear Model

The results of our regression model are shown in Table 12.

**Table 11: Regression results for linear model**

<b>Variables (Arr)</b>	<b>Coefficients</b>	<b>T-statistics</b>
<b>Drgdpc</b>	5.23661	0.42
<b>Drp</b>	2.08e+07	3.65*
<b>Dacc</b>	0.6290222	0.90
<b>Dpi</b>	1040432	0.94
<b>Dukpop</b>	0.1918618	4.29*
<b>Dadv</b>	0.0016168	2.58*
<b>Dpol</b>	12624.54	0.71
<b>_cons</b>	83939.47	5.36

Number of observation = 32  
F( 7, 24) = 9.67  
Prob> F = 0.0000  
R-squared = 0.7382  
Adj R-squared = 0.6618  
Root MSE = 46167

\*Significant at 5% significant levels

From Table 12, model was well specified since the p value of 0.0000 was less than 0.05 level of significant. Considering R squared, 73.82% of the determinants of inbound tourism were explained by our study variables while 26.18% has been attributed to the factors not included in the model.

This study found that relative prices, population of the UK, and advertisement costs in business significantly affect inbound tourism in Kenya. It was revealed that as the first difference of relative prices increases, tourism demand in Kenya also rose, that is the number of tourist arrivals when all other factors are held constant. Since tourism as suggested from the literature is a consumption product, depending on the price, tourists will make a decision of either consuming tourism as a product or other household products. Although the increase in general prices in the UK as a country of origin reduces the purchasing power of the potential tourist hence reducing the demand for tourism, in our case it is contrary since as the relative prices between the two country increases, there is a positive effect because an

increase in relative price leads to an increase in tourism inflows. This may be attributed to rebranding made by Kenya Tourist Board and reviewing of the wildlife act prohibiting poaching leading to increase in the number of distinct species attracting the tourists. It could also be that even when prices in the UK increase, prices in Kenya were relatively low and this could act as a pull to tourists. A similar study was done by Song, et al., (2010) who estimated the demand for Hong Kong tourism and suggested that the tourism price in Hong Kong relative to that of the tourist source country is the most important determinant of tourist expenditure in Hong Kong.

We explored the influence of the population in the sending country (UK) and the findings reveal that a unit change in the first difference of the UK population led to a consequent significant increase in the number of arrivals in Kenya holding other factors constant.

We also found that advertisement significantly increased the number of tourists arrivals in Kenya from UK through its first difference when other factors are held constant. This factor makes the destination country more visible and exposes the richness in terms of culture which is diverse and it's a sign of rich heritage.

## **CHAPTER FIVE: SUMMARY, CONCLUSIONS AND POLICY RECOMMENDATIONS**

### **5.0 Introduction**

This chapter summarizes the findings of the study through the analyzed variables in our study. Thereafter, conclusions are made based on determinants of inbound tourism in Kenya. Finally policy recommendations and areas of further research are suggested.

### **5.1 Summary of the study findings**

Tourism, apart from Agriculture has been leading for a long time as one of the key sectors which contribute to the economic growth in Kenya. This implies that for the Kenyan economy growth rate to move to a double digit, the country has to factor in the determinants of this industry. Tourism as a sector could be affected by both exogenous and endogenous factors. We assessed seven factors which were outstanding from the literature, which included the number of arrivals, the real Gross Domestic Product per Capita of the UK, relative prices between Kenya and UK, Accommodation capacity, Public investments to GDP, UK population, Advertisements and Political instability.

We utilized a general linear regression model and verified the OLS assumptions and found out that only three variables were significant; the first difference of the relative prices between Kenya and UK, the first difference of the UK population and the first difference of the advertisements. These factors had a significant positive effect on demand for inbound tourism in Kenya. This implies that a change in any of these factors led to a respective rise in demand in for international tourism in Kenya.

### **5.2 Conclusions**

From the study results on the trend of arrivals from UK, a continuous unsystematic increase in the number of arrivals from UK to Kenya is observed. This rise has a lot of fluctuations which may be attributed to varying efforts from Kenya in terms of marketing the country and the existence of other competing destinations. From estimation findings, it was revealed that both relative prices between Kenya and UK, advertisement costs and UK population respectively increases the international tourism demand in Kenya.

### **5.3 Policy Recommendations**

Kenya's current account deficit on the balance of payments has been financed mostly from tourism receipts. To achieve the second Medium Term Plan of Kenya Vision 2030 we recommend that the stakeholders and the government to consider the analyzed factors determining international tourist inflows. Based on the findings of this study, we suggest that the Government of Kenya increase the allocation to Kenya Tourism Board (tourism marketing agency) for tourism promotion. Kenya Tourism Board should target countries with high population and high prices compared to Kenya in order to maintain or increase the tourism activities in Kenya.

For the success in terms of sales of a product in the market, branding and marketing are the priorities. The significant effect of advertisement was unfortunately small (less than a unit). Therefore, we suggest that more efforts and funding should be channeled to the tourism sector to boost the market through inducing demand from other potential countries.

As the government of Kenya plans for policies to boost international tourism, it should target countries with high population, the countries where relative prices between Kenya and that specific country will be high. Now the government can invest in tourism promotion in such a country. In this study UK was just used as a representative.

### **5.4 Limitations of the study**

To explore factors influencing tourism demand in Kenya, up to date data is required. There was a challenge of the exact information, as most information was based on approximations.

### **5.5 Areas of further study**

Now that there are regional organizations like East African Community; we suggest future studies on the effect of regional organizations in determining tourism demand in Kenya.

## REFERENCES

- Akis, S. (1998), “A Compact Econometric Model of Tourism Demand for Turkey”, *Tourism Management*.
- Athanasopoulos, G., and Hyndman, R. J. (2008). “Modelling and forecasting Australian domestic Tourism”, *Tourism Management*, 29, pp. 19–31.
- Carraro, C. and Manente, M. (1994), “The Trip Forecasting Models of World Tourist Flows from and to Italy”, *Quaderni, CISET*, No. 8.2/94.
- Chenguang, D., Li, G., and Song, H. (2012). “Economic analysis of tourism consumption dynamics: A time-varying parameter demand system approach”, *Annals of Tourism Research*, 39, pp. 667–685.
- Crouch, G. (1995), “A Meta-Analysis of Tourism Demand”, *Annals of Tourism Research*, Vol. 22, No. 1, pp. 103-118.
- Crouch, G. (1994a), “The Study of International Tourism Demand: A Survey of Practice”, *Journal of Travel Research*, Vol. 32, No. 4, pp. 41-55.
- Crouch, G. (1994b), “The Study of International Tourism Demand: A Review of Findings”, *Journal of Travel Research*, Vol. 33, No. 1, pp. 12-23.
- Crouch, G. and Shaw, R. (1992), “International Tourism Demand: a Meta-Analytical Integration of Research Findings”, in Peter Johnson and Barry Thomas, eds, *Choose and Demand in Tourism*, Mansell, London, pp. 175-207.
- De Mello, M., Pack, A., and Sinclair, M. T. (2002). “A system of equations model of UK tourism demand in neighbouring countries”, *Applied economics*, 34, pp. 509–521.

Garin-Munoz, T. and Amaral, T. (2000), “*An Econometric Model for International Tourism Flows to Spain*”, Applied Economics, 7, pp. 525-529.

Gonzalez, P. and Moral, P. (1995), “*An Analysis of the International Tourism Demand in Spain*”, International Journal of Forecasting, 11, pp. 233-251.

Hellstrom, J. (2006). “*A bivariate count data model for household tourism demand*”, Journal of Applied Econometrics, 21, pp. 213–226.

Huang, K. H., Yu, T. H. K., Moutinho, L., and Lang, Y. C. (2012). “*Forecasting tourism demand by fuzzy time series models*”, International Journal of Culture, Tourism and Hospitality Research, 6, 7.

Kenya National Bureau of Statistics (KNBS), (1983-2012), *Kenya Economic Survey 1983-2012*. Nairobi, Kenya. Ministry of Planning, National Development and Vision 2030.

Kenya Tourism Board, (2014), “*TEMBEA Magazine*”, 5<sup>th</sup> Edition

Kim, J. (1999), “*Forecasting Monthly Tourist Departures from Australia*”, Tourism Economics, 5 (3), pp. 277-291.

Kimuyu, J (2009), “*Factors affecting international tourist arrivals in Kenya*”, MA Research Paper, Nairobi: Unpublished.

Kulendran, N., and Dwyer, L. (2009). “*Measuring the return from Australian tourism marketing Expenditure*”, Journal of Travel Research, 47, pp. 275–284.

Kulendran, N. and Wilson, K. (2000), “*Modelling Business Travel*”, Tourism Economics, 6 (1), pp. 47-59.

Kulendran, N. (1996) “*Modelling Quarterly Tourist Flows to Australia using Cointegration Analysis*”, Tourism Economics, Vol. 2, No. 3, pp. 203-222



Lathiras, P. and Siriopoulos, C. (1998), "*The Demand for Tourism to Greece: a Cointegration Approach*", *Tourism Economics*, 4 (2), pp. 171-185.

Leisure & Travel guides East Africa Ltd, (2014), "*Go Places – Your complete Entertainment, Restaurants and Travel Guide in East Africa*", Dec. 2013 / Jan. 2014 Issue 107

Lickorish, L. and Kershaw, A. (1958), "*The Travel Trade*", London: Practical Press Ltd.

Lim, C. (1997), "*An econometric classification and review of interational tourism demand models*", *Tourism Economics*, Vol. 3, No. 1, pp. 69-81.

Lyssiotou, P. (2000). "*Dynamic analysis of British demand for tourism abroad*", *Empirical Economics*, 25, pp. 421–436.

Mello, M. and Sinclair, T. (2002), "*A System of Equations Model of U.K. Tourism Demand in Neighbouring Countries*", *Applied Economics*, 34, pp. 509-521.

Moore, W. R. (2010). "*The impact of climate change on Caribbean tourism demand*", *Current Issues in Tourism*, 13, pp. 495–505.

Morley, C. (1994), "*The Use of CPI for Tourism Prices in Demand Modelling*", *Tourism Management*, Vol. 15, No. 5, pp. 342-346.

Morris, A.; Wilson, K. and Bakalis, S. (1995), "*Modelling Tourism Flows from Europe to Australia*", *Tourism Economics*, Vol. 1, No. 2, pp. 147-167.

Ouerfelli, C. (2008). "*Co-integration analysis of quarterly European tourism demand in Tunisia*", *Tourism Management*, 29, pp. 127–137.

Qui, H. and Zhang, J. (1995), "*Determinants of Tourist Arrivals and Expenditures inCanada*", *Journal of Travel Research*, Vol. 34, No. 2, pp. 43-49.

Republic of Kenya, (2007), “*Kenya Vision 2030: Towards a Globally, Competitive and Prosperous Kenya*”, Ministry of Planning, National Development and Vision 2030. Nairobi. Government printer

Republic of Kenya, (2003), “*Economic Recovery Strategy for Wealth and Employment Creation (ERS) 2003-2007*”, Ministry of Planning, National Development and Vision 2030. Nairobi. Kenya

Republic of Kenya, (2006).“*Kenya National Tourism Policy*”, Ministry of Tourism and wildlife. Nairobi. Government printer

Republic of Kenya, (2010), “*Appropriation Accounts*”, Nairobi. Government printer

Sinclair, M. and Stabler, M. (1997), “*The Economics of Tourism*”, Routledge, London and New York.

Song, H. and Witt, S. (2000), “*Tourism Modelling and Forecasting – Modern Econometric Approaches*”, Pergamon.

Song, H., Dwyer, L., Li, G., and Cao, Z. (2012).“*Tourism economic research: A review and assessment*”, *Annals of Tourism Research*, 39, pp. 1653–1682.

Song, H., Li, G., Witt, S., and Athanasopoulos, G. (2011).“*Forecasting tourist arrivals using timevarying parameter structural time series models*”, *International Journal of Forecasting*, 27, pp. 855–869.

Song, H., Li, G., Witt, S. F., and Fei, B. (2010).“*Tourism demand modelling and forecasting: How should demand be measured?*” *Tourism Economics*, 16, pp. 63–81.

Song, H., and Wong, K. K. F. (2003).“*Tourism demand modeling: A time-varying parameter approach*”, *Journal of Travel Research*, 42, pp. 57–64.

Stucka, T. (2002), “*A Comparison of Two Econometric Models (OLS and SUR) for Forecasting Croatian Tourism Arrivals*”, Croatian National Bank.

Syriopoulos, T. C., and Sinclair, M. T. (1993).“*An econometric study of tourism demand: The AIDS model of US and European tourism in Mediterranean countries*”, *Applied Economics*, 25, pp. 1541–1552.

Tse, R. (1999), “*A Simultaneous Model of Tourism Flow, Spending and Receipts*”,*Tourism Economics*, 4 (3), pp. 233-240.

Turner, L.; Reisinger, Y. and Witt, S. (1998), “*Tourism Demand Analysis Using Structural Equations Modelling*”, *Tourism Economics*, 4 (4), pp. 301-323.

United States. Central Intelligence Agency, (2013), “*The World Factbook 2013: (CIA’s 2012 Edition)*”, Potomac, United States

United Nations World Tourism Organization, (2012), “*UNWTO world tourism barometer*”, Retrieved from [www.media.unwto.org/en/press-release/2012-01-16/international-tourism-reach-one-billion-2012](http://www.media.unwto.org/en/press-release/2012-01-16/international-tourism-reach-one-billion-2012)

Witt, S. and Witt, C. (1995), “*Forecasting Tourism Demand: A Review of Empirical Research*”, *International Journal of Forecasting*, 11, pp. 447-475.

Witt, S. and Witt, C. (1992), “*Modelling and Forecasting Demand in Tourism*”, Academic Press Limited.

World Bank, (2010). “*World Development Report 2010: From Plan to Market*”, New York: Oxford University Press.

Wu, D. C., Li, G., and Song, H. (2012).“*Economic analysis of tourism consumption dynamics: A timevaryingparameter demand system approach*”, *Annals of Tourism Research*, 39, pp. 667–685.

## APPENDICES

### Annex 1: Tourist Arrivals to Kenya from various Countries of Residence

Country of Residence	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
United Kingdom	146.1	211.8	44.2	298.1	248.2	272.0	313.6	216.7	245.9	247.1	246.5	241.7
Germany	203.0	258.4	34.9	172.3	237.6	248.9	263.2	137.3	149.7	154.8	157.2	166.7
Switzerland	26.0	78.2	17.2	61.8	58.0	60.3	60.6	37.7	43.1	44.1	45.8	43.8
Italy	30.1	75.9	14.9	129.5	123.1	129.9	146.5	80.2	112.1	112.6	113.6	119.3
France	24.8	59.0	11.4	85.5	71.3	76.2	84.7	43.1	51.1	52.0	53.1	52.9
Scandinavia	21.1	20.2	6.1	40.3	35.1	39.5	43.3	30.9	41.5	43.1	44.3	41.6
Other Europe	165.0	87.7	16.5	142.6	168.5	137.7	155.3	96.5	124.7	125.1	125.3	127.2
USA	55.2	61.7	9.0	109.6	78.7	91.9	116.8	89.4	127.2	131.5	132.6	132.4
Canada	18.3	8.0	1.8	29.4	15.3	22.1	27.4	18.9	28.1	28.9	29.7	28.9
Uganda	39.8	9.2	4.7	18.3	15.3	19.8	20.9	22.8	42.7	43.4	43.9	44.1
Tanzania	44.9	9.1	2.9	20.0	16.8	25.8	27.6	23.2	46.1	46.6	46.2	45.6
Other Africa	64.9	50.9	14.3	48.9	87.9	108.3	128.9	114.9	146.3	149.8	144.0	141.6
India	16.9	9.0	2.5	33.6	26.2	35.7	37.1	35.3	38.2	41.2	41.6	41.2
Japan	12.6	15.8	4.7	25.7	22.2	21.5	22.0	14.2	18.7	20.1	24.3	22.4
Israel	7.0	13.5	2.2	6.2	13.7	15.8	17.5	12.6	10.6	12.0	14.0	13.0
Other Asia	19.3	6.4	1.6	12.2	35.0	54.6	58.7	52.3	58.5	58.9	62.1	60.5
Australia New Zealand	17.3	7.8	1.6	14.3	18.7	24.0	28.7	19.2	22.9	24.0	27.3	23.5
All other Countries	59.2	9.1	2.3	11.9	28.7	41.2	36.0	20.9	23.9	25.3	27.9	24.5
<b>Total</b>	<b>969.3</b>	<b>991.7</b>	<b>198.4</b>	<b>1259.8</b>	<b>1300.3</b>	<b>1425.2</b>	<b>1588.8</b>	<b>1065.8</b>	<b>1331.4</b>	<b>1360.4</b>	<b>1379.4</b>	<b>1371.2</b>

**Source:** Kenya National Bureau of Statistics: Economic Surveys (2001-2012)

## Annex 2: Data used in the Study

Year	Arr	RGDPC	Acc	UKpop	PI	MktingExp	RP	Pol
1981	43500	20164.6	4467	56301000	0.00814	105200	0.01807	0
1982	46700	19890.8	4716	56324000	0.00962	116850	0.01675	1
1983	42100	20314.4	4824	56342000	0.00792	130400	0.01512	1
1984	53800	21043.5	4860	56362000	0.01018	124400	0.01655	0
1985	65600	21571.4	4765	56481000	0.01185	127530	0.01601	0
1986	111700	22297.1	4925	56618000	0.02812	166628	0.01729	0
1987	87700	23138.1	4992	56743000	0.01459	552000	0.01849	0
1988	89700	24142.3	5096	56860000	0.0116	187000	0.01696	0
1989	94900	25300.9	5072	56996000	0.01481	250059	0.01494	0
1990	102900	25810.9	5596	57156000	0.02014	253359	0.01396	0
1991	101600	25934.4	61382	57338000	0.02733	281888	0.01288	0
1992	94000	25520.1	48997	57511000	0.02646	552000	0.01342	1
1993	104000	25780.7	47630	57649000	0.0236	620000	0.01062	1
1994	128400	26616.7	7801	57788000	0.04023	700000	0.01388	0
1995	96300	27864.1	6020	57943000	0.04181	1103000	0.01497	0
1996	106000	28772.5	6014	58094000	0.03389	1057000	0.01431	0
1997	139400	29701.3	6039	58239000	0.02196	1190000	0.01531	1
1998	129300	30913.7	5193	58394000	0.01744	29766989	0.01564	1
1999	143900	31923.2	5540	58579000	0.01578	28854835	0.01401	0
2000	148200	32751.9	5967	58785000	0.01725	27859395	0.01412	0
2001	146100	34058.7	4755	58999000	0.02985	22151582	0.01429	0
2002	211800	34669.1	4416	59217000	0.02432	80943383	0.01437	0
2003	221800	35315	4336	59437000	0.02561	1.06E+08	0.01614	0
2004	298100	36539	5568	59699000	0.04161	1.15E+08	0.01705	0
2005	248200	37484.6	6063	60059000	0.02833	1.54E+08	0.01932	0
2006	272000	38432.3	7202	60409000	0.03783	1.55E+08	0.02263	0
2007	313600	39201.9	8289	60781000	0.05384	1.45E+08	0.02599	1
2008	216700	40231	8148	61191000	0.06795	1.32E+08	0.02763	1
2009	245900	39608.4	10335	61595000	0.0581	1.88E+08	0.02701	0
2010	247100	37277.5	10190	62027000	0.06863	2.00E+08	0.02759	0
2011	246500	37600.3	10552	63285000	0.08553	2.01E+08	0.02472	0
2012	241700	37724.4	11530	63705000	0.09667	2.22E+08	0.02652	0
2013	237700	37569.8	12200	64463000	0.12983	2.33E+08	0.02683	0