

**INTERNATIONAL TOURISM RECEIPTS AND ECONOMIC GROWTH IN KENYA**

**1980 -2013**

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**X50/67704/2013**

**A Research Project Submitted to the School of Economics in Partial Fulfillment of the Requirement for the Award of Degree of Master of Arts in Economics of the University of Nairobi.**

**2016**

**DECLARATION**

I hereby declare that this is my original work and that to the best of my knowledge has never been presented for the award of any degree in any other university or institution.

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**APPROVAL**

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**DR. THOMAS ONGORO**

**SIGNATURE.....DATE.....**

## **DEDICATION**

All my dedication goes to my mum (Grace Nyabisi), my wife(Mercy) brothers and sister for their firm support in encouraging me and constantly reminding me for the value of time for the duration I was undertaking my studies. Their inspirations and positive advices ensured my accomplishing of this work. I appreciate them dearly.

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Lastly, I thank in a special way Almighty God for the good health and wisdom during the duration I was undertaking the research.

Thank you.

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## **LIST OF ACRONYMS AND ABBREVIATIONS**

<b>UNWTO</b>	-	United Nations World Tourism Organization
<b>GDP</b>	-	Gross Domestic Product
<b>ADF</b>	-	Augmented Dickey-Fuller
<b>KNBS</b>	-	Kenya National Bureau of Statistics
<b>OLS</b>	-	Ordinary Least Squares
<b>WTO</b>	-	World Trade Organization
<b>WTTC</b>	-	World Travel and Tourism Council
<b>OECD</b>	-	Organization for economic cooperation and development
<b>VECM</b>	-	Vector Error Correcting Model
<b>FDI</b>	-	Foreign Direct Investment
<b>TLGH</b>	-	Tourism-led growth hypothesis

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## ABSTARCT

This study aimed at exploring the relationship between international tourism receipts and economic growth in Kenya using a time series data of the period 1980 to 2013. Specifically it sort to answer two questions on causality between international tourism receipts and economic growth as well as the effect of international tourism receipt on Kenyan's economic growth. The study applied OLS regression, Cointegration and Granger causality test to obtain the study objectives. Results from OLS regression showed that all variables are statistically insignificant except average wage and gross fixed capital formation in determining the economic growth of Kenya under the period of study. Equally result from the causality test showed that all variables in the model were cointegrataed in the long run implying they could be used to explain changes in Kenyan economic growth within the period under study.

However, in the short run, the study found a unidirectional causality which ran from international tourism receipts to economic growth. The study findings conforms to Lee and Chang (2008), Oh (2005), and Bridaet. al, (2008b) who found a causality running from international tourism receipts to economic growth but contradicts Kim et. al, (2006) whose causality was a bidirectional.

The study recommends government intervention into the sector through relevant policies such as strengthening the tax body (KRA) on all foreign companies dealing with tourism activities within the country so as to maximize gains from such companies, investing more funds to the industry through improving infrastructure to the attraction sites as well as incorporating the communities around the attraction sites as tour guides to enhance welfare distributions from the gains from the tourism sector.

## **CHAPTER ONE: INTRODUCTION**

### **1.1 Background**

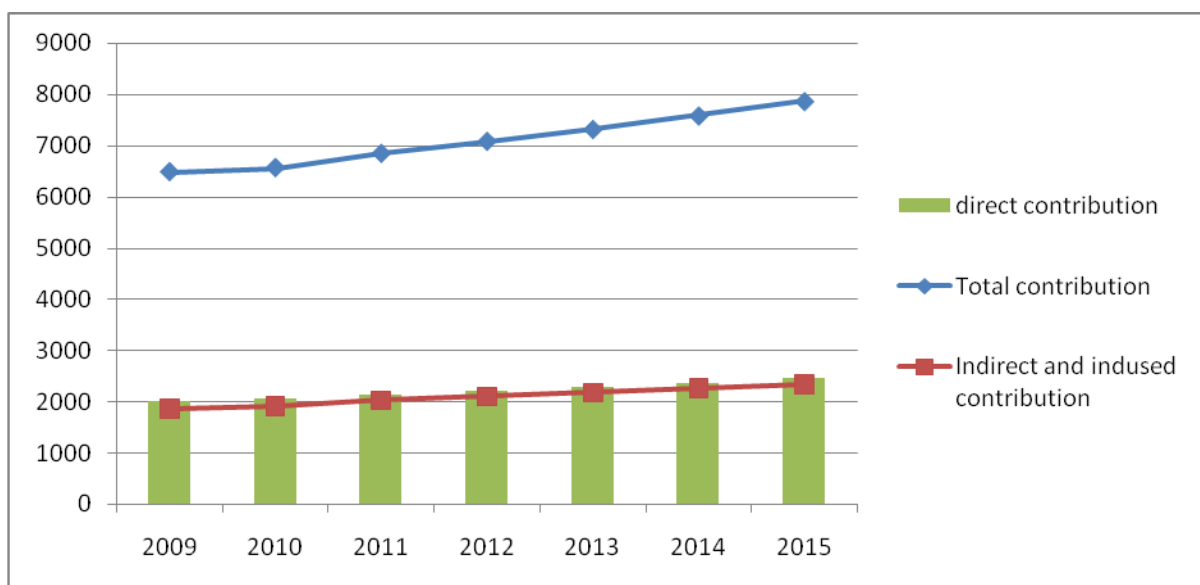
World development indicator (2015) defines receipts from international tourism as all spending by foreign tourists on recipient country's carriers for cross border transport. Such expenditures could include buying goods and services in the host country by foreign tourist as well as receipts for same day visit. On a global scene, tourism as an economic activity is perceived as one of the main economic sectors especially in generation of wealth and creation of employment (Africa Watch, 1993). The sector has a crucial role in foreign exchange earning especially to the developing nations and small Islands. In addition, the sector has been associated with the generation of sales and output, employment creation (accounting for the raising of living standards of the local people), value addition, capital investments as well as raising tax revenue to the economy (WTO, 2000). It thus implies that a nation without such receipts could suffer shortage of the tools needed for a healthy economic growth.

#### **1.1.1 Economic role of Tourism sector**

The sector contributes approximately over eight percent of the global Gross Domestic Product, about six point five percent of world exports as well as about eight percent of the world's employment (WTTC, 2012). For instance, according to the WTO (2000), tourism sector is one of the major contributors of world's export sector for about eighty three percent of all the world countries. Its function to the economy is in three folds: the direct role; the indirect role and the induce impact. The direct impacts are reflected through expenditures by tourists on typical tourism products such as paying entry fee at the tourist attraction site like Maasai Mara game reserve, fee charged on game sports as well as fee to shoot in the game parks. The indirect impact arises when the tourism industry buys intermediate goods produced locally as raw materials to produce their own goods (like vegetable from local

suppliers for their restaurants or hotels) which adds to the supply chain, while induced impact happens when those nationals employed in the tourism sector spends on the locally produced products (goods and services). According to the WTTC (2015) all these tourism impacts on the world economy have been increasing over time (see graph 1 below)

*Graph 1: Role of Tourism industry to the global economy in US dollar billions (horizontal axis represents the year while vertical axis represents the contribution)*



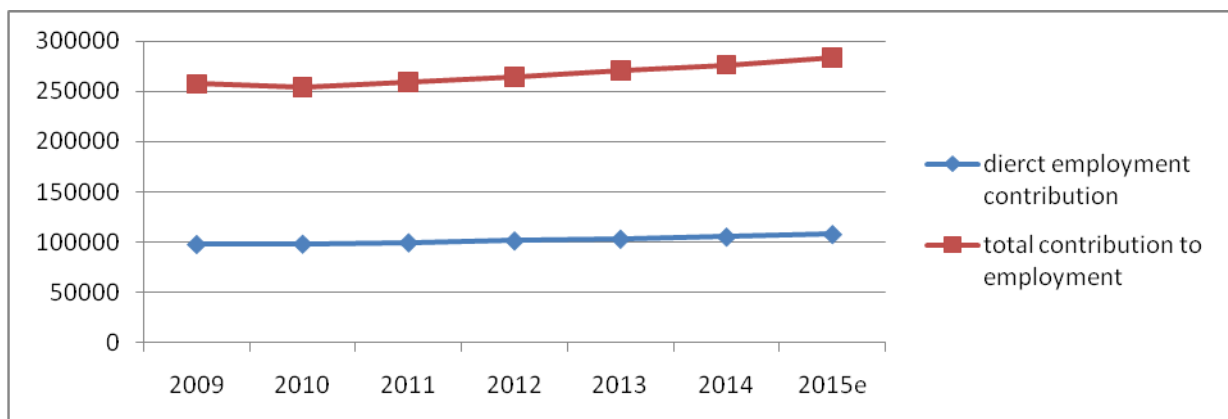
Source: WTTC, 2015

From the graph 1 above, the total contribution of the industry has shown an upward trend since 2009 and is expected to do better by the end of 2016. This implies that the sector will contribute much to the recovery of the world economy. Both direct and indirect contribution has a steady improvement over the same period. Tourism sector is very crucial to the income sector through increased sales, earned profits and tax revenue broadening. Part of this income is used to pay rent, wages as well as interest payment while the other part can be used for dividend distribution. If the government takes an initiative to invest in the sector, then such investment yields more income through the multiplier thus leading to higher economic growth.

### 1.1.2 Impact of tourism on world employment

Tourism sector has and is still playing a leading role in the world employment. Its employment is either a direct (like employee of KWS or those employed in the private game reserves) or indirect employment. The tourism industry has been accounting for over 2.0% of total world employment with its contribution expected to be about 3% by the end of 2024. (See graph 2) The impact of tourism on employment arises when there is an increased production which creates business opportunities to the sector and other related sectors. And since industries in developing countries tend to be labour intensive, any rise in production is likely to increase employment levels.

*Graph 2: The share of the Travel and Tourism sector to the world employment in 'thousands'*  
(The vertical axis is the contribution while the horizontal axis is the year)



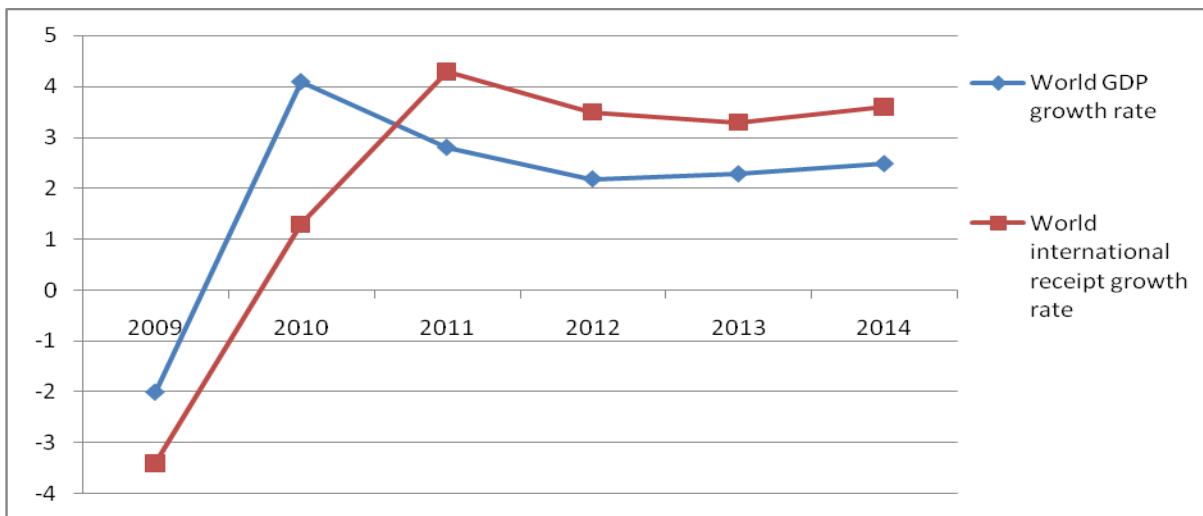
Source: WTTC, 2015

All these impacts (direct, indirect, induced or on employment) contribute to the world economic growth through the multiplier effect. Tourism sector, for example, will demands inputs such as services (trained staffs from education sector), food and communication gadgets like mobile phone services and so on from other sectors of the economy in a backward and forward linkage thus an impact of the overall GDP growth.

The graph 3 below summarizes the trend of the GDP growth rate and the international tourism receipts between 2009 and 2014. The trend shows some similarities between the two

macroeconomic variables. For instance between 2009 and 2010, both world GDP and international receipts were rising. The trend also depicts a decline trend after 2010 for both macroeconomic variables hinting some theoretical relationship.

*Graph 3 World GDP growth rate and international receipts growth rate between 2009 and 2014*



Source; UNCTAD, 2015

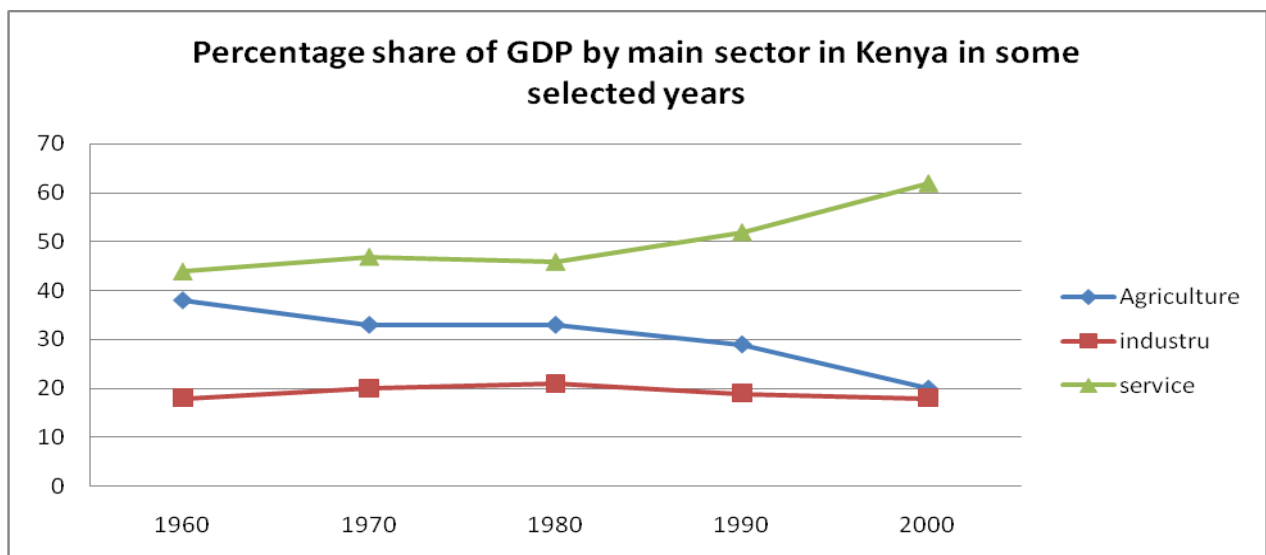
### **1.1.3 International tourism arrivals.**

The international tourism arrival is closely related to the receipts. The arrivals have shown an upward trend. For instance, the number of international tourist arrival worldwide reached 1138 million in 2014 which was 51 million more than the previous year 2013 (an equivalent to a 4.7% increase in the two periods). However, there was a slight fall in the number of international tourist arrival in 2003 and 2009 that has been associated with the financial crisis in the developed economies especially the United States and Europe. Despite this impressive rise of the tourism arrivals worldwide, the African economy's share of the international tourist arrivals remained dismal throughout the period.

### 1.1.4 Kenyan's sector performance

In Kenya, tourism sector is a sub pillar in the economic pillar as stated in its vision 2030 which has been charged with the transformation of the country to better nation (Akama, 2000). Tourism is classified as a service sector among others such as social services, private services, insurance, financial services and so on. Tourism share is captured by restaurants, hotels and safari industry. There are three main sectors that contribute to the Kenyan GDP: Agricultural sector, Service sector and the Industrial sector (Mings, 1978). (See the graph 4 below)

Graph 4 Kenyan percentage share of GDP by main sector for some selected years



Source: KNBS, 2002

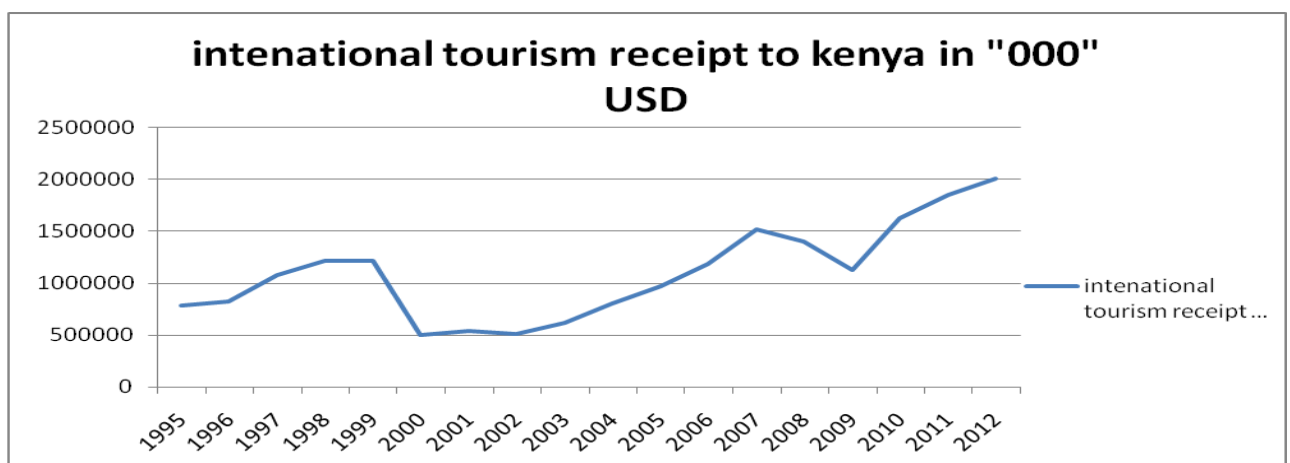
From the graph 4 above, the contribution of the service sector has been rising since 1960 where its share to the Kenyan GDP rose from 44% in 1960 to slightly above 62% in 2000. Agriculture, which remains the backbone of Kenyan economy, has maintained a downward trend with its share to the GDP being 38% in 1960 to 20% in 2000. The industrial sector on the other hand has been fairly stagnant averagely at 19% throughout the last five decades. Some of the reasons accounting for the dismal performance of the industrial sector have been

low level of domestic savings amongst the Kenyan citizens to finance acquisition of capital, inappropriate technology and high cost of establishing business within the country (Mitchell, 1968).

### 1.1.5 History of the tourism sector since 1960

Kenyan's tourism sector performed generally better in the 1960's mainly due to her rich endowment of tourist attraction sites or the natural resources as well as human factors such as development of package tours by Kenyan government and the general hospitality of Kenyans among other reasons. But in the early 1970's the sector registered the first decline in the number of tourist arrival to the country. Economic recession that had hit the traditional home countries such as United Kingdom and USA were suggested as the possible causes of the decline (Dieke, 1991). Internal shocks such as the closure of the Kenya-Tanzania border in 1977 and the attempted coup of 1982 did worsen the problem even further leading to a dismal performance of this sector (Dieke, 1991). Graph 5 below that shows the international tourism receipt for Kenya between 1995 and 2013

*Graph 5. Trend of international tourism receipts to Kenya in thousand US dollars*



Source: WDI, 2014

From the graph 5 above, international tourism to Kenya has a double maxima receipt regime (at 1988 and 2007) with another promising after 2011. These receipts are very important in

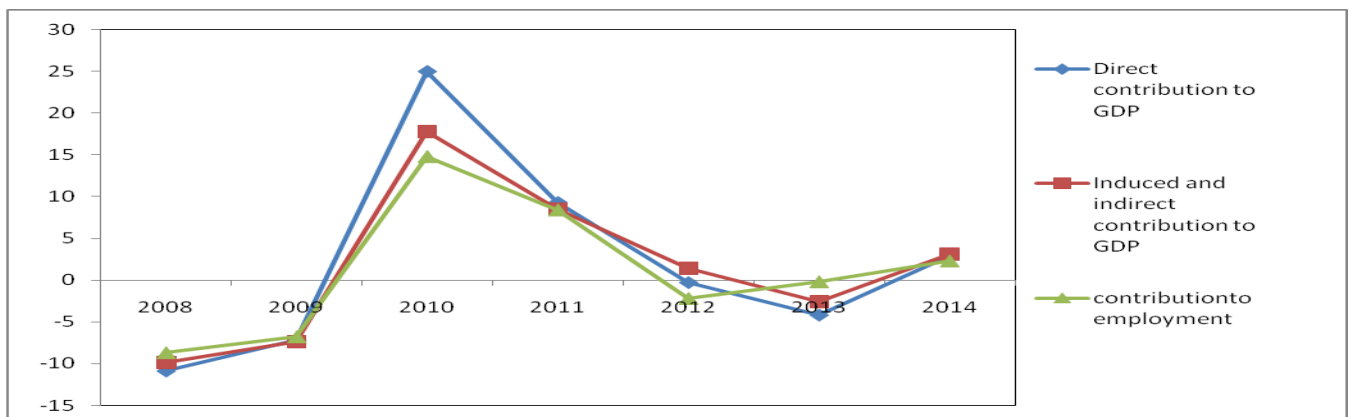


the economy as they are used to purchase capital goods such as machines for further production and hence improving the economic performance of the country (Chen and Devereux, 1999).

The 1990's witnessed yet another decline. This round it was because of political instigated shock that was causing unrest ( 1991-1992 saw Kenya adopt multi-party state), sudden rise in general oil prices as well as widened misleading perception ran by international media houses about Kenya due to high incidences of insecurity and the spread of STD ( HIV in the region) Ikiara et al. (1994). Starting 2010, earnings from tourism receipts rose by 18.5%. This rise in tourism receipt continued all through to 2012 although at a lower percentage of 3.3% as compared to the period 2010-2011(KNBS, 2013).

For Kenya, the direct tourism impact accounted for Ksh. 167.6 billion (about 9.5% of the GDP) in 2011. Full impact in the same year was estimated to 13.7 % of GDP while direct employment was 8.4% (created over 31300 jobs). Full employment impact stood at 11.9% in the same year. From the graph 6, it is evident that the impact of travel and tourism was negative in 2008 and attained its peak in 2010 before it started a declining trend up to 2013 (WTTC, 2015)

*Graph 6. The role of Travel and tourism industry to the economic growth of Kenya*



Source: WTTC (2015)

Despite the rising economic significance of tourism sector to the Kenyan economy, the sector has attracted very little empirical research (Lanza et al, 2003). Some of the studies in this area have been mainly focusing on the calculation of the demand of the industry and the gains generated by the industry either directly or through the multiplier effect (Figini and Vici, 2010). The study fills the gap by analyzing the empirical effect of international tourism receipts to the Kenyan's economic growth using a time series data between 1980 and 2013. In particular, the study tends to answer the question of the causality between the two macroeconomic variables. The period under study is very unique since Kenya started experiencing major internal shocks such as attempted coup of 1982; inter clashes due to multiparty elections of 1991-92, terrorism attack of 1997, post-election violence of 2007/08 as well as political tension associated with 2013 elections. All this shocks affects the tourism environment by portraying Kenya as a dangerous destination.

## **1.2 Statement of Research Problem**

The Kenyan tourism industry has been singled out as the main sector for realizing the country's Vision 2030. It is critical for employment, foreign exchange earnings, foreign investment and generally economic growth. According to the WTO report (2014), the country's share of global tourist arrivals rose from 0.17% in 1980's to 0.19% in 1990's. By 2000, Kenya was the 6<sup>th</sup> most visited nation in Africa after the traditional tourist destinations such as South Africa, Tunisia, Morocco, Zimbabwe and Botswana in that order. But it lost the leverage by 2001 when African destinations like Algeria and Nigeria overtook it. Since then its position as one of the Africans most visited destination has been unstable with internal shocks like the post-election violence of 2007/2008 as well as the fear from general elections of 2013 threatening the sector from fully recovering.

These facts direct the interest of this study. Kenyan vision 2030 do recognize tourism sector as one of the sub-pillar in the economic pillar yet very few empirical studies have been done in Kenya with none focusing on the causality between the economic growth and the international tourism earning. The study answers this critical linkage by analyzing the time series data of Kenya between 1980 and 2013 using endogenous growth model and new econometric techniques such as cointegration and Granger Causality test. Main variables will be economic growth rate, fixed capital formation, total expenditure on education (as a proxy of human capital), real exchange rate, share of ICT on exports (as a proxy of level of technology), GDP per worker, internal shocks and international tourism receipts.

### **1.3 Study questions**

The study intends to answer the following research questions:

- I. What is the effect of international tourism receipts on economic growth in Kenya?
- II. What causal relationship exists between international tourism receipts and economic growth in Kenya?

### **1.4. Study Objectives**

#### **1.4.1 The general objective**

The overall aim of this study is to analyze the relationship between international tourism receipts and economic growth in Kenya.

#### **1.4.2 The specific objectives.**

- 1) To estimate the effect of international tourism receipts on economic growth in Kenya
- 2) To find the causal relationship between the international tourism receipt and economic growth in Kenya.
- 3) To offer policy recommendation based on the study findings.

### **1.5 Significance of the study**

The sector of tourism has drawn a lot of attention especially in diversification to the economies of developing nations and small islands are concerned. However, the analysis techniques employed in the previous studies on real influence of tourism on economic growth have been inefficient and inadequate application of new developments in econometrics analysis such as co-integration and Granger causality concepts. Based on these new econometric techniques, the study outcome will be helpful in three folds: First is to the economies of developing countries such as Kenya and small Islands that are aiming to either diversify their economies or industrialize their production process, the policy makers will be able to formulate informed decisions from the empirical results of this study. Secondly, the local and international investors involved in tourism supply chain will stand to benefit from the increased information and lastly it will add to the existing body of literature by using the Kenyan data which will form the basis for further research.

### **1.6 Organization of the proposal**

Following this introduction is Chapter Two which presents the theoretical literature review as well as the empirical literature review and the overview of the two. Chapter Three is the methodology and discusses the conceptual framework, model specification, empirical model, data type, source and topology of the variables as well as the pre-test statistical tests that is used to analysis the data. Chapter Four is the analysis of data and discussion of the result. It thus presents the descriptive statistics, diagnostic tests and the empirical findings. Chapter Five presents the summary of the study findings, conclusion and policy recommendation. It begins with the motivation of the study followed by summary findings and policy

recommendation and then winds up with the limitations of the results and the areas for further research.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter presents the theoretical literature review as well as the empirical review of recent the same area. It then summarizes by discussing the overview of both the theoretical and empirical review.

In a broad sense, tourism can be classified as mass tourism (usually characterized by short term gains but with high density development) or alternative tourism which is characterized by consumption of locally produced goods and services (Weaver, 1999, Woodside and Lysonski, 1989). Therefore alternative tourism has been closely associated with ecotourism and sustainable tourism according to WTO standards.

### **2.2 Theoretical literature review:**

#### **Keynesian model of an open economy**

To develop our theoretical literature, assume two identical nations (Nation X and Nation Y). Let the only difference between the two nations be nation X receives tourist inflow while nation Y does not. If we considering an open market economy by the Keynesian school of thought, then a consumption of services and goods (through increased aggregate demand) in nation X by the foreign tourists will stimulate the production of more goods and services as well as income to the sector. And since, according to Eugenio-Martin & Morales (2004), tourism tends to be more of labour intensive then a rise in production is closely associated with a rise in employment. They farther suggest that the increase in employment is crucial to developing countries whose production is still below the full employment level. They however warn that the high demand for employment may raise wages which may create a shock in the job market inducing mobility across the sectors- what macroeconomist may term as the Dutch diseases that may greatly affect the lagging sector of the economy.

Sinclair (1998) is of the idea that the economic influence the tourism sector on any nation's economic growth should be examined in two folds: that is the positive influence and the negative influence on the society. The positive influences revolves around the provision of hard currency that is very crucial in the purchases of capital goods, increased personal income, raises the tax revenue base as well as additional employment opportunities. Expenditure by foreign tourist may lead to accumulation of physical capital mainly due to domestic tourism constructions as well as human capital development as the sector demand for skilled labour. Negative impacts may arise, according to Hazari and Ng (1993), when tourists spends on internally produced products thus affecting both the tertiary and non-durable goods consumption sector. To them, a rise in demand of locally produced goods and services due to demand from the foreign tourist, reduces the resident's welfare as real wages are affected by the demand cause inflation. However they are optimistic that this negative impact is sometimes compensated by the positive/constructive effect on the overall welfare of the country. Gursoy & Rutherford (2004) summarizes the negative influences of tourism as rising pollution, traffic jams, degradation of the environment, emergency of crime as well as violence related to tourism. The host country has therefore to spend a lot of resources in improving the domestic security. The net effect is a reduction in the net benefit from the tourism industry.

### **2.2.1 The theory of tourism consumption system**

According to this theory, the influence of one tourism activity influences the decisions of a potential tourist on subsequent activities. This theory therefore narrowly puts a prediction behavioral pattern which should be observable in the consumption of the tourist products (Woodside and Roberta, 1994). The theory goes on to highlight some of the main variables

that can be used to explain the choice of destination like the marketing strategy by the host country and present/current trip planning by the tourist (Woodside and Roberta, 1994). However, many scholars have criticized the inability of this theory to predict and explain the choice of the tourist destination.

### **2.2.2 Tourism-Led Growth Hypothesis (TLGH)**

This is a hypothesis that stipulates that an economy's growth can be raised not just by adding more labour units and/or capital units in the production process but also through expanding export (Balassa, 1978). While using the endogenous growth model developed by Lucas (1988), Pigliaru&Lanza (1995) compares two nations. One nation's economy specializing in the manufacturing/ processing of goods while the other economy specializing in production of tourism goods in order to find out whether or not tourism sector leads to a lower economic growth than manufacturing of goods. Their main assumption was that while the manufacturing of goods benefited from technological progress, tourism industry lacked this crucial technological advantage. They concluded that tourism industry would grow much faster than the manufacturing sector if and only if the two goods or product in question were not close substitute and an increase in the TOT was higher than the compensation of the gap in technologic between the manufacturing sector and tourism sector. Candela and Cellini (1997) later showed that the technological gap is usually smaller than the terms of trade in the case of a small economy (smaller by size). Small economies were found to posses smaller opportunity cost to specialize in tourism which is a good opportunity to developing nations such as Kenya.

### **2.3 Empirical literature review**

This part reviews some of the recent empirical studies done by other scholars in the area under study and their findings.



Sinclair et al. (2010), in their study of TLGH, found out that tourism sector had a positive influential role in economic growth through creating employment opportunities and income generation to the government through foreign exchange earnings to the recipient economy. The foreign exchange is usually a vital component in economic growth to especially developing nations as it is used to purchase capital goods for further production and thus expanding the output of such a recipient nation.

Lean and Tang (2010) investigated the causality among tourism receipts and gross domestic product of Malaysia in the period 1989 - 2009 by a VAR (which suffers spurious regression problem in case the data is non-stationary). The study revealed a causality running from the receipts to economic growth for the country.

While investigating the causality between international tourism receipts and economic growth in Greece using a VECM for the time period between 1960 and 2007, (Kasimati, 2011) found out that the causality ran in both sides (bidirectional causality). This meant that previous year's tourism receipts could be used to explain the economic growth of preceding year and vice versa.

Same study was carried on by Belloumi (2010) using Tunisia data of between 1970 and 2007 and applied a VECM and he found that the causality was bidirectional meaning tourism could be used to explain the variation in economic growth and equally economic growth could account for the variation in tourism sector.

Another study in Turkey by Zortuk (2009) investigating the relationship between economic growth and tourism growth found out a unidirectional causality running from international

tourism receipts to Turkey's economic growth. His time period was however less than the minimum thirty years required in a time series data since it was between 1992 and 2008. This study was improved by Katircioglu (2009) who applied VECM on Turkey on a larger data for a 46 year period. The study findings reveal no causality between the two macro economic variables. However, Arslanturk et al. (2011) used data from 1963- 2006 from the same country to show an existence of a unidirectional causality running from the receipts to economic growth by applying rolling window and time-varying coefficients estimation methods.

On studying the contribution of tourism earnings on gross value addition, Odunga and Folmer (2004) used a seven-year data from 1995 and 2001 and found out that tourism contributed to an approximately twelve-percent of gross domestic product in this period. They also found an existence of bidirectional causality between the two macroeconomic variables.

Lee & Chang (2008) studied the influence of tourism sector on the economies of both OECD and Non-OECD countries using a panel data for twelve year period. Their result reveals a contrary for the two regions. The results were interesting with a revelation of unidirectional and bidirectional causality in OECD and Non-OECD respectively.

In their study of cointegration and causality between tourism growth and Taiwan's economic development, Kim et al. (2006) applies Cointegration and Granger causality tests. The study revealed that all variable used were cointegrated and finds Granger causality test was bidirectional causality.

Using Korean data to find causality between economic growth and tourism expansion, Oh (2005), applies Engle-Granger two stage methods and VAR model. Although he found no existence of long-run equilibrium between tourism growth and economic growth, his results found out a unidirectional relationship between economic growth and tourism growth for Korea.

Brida, et al, (2008b) studied data from Mexico to establish causality for three macroeconomic involving current account, economic growth and tourism expenditures for the period 1980 to 2007. They found out a unidirectional relationship running from tourism expenditure to real gross domestic product.

According to Tonamy and Swinscoe (2000), the impact of tourism on employment can either be direct and indirect. The direct tourism jobs constitute approximately 5.7% of national employment in Egypt while the indirect and induced jobs included are about 12.6%. They further suggest that Tourism account for over 10% to Egypt's GDP. But to Archer and Fletcher (1996), Tourism expenditure's Impact varied by the country of origin of the tourists so that if the tourist originate from a country with a higher spending behavior, there will a greater economic impact. Their study shows that tourism earning alone accounts for over 24% of GDP in Seychelles.

Durberry (2004) while investigating the practicability of the Tourism-led growth hypothesis using an endogenous growth model that assumed economic growth as a function of in three variables (physical capital, human capita and tourism receipts), used value of exports to proxy international tourism receipts. The study found a bi-directional causality. Our study completes this study by using the international tourism receipts data to test for the causality between the two macroeconomic variables.

## **2.4 Overview of the literature**

Most theoretical and empirical literature review (above) supports an existence of a positive and significant influence of international tourism receipts on economic growth of a nation. While some studies such as Archer and Flestcher (1996) have found a positive impact of international tourism receipts on economic growth, others such as Hazari and Ng (1993) have warned of a possible negative influence resulting from insecurity brought by tourism activities. For causality between the two macroeconomic variables, studies are dividing with some finding a unidirectional causality like Lean & Tang (2010) while other finding a bidirectional result like Kasimati (2011) and Belloumi (2010). However none of these studies have been done in Kenya. This study therefore bridges the knowledge gap by extending the study to Kenya.

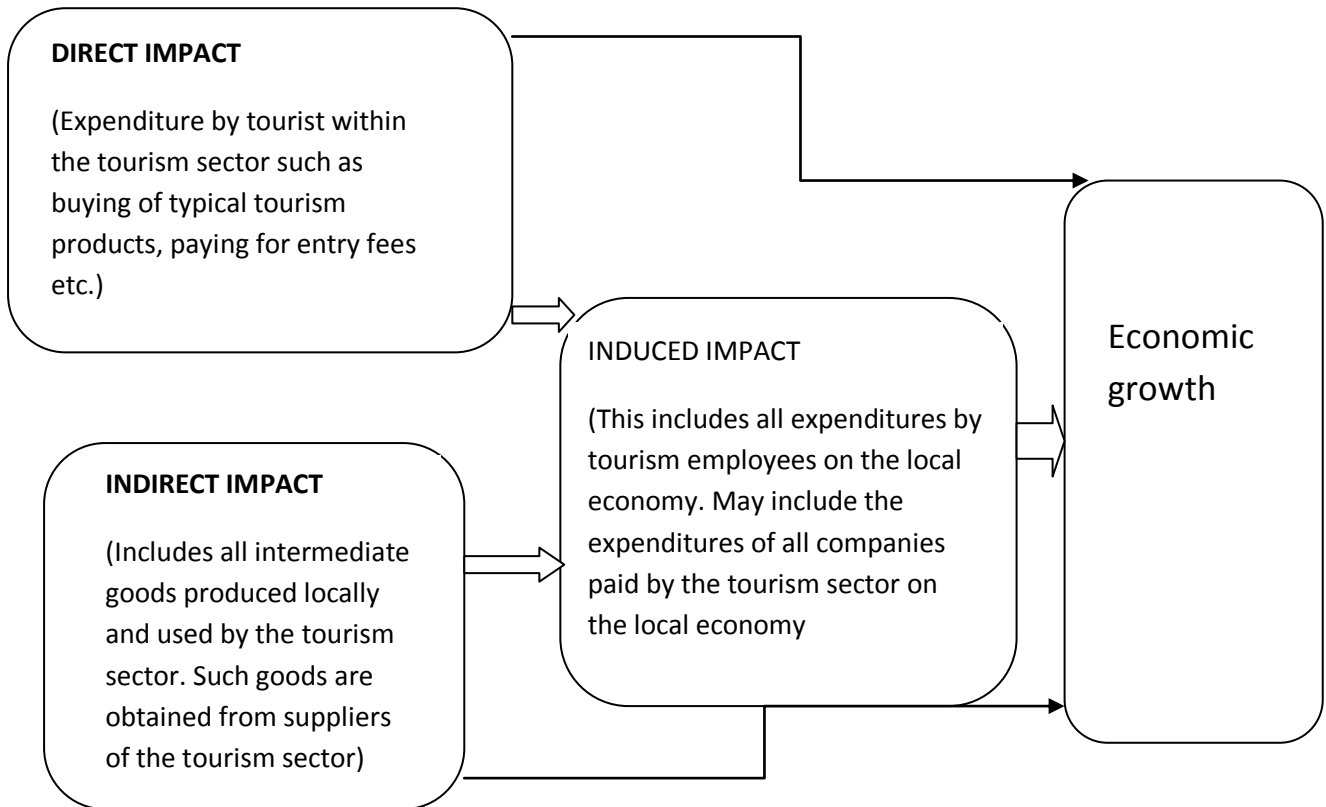
## **CHAPTER THREE: METHODOLOGY**

### **3.1 Introduction**

This section presents the methodology of the study and thus discusses the conceptual framework, the theoretical framework, empirical model and the pre test estimations.

### **3.2 Conceptual framework**

There exist a powerful linkage between receipts from cross-border tourism and some key economic sectors of the economy. For instance visitor's arrival has a multiplier effect on the economy where expenditure rise increasing the revenue of both the government and the private firms associated with the tourism activities (Marin (1992). From the figure below, it's clear that the influence of the tourism sector is in three folds: through direct impact (that involves expenditures by tourist within the tourism sector on the typical tourism products), through the indirect impact (that entails consumption of all intermediate goods by the tourism sectors such as goods that they buy from their suppliers. Usually forms the tourism supply chain and crucial for the promotion of locally produced goods) or through induced impact (that includes expenditures by employees of the tourism sector or companies that benefit from tourism on locally produced goods and services).



### 3.3 Theoretical frameworks

Many different models have been used to study the influence of tourism industry on country's economic performance. While some have tried to incorporate the tourism demand on the aggregate domestic demand ( Hazari et al, 1995), others have applied the growth model (Durbarry, 2004).For instance, (Durbarry, 2004) model assumes that economic growth is a function of three variables

$$Y_t = f(PhyK_t, HuMk_t, exP_t) \dots \dots \dots 1$$

Where

*PhyK<sub>t</sub>* is the Physical capital in period t

*HuMk<sub>t</sub>* is the human capital in period t

*exP<sub>t</sub>* is the total exports of a nation at period t

Our study extends the endogenous growth model adopted by Durbarry (2004) and contributes to the existing literature through extending the study to the Kenya case as follows

$$Y_t = f(\text{PhyK}_t, \text{EduExp}_t, \text{Int. TR}_t, \text{EXR}_t, \text{Sh. ICT}_t, \text{Trd. OPnK}_t, \text{DBt. BdK}_t, \text{GDP/Worker}_t, \text{M2/GDP}_t, \text{Int. shock}_t) \dots \dots \dots 2$$

Where:

$Y_t$  = Gross Domestic Product growth rate representing the economic growth of Kenya at period t

$\text{EduExp}_t$  = total expenditure in education and a proxy of the human capital and labour productivity of the country measured in US Dollars at period t

$\text{PhyK}_t$  = country's Gross fixed capital formation in period t

$\text{EXR}_t$  = country's real exchange rate which is a proxy used to measure international competitiveness

$\text{Int. TR}_t$  = international tourism receipts (US Dollars) and the main variable under study

$\text{Sh. ICT}_t$  = is the variable used to capture the level of infrastructure. It is the share of ICT as a percentage of export.

$\text{Trd. OPnK}_t$  = the trade openness measured as (Exports + imports)/GDP time 100

$\text{DBt. BdK}_t$  = the debt burden of the country which is the ratio between debt services and exports time 100

$\text{M2/GDP}_t$  = the percentage ratio of broad money (M2) and the GDP which is a proxy of the financial deepening

$\frac{\text{gdp}}{\text{worker}}$  = the ratio gross domestic product per employed person at constant 1990 and a proxy of the average wage

$\text{intershock}$  = the internal shocks that have occurred for the past 34 years

### 3.4 Empirical model

To estimate the theoretical model in **equation 1**, the study adds an error term  $\epsilon_t$  that will capture the characteristics of the statistical nature of the empirical analysis as follows.

$$Y_t = f(PhyK_t + EduExp_t + Int.TR_t + EXR_t + Sh.ICT_t + Trd.OPnK_t + DBt.BdK_t + GDP/Worker_t + M2/GDP_t + Int.shocK_t + \epsilon_t \dots \dots \dots 3$$

Where

$\alpha_0$  = the intercept

$\alpha_1, \alpha_2, \dots, \alpha_5$  are the unknown slope coefficients for the exogenous variables in the model

$\epsilon_t$  = the term that captures error in measurements or variables not included in the model.

The subscript  $t$  captures the time period.

### 3.5 Data type, source and Typology of variables

This study will be based on the annual time series data (1980-2013) of the macroeconomic variables GDP growth rate, physical capital accumulation, overall expenditure on education, share of ICT on exports (as a proxy of the level of infrastructure), trade openness of the country, GDP per worker (as a proxy of the average wage), the percentage ratio of M2 to GDP (as a proxy of the financial deepening), internal shocks, the country's competitive advantage (represented by real exchange rate) and international tourism receipts. It utilizes secondary data from World Bank Indicators (WDI), International Labour Organization (ILO), various government documents and UNCTAD database.

Table 1. Shows the type of data, source & Typology of variables

Variable name	Variable proxy	Description	Expected sign	Source
Economic growth	$Y_t$	Real GDP growth rate expressed in percentage	Is the dependent variable	UNCTAD 2015
Human capital accumulation	$EduExp_t$	Total expenditure on Education in US Dollars	inconclusive	WDI (2015)



Variable name	Variable proxy	Description	Expected sign	Source
International competitiveness	$EXR_t$	Real exchange rate of Kenya	-/+	WDI (2015)
Gross fixed capital formation	$PhyK_t$	Gross fixed capital formation in US Dollars	+	WDI (2015)
International Tourism receipt	$Int.TR_t$	International Tourism receipt in US Dollars	+	WDI (2015)
Internal shocks	$Int.shock_t$	Dummy variable 1=if there was an shock 0=otherwise	-	Various economic surveys from 1980 to 2014
Debt burden	$DBt.BdK_t$	(Debt service÷Exports)x100	-	WDI (2015)
Level of infrastructure	$Sh.ICT_t$	Share of ICT as a percentage of the exports	+/-	WDI (2015) (2015)
Gross domestic product per worker	$GDP/Worker_t$	Average wage	+/-	WDI (2015)
Trade openness	$Trd.OPnK_t$	(Exports+imports)÷GDPx100	+	WDI (2015)
Financial deepening	$M2/GDP_t$	The percentage ratio of M2 and GDP	+	WDI (2015)

### 3.6. Estimation technique

The study will estimate the influence of exogenous variables on endogenous variable using the ordinary least squares (OLS) method. The OLS has a unique advantage in this study as it uses observable sample whose regression equation can be estimated (Hayakwawa et al., 2008)

### **3.7. Statistical tests**

#### **3.7.1. Unit root and stationarity test**

The data to be used in the analysis of this research is a macroeconomic time series which, from a theoretical perspective suffers from non-stationarity (Nelson and Plosser, 1982). It will be vital to run a stationarity test first before using it since running a regression on a non-stationary data may lead to invalid empirical result and therefore the study will test stationarity using Augmented Dickey-Fuller (1979, 1981).

#### **3.7.2. Cointegration test**

When two or more macroeconomic variables have a long run relationship, we conclude that those variables are cointegration. Suppose the economic variables in this study have unit root, then the study will proceed to test for cointegration tests. To test for cointegration, the study employed Engel-Granger (1987) test. According to Engel-Granger (1987), if the residuals are stationary, then it means that the variables are co-integrated

#### **3.7.3. Vector Error Correction Model**

It determines whether the error correcting term has a long run causality effect. It is a special model in that it ensures that the economic variables in the model are stationary after first differencing. For its development, the economic variables must have cointegrating vectors which will be done first in 3.7.2 above. This model is vital in checking whether an individual lagged economic variable has any significant effect on the dependent variable. This will be carried in this study through all the lagged variables and GDP. The sign of the coefficient of ECT will guide in the conclusion of the direction of causality

#### **3.7.4 Granger Causality**

This will be to test for the existence of the short-run causality between macroeconomic variables under investigation. The test checks whether one time series data could be used to predict another time series data and therefore will be used in this study to check whether tourism receipts could be used to forecast the GDP of Kenya in the future. The study will therefore conduct a check on whether the lagged variables combined have any significant influence on the depended variable. It will also be used to determine the type of causality between GDP and tourism receipts.

#### **3.7.5 Diagnostics Tests for Normality and Serial Correlation**

This study will utilize Shapiro-Wilk test to conduct a normality test for the error term. It will involve computation of the, W, V, Z and P-value. We use the p-value to make an inference of normality. If our calculated p-value exceeds the critical value, then the variable will be statistically significant or normal in our case. If the calculated p-value is smaller than the critical value, then a variable is not significant or not normal. The credibility of the OLS parameters will be test through testing for the degree of multicollinearity and heteroscedasticity.

## **CHAPTER FOUR: ANALYSIS OF DATA AND DISCUSSION OF RESULTS**

### **4.0 Introduction**

The section presents the study results from the empirical analysis and discusses their economic interpretation. It begins with the description of all variables used in our model followed by diagnostic tests of a time series data and finally an OLS regression and a discussion of results.

### **4.1 Descriptive statistics**

Descriptive statistics was mainly carried out in this study to ascertain the statistical characteristics of the data used in the model. This study uses annual time-series data between 1980 and 2013. The main variables under study include GDP growth rate and the receipts from international tourism (indicating the performance of the tourism sector) while other variables like total expenditure in education, gross fixed capital formation, real exchange rate (an indication of the international competitiveness), share of ICT on exports, trade openness, debt burden, GDP per worker (a proxy of the average wage) ,the ratio of M2 and GDP (proxy of financial deepening) and internal shocks acted as control variables. Most variables were obtained from the world development indicator (WDI, 2015) while some were from the UNCTAD (2015) online website.

**Table 2: shows the descriptive statistics**

<b>Variables name</b>	<b>Mean of variable</b>	<b>Standard Dev.</b>	<b>Maximum</b>	<b>Minimum</b>	<b>Kurtosis</b>	<b>Skewness</b>
$Y_t$	3.680969	2.3232	-.793179	7.71446	2.087698	-.3046491
$PhyK_t$	18.41025	.3006374	21.38559	15.3879	-.1554632	1.911264
$Int.TR_t$	797000000	96500000	2000000 0	4000000	1.80325	.4808693
$EduExp_t$	6.001101	1.253328	4.58096	7.33565	1.773207	.1525013
$EXR_t$	51.13586	28.05369	7.568	88.72775	1.458144	-.3066223
$Int.shock_t$	.3235294	.4748581	0	1	1.56917	.7544335
$Sh.ICT_t$	13.8537	19.19557	1.300369	70.04114	4.291739	1.655703
$Trd.OPnK_t$	14.70059	5.112746	9.62	27.47	3.74718	1.342622
$DBt.BdK_t$	2798.476	1427.666	690.62	5270.46	1.853548	-.0464977
$GDP/Worker_t$	3046.206	224.5863	2689	3448	1.973461	.0245852
$M2/GDP_t$	34.81621	4.580551	26.68185	42.23227	1.747896	-.1961378

Source: Author's calculation

From table 2 above, the GDP growth rate has a mean of 3.68% with a standard deviation of 2.32% and a respective minimum and maximum of -0.793% and 7.71%. The average gross fixed capital formation within the 34 year period is 3511.643 million US dollars with a

standard deviation of 2751.722 million US dollars. The highest gross fixed capital formation is 11276.95million US dollars and the lowest is 1199.945million US dollars. The mean of international tourism receipts in US dollars is 647 million with a standard deviation of 671million and a minimum and maximum of 331740Us dollars and 200million US dollars respectively. The international tourism receipts have steadily increased since 1980. The average expenditure on education is 6.0 percent of total government expenditure while the minimum and maximum expenditure on education is 4.58% and 7.34% of the total government expenditures respectively. The average real exchange rate (real) is at 51.18824 in the 34 year period with its standard deviation being 27.98382. The minimum real exchange rate is at 7.57while maximum exchange rate (real) being 7.57.

Since the study used time series data, Kurtosis and Skewness were employed to give a clue of the trend of the individual variable. Kurtosis measures the flatness of the distribution and with the results from the table 2 above; it reveals that all the variables are leptokurtic since their distributions are peaked sharper than a normal distribution. Skewness, which shows the symmetry of the distribution around the mean of each variable, shows that gross fixed capital, International tourism receipts, total expenditure on education, internal shocks, share of ICT, trade openness and GDP per worker are positively skewed. This means that all these variables have long right tails. The study also reveals that GDP growth rate; real exchange rate, the percentage ratio of M2 to GDP and debt burden are negatively skewed, implying that they have a long left tail.

## Pre-estimation tests

### 4.2 Diagnostic tests

#### 4.2.1 Normality test

This study uses the Shapiro-Wilk test to determine normality of variables. A variable is normal if the mean, median and mode are equal (that is normally skewed). The Shapiro-Wilk test gives four options, a W, V, Z and P-value. We use the p-value to make an inference of normality. If our calculated p-value exceeds the critical value then our conclusion is that the variable is normal. But if the calculated p-value is smaller than the critical value, then a variable will be non-normal.

**Table 3: Shapiro-Wilk normality test**

Variable	observation	W	V	Z	Prob>z	status
$Y_t$	34	0.96098	1.363	0.645	0.25956	Normal
$PhyK_t$	34	0.73807	9.146	4.612	0.00000	Non-normal
$Int.TR_t$	34	0.84420	5.440	3.529	0.00021	Non-normal
$EduExp_t$	34	0.67223	11.445	5.079	0.00000	Non-Normal
$EXR_t$	34	0.87774	4.269	3.024	0.00125	Non-normal
$Int.shock_t$	34	0.95630	1.526	0.881	0.18924	Normal
$Sh.ICT_t$	34	0.66071	11.847	5.151	0.00000	Non-normal
$Trd.OPnK_t$	34	0.80700	6.739	3.976	0.00004	Non-normal
$DBt.BdK_t$	34	0.93880	2.137	1.582	0.05678	Normal
$GDP/Worker_t$	34	0.95977	1.405	0.708	0.23945	Normal
$M2/GDP_t$	34	0.92787	2.519	1.925	0.02712	Normal

Source: Author's computation

Results from table 3 above show that only GDP growth rate, the ratio of M2 to GDP, total debt services and education expenditure are normal at 5% level of significant while the rest of the variable are not normal.

### 4.2.2 Multicollinearity

This problem arises when two or more independent variables are strongly related. According to Gujarati (2012), a correlation of 0.8 and above indicates the possibility of collinearity between two variables. This study used the Vector Integrating Factor (VIF) and Tolerance (1/VIF) to test for multicollinearity. The VIF test directs that one first runs a regression followed by a VIF command in Stata. Then an inference is made based on the magnitude of the VIF value. If the VIF value is less than 10, then a variable has no multicollinearity. Conversely, if the VIF is greater than 10, then multicollinearity exists.

**Table 4: VIF and Tolerance results**

Variable	VIF	/1VIF	Status
$Y_t$	5.406	0.042873	no multicollinearity
$PhyK_t$	2.332	0.088582	no multicollinearity
$Int.TR_t$	9.99	0.100135	no multicollinearity
$EduExp_t$	2.45	0.407365	no multicollinearity
$EXR_t$	1.475	0.067789	no multicollinearity
$Int.shock_t$	1.541	0.090973	no multicollinearity
$Sh.ICT_t$	1.09	0.913749	no multicollinearity
$Trd.OPnK_t$	4.44	0.225052	no multicollinearity
$DBt.BdK_t$	8.00	0.125005	no multicollinearity
$GDP/Worker_t$	7.07	0.141497	no multicollinearity
$M2/GDP_t$	5.44	0.183797	no multicollinearity

Source: Author's computation

Results from Table 4 above show that there is absence of multicollinearity among all our variables because all our VIF values are less than 10.

### 4.2.3 Stationarity (Unit root test)

The study employs ADF test to test for stationarity in the individual variables. According to ADF test, a variable is declared stationary when its t-calculated is smaller than the t-critical.

Table 5: ADF test results



Variable	Test Statistic	1% critical value	5% critical value	10% critical value	Nature
$Y_t$	<b>-3.744</b>	<b>-3.696</b>	-2.978	-2.620	Stationary
$PhyK_t$	<b>3.881</b>	<b>-3.696</b>	-2.978	-2.620	Non stationary
$Int.TR_t$	<b>-0.857</b>	<b>-3.696</b>	-2.978	-2.620	Non stationary
$EduExp_t$	<b>-3.565</b>	<b>-3.696</b>	-2.978	-2.620	Non stationary
$EXR_t$	<b>-0.943</b>	<b>-3.696</b>	-2.978	-2.620	Non stationary
$Int.shock_t$	<b>-4.930</b>	<b>-3.696</b>	-2.978	-2.620	Stationary
$Sh.ICT_t$	<b>-0.717</b>	<b>-3.696</b>	-2.978	-2.620	Non stationary
$Trd.OPnK_t$	<b>-2.394</b>	<b>-3.696</b>	-2.978	-2.620	Non stationary
$DBt.BdK_t$	<b>-1.217</b>	<b>-3.696</b>	-2.978	-2.620	Non stationary
$GDP/Worker_t$	<b>-0.717</b>	<b>-3.696</b>	-2.978	-2.620	Non stationary
$M2/GDP_t$	<b>-1.303</b>	<b>-3.696</b>	-2.978	-2.620	Non stationary

Source: Author's computation

From table 5, only GDP growth rate and internal shock are stationary because their test statistics are less than the critical value at levels. On the contrary, real exchange, gross fixed capital formation, International tourism receipts, the percentage ratio of M2 to GDP, GDP /worker, debt burden, Share of ICT and education expenditure are non-stationary. These non-stationary variables require additional attention to determine whether they are co-integrated.

Therefore, taking the first difference gives the results in table 6.

**Table 6: ADF test results for differenced variables**

Variable	Test Statistic	1% critical value	5% critical value	10% critical value	Nature
$d\_PhyK_t$	<b>-3.776</b>	<b>-3.702</b>	-2.980	-2.622	Stationary
$d\_Int.TR_t$	<b>-6.096</b>	<b>-3.702</b>	-2.980	-2.622	Stationary
$d\_GDP/Worker_t$	<b>-3.287</b>	<b>-3.702</b>	-2.980	-2.622	Non-Stationary
$d\_EduExp_t$	<b>-8.128</b>	<b>-3.702</b>	-2.980	-2.622	Stationary
$d\_EXR_t$	<b>-6.160</b>	<b>-3.702</b>	-2.980	-2.622	Stationary
$d\_Sh.ICT_t$	<b>-5.533</b>	<b>-3.702</b>	-2.980	-2.622	Stationary
$D\_Trd.OPnK_t$	<b>-6.072</b>	<b>-3.702</b>	-2.980	-2.622	Stationary
$M2/GDP_t$					

Source: Author's computation

The table above shows all variables that were non stationary at order zero being stationary at order one i.e. I (1) except for GDP / worker. Taking the second differencing for GDP/worker shows that it is stationary at the second difference as shown below

Variable	Test Statistic	1% critical value	5% critical value	10% critical value	Nature
DD_GDP/Worker <sub>t</sub>	-12.193	-3.709	-2.983	-2.623	Stationary

#### 4.2.4 Testing for Cointegration

When variables have a long run equilibrium relationship, we say they are cointegrated. Most of the time when economic variables are individually non-stationary; it is likely that cointegration may occur. Cointegration test is normally a pre-test for a time series data which tries to eliminate spurious regression situations of non stationary data. Thus cointegration relationship existence implies that the regression of non-stationary series in their levels yield meaningful and not spurious results. To test for cointegration, the study employed Engel-Granger (1987) test. According to Engel-Granger (1987), if the residuals are stationary, then the variables in the model are co integrated.

Table7: Engle-Granger Test for Co integration

Variable	t-statistic	1% level	5% level	10% level	Nature
Residuals	<b>-5.088</b>	<b>-3.702</b>	-2.980	-2.622	Stationary

Source: Author's computation

From table 7, the t- value of test statistics are smaller than all the critical level and hence we reject the null hypothesis of no co integration among the variables. This therefore implies that variables in the model do have a long run equilibrium relationship. This shows that regression of the non-stationary series in their levels will yield meaningful and not spurious results

#### 4.2.5 The Granger causality test

To test for the existence of short run causality between macroeconomic variables used in the model, we run the granger causality. The test checks whether one time series data could be used to predict another time series data and therefore it has been used in this study to check whether international tourism receipts could be used to forecast the GDP growth rate of Kenya in the future

**Table 8: Engle-Granger Test**

Variable		constants	Z	P> z	[95% Conf. Interval]
GDP growth rate to International tourism	L1	-5.42e-10	-0.36	<b>0.722</b>	-3.53e-09
	L2	4.19e-10	0.28	0.782	-2.54e-09
International tourism to GDP growth rate	L1	4.61e+07	2.29	<b>0.022</b>	6594753
	L2	-5.21e+07	-2.45	0.014	<b>-9.38e+07</b>

#### Interpretation of the result

From the result in table 8 above the p-value of **0.022** implies that the coefficient of international tourism receipts is not zero or rather is statistically significant at 95% level. This is a clear indication that international tourism receipts of the previous year do granger cause economic growth in the current year. Equally the p-value of **0.722** means that that the sample parameter of economic growth rate is not statistically significant- a clear indication that economic growth rate of the previous year does not cause any change in the receipts of international tourism in the current year. This result reveals an one-directional causality running from international tourism receipts to economic growth

#### 4.3 Empirical Findings

*Table 9: long run Regression Results in Level*

Variable	Coefficient	t- Statistic	P-values (at 5% levels)	sign
$Y_t$				
$d\_PhyK_t$	.0017614	2.50	0.021	+
$d\_Int.TR_t$	3.02e-10	0.21	0.839	+

$d\_GDP/Worker_t$	.0107171	2.84	0.010	+
$d\_EduExp_t$	.3568107	1.20	0.242	+
$d\_EXR_t$	-.0638995	0.81	0.425	-
$Sh.ICT_t$	-.0404368	-0.99	0.332	-
$d\_Trd.OPnK_t$	-.0498733	-0.40	0.690	-
$d\_DBt.BdK_t$	-.0006975	-1.28	0.213	-
$M2/GDP_t$	-.1394836	-0.99	0.334	-
$Int.shocK_t$	-.6345239	-0.91	0.373	-
_cons	3.440495	6.84	0.000	
Number of obs = 32 F( 10, 21) = 4.09 Prob > F = 0.0031 R-squared = 0.6610 Adj R-squared = 0.4995 Root MSE = <b>1.6776</b>				

Source: Author's computation

### Interpretation of the Results

An R-squared of 0.6610 indicates that 66.10% of the variation in the Economic growth is explained by the explanatory variables in the model. The regression further indicates that gross fixed capital, international tourism receipts, total expenditure in education and GDP per worker are positively related to the economic growth while the contribution of ICT, real exchange rate, the ratio of M2 to GDP, trade openness and internal shocks showed a negative relationship.

The results further show that when all the independent variables in the model assume the value of zero, economic growth rate will be 3.44%. Holding all other factors constant, economic growth will increase by 35.68% when total education expenditure increases by 1%. Equally if all other factors are held constant, economic growth rate will increase by 0.17614 units when gross fixed capital increases by one unit. When all other factors are held constant, economic growth rate will reduce by 6.39% when real exchange rate increases by

1%. The result also reveals that holding other factors constant, an increase of the share of ICT in export leads to a 4.04% drop in the economic growth. Equally, a rise in debt burden by one unit will result to a drop of 0.007 units in the economic growth holding all other factors while a rise of 1 unit in GDP per worker would result to 1.07% increase in economic growth. Finally, when all other factors are held constant, economic growth rate will increase by 0.0000003 units when international tourism receipts increases by one unit

#### **4.3.1 Discussion of the results**

The coefficient of real exchange rate is positive and insignificant in determining economic growth in Kenya in the period under study. The results confirm with economic theory since when real exchange rate increases (what is commonly called devaluation of domestic currency), imports becomes expensive while exports becomes cheaper in the eyes of foreigners. Thus the net export should increase thus increasing the economic growth. These results are also in agreement with Bailey et al. (1986) study which found a positive relationship between exchange rate and economic growth through increasing of agricultural exports. However, the results contradict Collins(1997) and Hilton (1984).

The coefficient of expenditure in education is positive and insignificant in determining economic growth in Kenya. The results conform to economic theory since education improves labour productivity by equipping workers with information and technology. The insignificance means that an increase in education expenditure may lead to un-meaningful result on economic growth. These results are also in agreement with Spence (1973) who found that education cost was not a good measure of productivity. On contrary, the result contradicts Mankiw et al. (1992) who found out accumulation of human capital through education significant to economic growth. His study took into consideration different

disciplines where more expenditure on engineering subject lead to an improvement in economic growth while more expenditure in courses such as law had no significant to economic growth.

The coefficient of gross fixed capital formation is positive and significant in determining economic growth in Kenya. The results conform to economic theory since gross fixed capital formation improves capital productivity and thus improving the economic growth. The result is in agreement with a study carried by Ku &Pravakar, (2010), Bakare (2011) and Orji, & Mba, (2010)

The coefficient of share of ICT on exports is negative and insignificant in determining the Kenyan economic growth within the study period. This study contradicts economic theory since ICT is a technology which should improves the productivity of labour (Solow, 1956).The negative coefficient may imply that Kenya spends more in the buying of such technology than what their real contribution to output. Most of the production with the country is still labour intensive.

The coefficient of trade openness is negative and insignificant in determining the economic growth in Kenya. This may imply that the country has more restrictions to external trade through measures such as tariffs and non tariffs. Our study contradict theory that suggest that a country with higher trade openness and exporting high quality products will grow faster- a concept the classical economist such as Adam Smith and David Ricardo were advocating through suggesting the adoption of lazier-fair.

The coefficient of debt burden is negative and insignificant at 5% level of significant in determining the economic growth within the period under study. This confirms with theory which suggest that at high indebtedness, economic growth will be negatively generated as government may resort to fiscal policies such as high taxation to repay the tax. Such policies reduce the money in circulation and reduce disposable income thus reducing the aggregate demand. The ultimate effect is the reduction in economic growth.

The coefficient of the percentage ratio of M2 to GDP (a proxy of the financial deepening) is negative and insignificant. This contradicts theory since higher financial deepening are associate with an expansionary monetary policy which may lead to inflation that encourages more production in the short run. However, higher inflation may lead low output in the long run as the real wages are affected leading to a reduction in man hour by the workers. Although our study contradicted the theory, the coefficient is found to be insignificant.

The coefficient of GDP per worker as a measure of average wage and is found to be positive and significant. This contradicts theory since average was is a cost in production and should have a negative effect on economic growth. Although higher wages may motivate the workers to produce more, its cost implication is negative to growth. The international shocks are found to have a negative coefficient but insignificant. This conforms to theory as internal shocks may hinder economic growth.

Finally the coefficient of international tourism receipts is positive and insignificant in determining economic growth in Kenya. The results conform to economic theory since expenditures by tourist increases the aggregate demand in the economy leading to increase in production. Equally an increase of sale of domestic product to the international tourist earns foreign exchange that is crucial in the importation of capital goods. The result agrees with

Katircioglu (2009) who found that international tourism had no significant impact on economic growth. The study contradicts studies by Arslanturk et al. (2011), Lee and Chang (2008) and Kasimati (2011) who had found a significant impact of tourism receipts on economic growth. This could be because tourism industry in Kenya is mostly owned and ran by foreign investors who repatriate profit to their home country leaving little for the Kenyan economy.

In the long run, all variable were cointegrated implying that they have a long run relationship with economic growth. The study therefore conclude that over the period under which the study has been undertaken, the key determinant of Economic growth in Kenya in the long run is GDP per worker.

#### 4.3.2 The short run regression

Table 10: Regression Results in First Difference

Variable	Coefficient	t-Statistic	P-values (at 5% levels)	sign
$Y_t$				
$d\_PhyK_t$	.0022397	2.96	0.007	+
$d\_GDP/Worker_t$	.0247356	9.04	0.000	+
$d\_Int.TR_t$	-3.25e-10	-0.21	0.838	-
$d\_EduExp_t$	.465597	1.44	0.163	+
$d\_EXR_t$	.1036226	-1.21	0.236	+
$d\_Sh.ICT_t$	-.0641042	-1.44	0.162	-
$d\_Trd.OPnK_t$	.0574952	0.45	0.654	+
$d\_DBt.BdK_t$	-.0005725	-1.00	0.329	-
$d\_M2/GDP_t$	-.1548187	-1.01	0.324	-
_cons	3.304004	6.91	0.000	



Number of obs = 33

F( 8, 24) = 3.20

Prob > F = 0.0128

R-squared = 0.5162

Adj R-squared = 0.3550

Root MSE = 1.8747

Source: Author's computation

## Discussions

The short run regression did not perform different in terms of goodness of fit with an  $R^2$  of 0.5162. This implies that 51.62% of the changes in the Economic growth are accounted for by the exogenous variables in our model. As the result in the diagnostic tests have shown, autocorrelation and multi-collinearity were all absent. Some of the variables were non-stationary but were differenced once to become stationary (with GDP per worker being differenced twice). The short term dynamic allowed us to make some meaningful interpretation of the dynamic process. One of the variables as depicted in table 10 above is statistically significant. Thus with such results, the study can discuss the issue of concern. International tourism receipts remained positive and non significant although it did well in the short run regression. The only variables that were found to determine the economic growth in the period under study was gross domestic product per worker and gross fixed capital formation.

## **CHAPTER FIVE:**

### **5.0 SUMMARY, CONCLUSIONS AND POLICY IMPLICATIONS**

#### **5.1 Motivation of the study**

The success of any strategic plan of any nation lies behind the practicability of such plans.

Kenya as a nation has given much attention to the tourism sector in its vision 2030. However, little empirical studies exist in Kenya to help policy planners make informed policies that will see the vision 2030 a reality. Driven by this lack of information linking international tourism receipts and economic growth, this study intended to investigate the causality between the two macroeconomic variables for a period of 34 years

#### **5.2 Summary**

This study aimed at analyzing the influence of international tourism receipts on Kenya's economic growth for the period 1980 - 2013 (chosen mainly because of the various internal and external shocks that have affected the tourism sector such shocks terrorist attacks of 1997, attempted coup of 1982, post election violence of 2007/08). The study sought specifically to investigate the effect of the receipts from international tourism on the country's economic growth as well as the causality between the two macroeconomic variables. The study obtained its objectives by first identifying cointegration causality test- for the long term causality followed by Engel-Granger (1987) - for the short term (run) causality between international receipts from tourism sector and the country's economic growth. Results from cointegration test revealed an existence of the long term relationship of all the variables used in the model while the short term relationship reveals an existence of a unidirectional causality running from international receipts for tourism to Kenya's economic growth under the time duration of the study. The second objective of our study attempted to investigate the influence of international tourism on economic growth and was achieved through regressing the first differencing (short run regression). From the result, despite our

main variable under study (international tourism receipts) remained statistically non-significant in all levels, the result proved that the main determinants for Kenyan economic growth under the period of study was GDP per worker and gross fixed capital formation.

### **5.3 Policy implication**

Both regression (at long run and short run ), study's main variable under study (international tourism receipts) is insignificant. This means that the Kenya as the destination country do receive very little benefits from tourism sector despite the role it has been assigned to in achieving vision 2030. There is therefore a need for the government intervention into the sector through relevant policies such as strengthening the tax body on all foreign companies dealing with tourism activities within the country, investing more funds to the industry through improving infrastructure to the attraction sites as well as incorporating the communities around the attraction sites as tour guides. This will empower such communities through increased wages and thus raising the aggregate demand to the country. Holding other factors constant and increase in aggregated demand will boost output thus increasing economic growth.

Since the study found the causality running from international receipts for tourism to Kenyan's economic growth (unidirectional), this justifies the need for the Kenyan government to boost the tourism sector through advertisement and marketing to areas of the world where our tourism product are less known since its contribution leads to economic growth.

The government should also develop policies that will take care of the volatile exchange rate for example through encouraging flexible exchange rate regime since it was found to be

significant in the short run. For the expenditure in education as a proxy of labour productivity, certain courses like engineering have been found to have a significant role in labour output compared to say law. It is thus crucial for the government to increase funds for such disciplines like engineering but reduce expenditure on discipline that have little impact to the economy. Finally, the government should increase funding to the physical capital accumulation through encouraging saving in the country since it is significant in the short run and also positive.

## **5.2 Limitations of the study**

There several control variable that determine economic growth that were not included in the study since their data was either not enough or was totally missing. Such variables like life expectancy, fertility rate and inflation among other were we unavailable in the period of study. Some were very scant and this led to  $R^2$  of 66 %. These are important variables that should have been included in the study but were left out. The study relied mostly on data available from in WDI and UNCTAD for consistency.

## **5.3 Areas for further research**

The tourism industry is one of the service export sector that can be used to alleviate poverty in some region in Kenya such as the coastal counties. There is a need for further research on the impact of tourism industry and the reduction in poverty levels especially where the locals are given an opportunity to be stakeholders in the sector. There has been an increasing concern from the wildlife-people conflict just because they don't feel the gains from the sector and thus by involving them, they may benefit from the positive spillovers from the sector.

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