AN ANALYSIS OF THE DETERMINANTS OF TOURIST ARRIVALS IN ZAMBIA (1999-2008)

By

Bupe Simuchimba

A dissertation submitted to the University of Zambia in partial fulfilment of the requirement for the award of a Master of Arts in Economics

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DECLARATION

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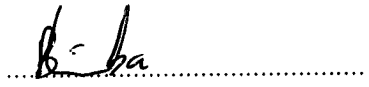

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CERTIFICATE OF APPROVAL

This dissertation of Bupe Simuchimba has been approved as partial fulfilment of the requirement for the award of the degree of Master of Arts in Economics by the University of Zambia.

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ABSTRACT

Tourism is beneficial to the country's growth process. It is a source of government revenue, foreign exchange earnings and employment. The study looks at the demand for tourism in Zambia. It looks at the factors that determine the flow of tourists in Zambia. The overall objective of the study is to examine both the long run and short run relationships between the demand for tourism in Zambia and the factors that influence that demand. It highlights possible factors that make Zambia an attractive tourist destination. The study provides policy makers with a better understanding of factors that attract tourists to Zambia. It provides empirical verification of the determinants of tourism demand. In so doing, it offers policy recommendations that will ensure the recognition of the best strategies needed to develop and efficiently run the tourism sector in Zambia. We estimate the determinants of tourist arrivals in Zambia using the Generalised Method of Moments (GMM) model. The study uses annual data for the 1999-2008 period for 16 source countries. The demand factors included in the analysis are income of the source country, the cost of living, transportation cost and the number of airlines servicing Zambia. Other factors such as the ongoing visit Zambia campaign and the September 11 attack are included as dummy variables to determine their impact on tourist arrivals. The study shows that the variables measuring the cost of living, transport costs and the number of airlines servicing Zambia have an impact on the number of tourist arrivals in both the short run and the long run. However, the income of the source country variable does not influence tourist arrivals in Zambia for this study. Further, the results of the study show that of the two dummy variables, only the September 11 attack dummy variable had an impact on the flow of international tourists into Zambia. In order to increase the flow of tourist arrivals, the study recommends an improvement in infrastructure, the quality of the tourism product offered and making Zambia an affordable tourist destination.

DEDICATION

I would like to dedicate this thesis to my mum, Fortunata Mambwe Simuchimba and my late dad, Maxwell Simuchimba.

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LIST OF ABREVIATIONS

CPI= Consumer Price Index

EU= European Union

FDI= Foreign Direct Investment

FNDP= Fifth National Development Plan

GDP= Gross Domestic Product

GMM= Generalised Method of Moments

IMF= International Monetary Fund

IV= Instrumental Variables

MFNP= Ministry of Finance and National Planning

MTENR= Ministry of Tourism, Environment and National Resources

NACL= National Airport Corporation Limited

NZ= New Zealand

PRSP= Poverty Reduction Strategy Paper

ROADSIP= Road Sector Investment Programme

SA=South Africa

SARS=Severe Acute Respiratory Syndrome

UK=United Kingdom

UN=United Nations

UNDP=United Nations Development Programme

USA=United States of America.

ZTB= Zambia Tourist Board

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The tourism sector is one of the sectors that has contributed substantially to the economic development of many countries in the world. In most countries, the tourism sector accounts for a large proportion of GDP. Its contribution to GDP directly or indirectly through tourism related activities is 10%. If properly managed, the tourism sector is a source of government revenue, foreign exchange earnings and employment. The importance of the tourism sector to an economy creates a need to investigate the factors that determine the demand for tourism in a country.

Africa faces a number of challenges in its tourism industry streaming from the under development of most of the countries on the continent. In 2007, global tourism accounted for 922 million arrivals with Africa and the Middle East each receiving the lowest share of these arrivals at 5% (Messerli and Pope, 2009). As a result of the global financial crisis in 2008, world tourist arrivals fell to 802 million of which Africa attracted fewer than 37million of these arrivals (Moyo, 2009). Egypt, South Africa, Morocco and Tunisia are the only African countries listed on the top 50 worldwide tourist destinations. However, many African countries offer a number of attractive tourism sites with wildlife and their cultural heritage being some of their unique offerings.

Zambia is one such country that offers unique attractive tourist sites yet it is not among the top 50 worldwide tourist destinations. The country has a great land mass, an abundance of natural resources, a temperate climate and a stable political environment. This should make it an ideal tourist destination. Yet out of the whole Sub- Sahara Africa, Zambia only commands 0.6% of the total demand for tourism in the region (Tourism and Travel Council, 2008). However, since the early 1990s, the number of tourist arrivals has rapidly increased. It has been estimated that tourist arrivals have grown by more than 400% from 1991 to 2008. The increase in the number of tourist arrivals between 1998 and 2004 has attracted significant

investments in the sector such as the Sun International, Zambezi Royal and Star of Africa (Pycroft, 2004).

In 2008, tourism in Zambia contributed only 5.1% of GDP compared to its competitors with 10.8% and 9.4% of GDP for Kenya and Botswana respectively. In the same year, Zambia's tourism sector accounted for 4.5% of employment while its competitors, Kenya (8.7%) and Botswana (10.7%) had higher figures (Travel and Tourism Council, 2008). The low contribution of tourism to the Zambian economy raises concerns which require an investigation into the sector. It also raises questions on the development of the tourism related infrastructures such as the road network, communication facilities and the standard of accommodation, the level of investment in the tourism sector and the quality of policy formulation and implementation.

The standard of roads in Zambia is poor and lacks adequate maintenance. The road network consists of very few tarred roads supporting many earth roads. Thus, most of the tourist sites can only be accessed using earth roads or by air (Pycroft, 2004). In 2004, Zambia had a road network of approximately 67,000 kilometres of which 6,476 kilometres were tarred, 8,478 kilometres were gravel and 21,967 kilometres were earth roads. It also comprised of approximately 30,000 kilometres of unofficially registered community roads consisting of tracks, trails and foot paths (Meeuws, 2004). However, the Road Sector Investment Programme (ROADSIP) was launched to maintain and rehabilitate 50% of the road network between 1997 and 2007. The second phase of the project was later launched in 2003 and will run for 10 years. In 2009, Zambia had approximately 91,440 kilometres of road network which comprised of 22% as paved roads.

The government has also continued its efforts in improving infrastructure at some airports in the country. In 2007, approximately K2.5 billion was realised for the development of the Lusaka, Livingstone, Mfuwe and Kasama airports (MFNP, 2007). Most of the works on these airports are still in progress. These developmental efforts by government are to ensure that airports reach internationally acceptable standards. It is important to note that the airports, roads, hotels and tourist attractions need to complement each other in order for the tourism sector to make a greater contribution to the economy. Further, a UNDP study suggested that with better management of Zambia's wildlife resources, economic activity of up to US$1 billion in a year would be generated (Cattaneo, 2007:213). Currently, the tourism sector only generates about US$500 million in a year.

The government continues to place emphasis on tourism infrastructure development in order to increase tourism earnings and to move away from traditional exports (MFNP, 2006). Though export diversification has been a focus on improving Zambia's economy since the early 1990s, it has not been successful. The share of non traditional exports in Zambia's total exports increased from 8% in 1990 to 38% in 2003, but this increase was mainly in the agriculture sector (Yagci, 2005). It needs to be realised that Zambia's competitive strength is not only in labour intensive activities but natural resources intensive activities as well. The tourism sector offers both these competitive strengths as well as offering jobs that require little skills or short training.

Lately, the need for export diversification had been fuelled by the poor performance of Zambia's major export, copper which had been recently negatively affected by the global financial crisis. Although, the tourism sector had also been affected by the financial crisis the impact was far less than that experienced by the mining industry. The mining industry had most mines shut down with 8,500 people losing their jobs. However, 1,500 jobs have been recovered (MFNP, 2010). Although the tourism sector had experienced a 9.5% reduction in arrivals, it still continued to operate. The poor performance of the tourism sector can be attributed to a reduction of investment in the sector and the financial difficulties faced by potential tourists due to the financial crisis.

A better understanding of the factors that attract tourists into Zambia will help policymakers concentrate on the best strategies that will develop the sector accordingly. Improvement in the policies undertaken to develop this industry are vital especially when greater emphasis is being placed on the exploration of new export products. Undeniably, the tourism sector is one area that needs to be developed in Zambia's diversification of exports.

1.2 Statement of the problem

Zambia has great potential in its tourism sector with its abundant natural resources and wildlife, yet this potential is not being fully exploited. The importance of tourism to a country in terms of its contributions to GDP, revenue, employment and foreign exchange earnings inspires the need to investigate the factors that influence the demand for tourism in the country.

Compared to its neighbours, Zambia's tourism sector has the second lowest rate of contribution to GDP and employment. Most of its neighbours get twice as much GDP and employment from the tourism sector. In 2001, the tourism sector achieved its highest growth rate of 24.4% but this declined to 4.9% in 2002 (MFNP, 2006). In 2007 the tourism sector grew by 14.2% compared to 16.1% in 2006. The tourism sector's contribution to GDP has shown a gradual increase from 1.8% in 1999 to 2.4% in 2003 (MFNP, 2003). In 2007, the sector made its highest contribution to GDP of 9.6%. In terms of employment, the tourism sector has shown a significant increase. In 1999, it employed 10,340 people but this has gradually increased to 24,308 in 2008 (MTENR, 2008).

The under development of most of Zambia' infrastructure and the poor service in the tourism sector has contributed to the sector not achieving its potential. There is need to focus on the improvement of tourism related infrastructure and the provision of customer based services in the tourism sector. This is particularly so with restaurants and hotels since these are the main contributors to GDP and employment in the tourism sector. In the period 1999 to 2008, on average, the accommodation industry has contributed 38% of the foreign exchange earnings generated from the tourism sector.

In 2005, Zambia was the second worst performer in the region when growth of the tourism sector stagnated at 1.3 percent while tourism earnings in Botswana and Tanzania grew 10 times faster (Cattaneo, 2007). Zambia attracts less than 1 million tourists every year compared to more than 2 million tourists for Zimbabwe at its peak. Contributing to this poor performance has been the fact that out of the 33% of the country's land area devoted to wildlife and natural resources, only 5% of this land area has been developed for tourism (MFNP, 2002). This shows that Zambia is not fully exploiting its resources and is reaping limited developmental benefits from the tourism industry. However, the importance of tourism to economic development cannot be denied.

1.3 Objectives of the study

The overall objective of this study is to examine the long run and short run relationship between the overall demand of tourism in Zambia and the factors that influence this demand. The specific objectives are as follows;

(i) To determine the impact of income on tourist arrivals.

(ii) To determine the influence of relative prices on tourist arrivals.

(iii) To determine the influence of airlines availability on tourist arrivals.

(iv) To make policy recommendations on ways to improve the number of tourist arrivals.

1.4 Hypothesis

The hypotheses of this study are that;

(i) The income of the source country is not likely to affect tourist arrivals.

(ii) The cost of living in the destination country is not likely to affect tourist arrivals.

(iii) Transport costs are not likely to affect tourist arrivals

(iv) The number of airlines servicing the destination country are not likely to affect tourist arrivals.

1.5 Significance of study

The tourism sector is of growing importance to the development of the Zambian economy. The results of this study will help policymakers address the factors that influence the demand for tourism in their strategies to properly develop the tourism sector.

The tourism sector makes minimal contributions to development of the Zambian economy directly through its earnings in foreign exchange and indirectly through induced investment and employment arising from tourism development. The tourism sector, if properly developed, can act as an anchor industry. Its development will lead to the establishment of small and medium enterprises around the tourism areas. It will be a market for traditional crafts and agricultural produce. A developed tourism sector will also encourage the utilization of both skilled and unskilled labour.

In Zambia most tourist areas are in rural areas, therefore the development of tourism will lead to rural development (MFNP, 2002). A better understanding of factors that attract tourists to Zambia will assist in the development of the tourism sector. In doing so, there will be positive repercussions for the whole country especially with the improvement of infrastructure.

In a bid to reduce poverty in Zambia, it has been recognised that an increase in Zambia's share of world trade will help in reaching this goal. One way of doing this is to increase the level of exports. Before the early 1990s, policymakers concentrated mainly on exports of copper but the unstable and falling copper prices demanded a shift of strategies. This led to a campaign to develop Zambia's non traditional exports.

Consequently, the tourism sector has been recognised as an important non-traditional export that can greatly benefit the country. The underdevelopment of most of Zambia's infrastructure especially those related to the tourism sector such as roads leading to tourist areas, telecommunication and health facilities has reduced Zambia's ability to compete internationally in attracting tourists.

The standard of accommodation and the quality of services offered to tourists in the tourism industry need to be improved. Most of Zambia's hotels are three star hotels (MTENR, 2008). The few five star hotels are usually very expensive and are found mainly in urban areas such as Livingstone and Lusaka. They are not found in rural areas that offer tourists attractions. Furthermore, the labour force in the tourism sector has limited exposure and understanding of internationally required service standards (Messerli and Pope: 2009). This entails that tourists' expectations and needs are not met which affects their perception of Zambia as an ideal tourist destination. An analysis of the demand of tourist arrivals will help policy makers identify the areas in the tourism sector's hospitality industry that need to be dealt with in order to increase the number of international tourist arrivals.

The lack of empirical studies on tourism demand might be one of the factors affecting the performance of the tourism industry. Policy makers lack studies that have concrete evidence over the policies implemented. The aim of this study is to contribute to filling the void that exists in empirical studies concerning tourism demand in Zambia. It aims to highlight the factors that might influence the number of tourist arrivals in Zambia. These factors play a role in making Zambia an attractive tourist destination compared to other destinations. The study will also offer policy recommendations that will help develop the tourism sector in Zambia.

There is a need for studies that will produce empirical results to improve policies in the tourism sector and give these policies a firm empirical verification. The lack of empirical studies carried out to examine the influence of factors that affect tourism to Zambia, will make this study of great importance to policymakers. It will also contribute to further research in tourism demand using different approaches.

1.6 Structure of study

This study is organised as follows; chapter two provides the background on tourism in Zambia. It highlights the factors that make Zambia an ideal tourist destination. The chapter outlines the performance of the tourism industry between the periods 1999 to 2008. Chapter three reviews the theoretical and empirical literature that have not only contributed to broadening the knowledge base in the tourism sector but also in the choice of variables used in this study. Chapter four explains the theoretical framework and empirical procedure used in this study. It also describes the variables included in the empirical model. The results obtained in this study are presented in chapter five. Finally, chapter six concludes while giving policy recommendations that will help improve the tourism sector in Zambia. It also provides the limitations faced during this study and points out areas for future research.

CHAPTER TWO

OVERVIEW OF TOURISM IN ZAMBIA

2.1 INTRODUCTION

Zambia is a landlocked country in southern Africa with rich natural and water resources, abundant wildlife, a stable political environment, good temperate climate and friendly people. The many tourist attractions it offers comprises of bungee jumping, water activities, game viewing and a unique opportunity to experience 25 different traditional ceremonies that occur annually during different months. It has 19 national parks and 25 game management areas that cover 22.4 million hectares of land. This makes it the largest protected wildlife area in the sub-region consisting of 40% of the country's land surface area (MFNP, 2006). Wildlife in the country consists of over 733 birds, 150 reptiles and 224 mammals which include the big five animals (Lion, Elephant, Buffalo, Rhino and Leopard). Complementing these resources are over 3,000 sites of cultural and natural heritage including the seventh wonder of the world, the Mosi-oa-tunya or the Victoria falls.

This chapter briefly looks at the regulatory institutions in the tourism sector and the performance of Zambia's tourism sector. It points out the various institutions that play a role in the tourism industry as well as the flow of tourists into the country. It highlights the challenges and factors that might have contributed to the performance of the tourism sector. Further, it takes into account the purpose of visit, mode of transportation, entry requirements, port of entry and the origin of tourists. It also looks at the impact of the tourism sector on macroeconomic variables.

2.2 REGULATORY INSTITUTIONS IN TOURISM SECTOR[1]

At the apex of the regulatory institutions is the Ministry of Tourism, Environment and Natural Resources (MTENR). It is the major institution responsible for the management of the tourism industry and it is assisted by seven statutory bodies. These are; Zambia Wildlife Authority, National Heritage Conservative Commission, National Museum Board, Zambia Tourist Board, Forestry Department and Hotel and Tourism Training Institute. The Tourism Council of Zambia is a private organisation that assists the MTENR. These institutions all

[1] The source of information on these institutions is the MTENR website.

fall under the ministry's legislation and authority. With so many institutions in the tourism sector there is need for efficient coordination among these institutions and clear guidelines on the functions of each institution in order for the tourism sector to improve and flourish. The MTENR is responsible for the management and development of tourism, environment and natural resources. In order to achieve sustainable development, there is need to have coordination in these three sectors since they are interlinked. The ministry aims to develop a competitive tourism industry while ensuring a quality environment and proper utilization of Zambia's heritage and natural resources.

The Zambia Wildlife Authority is the regulatory institution in charge of wildlife. It aims to improve the quality of life among communities in wildlife estates. It focuses on the improvement of the diminishing wildlife resources and maintains biodiversity in national parks and game management areas so as to get sustainable benefits from the wildlife resources. It aims to improve the wildlife resource base investment in cooperation with the private sector and local communities.

Another regulatory institution is the National Heritage Conservation Commission. This institution is responsible for the management and maintenance of Zambia's national and natural heritage through the protection of archaeological objects, natural and historical monuments that have existed since the Bushmen era. It conserves Zambia's natural and cultural heritage ensuring that the future generations will get to experience and enjoy the country's natural and cultural heritage.

The National Museum Board is responsible for the preservation of the nation's history and movable heritage. It collects documents and presents Zambia's movable heritage. This enables people to have a firsthand view of Zambia's tangible heritage. There are four public museums and two private museums that fall in its management. The public museums are; Copperbelt museum in Ndola, Livingstone museum, Lusaka museum and Moto Moto museum in Mbala while the two private museums are; Choma museum and Crafts centre in Choma and Nayuma museum in Mongu.

The Forestry Department has the responsibility of protecting and maintaining biodiversity. It supervises, restores and manages forest resources and ecosystems, forest based industries, non forest products development and forestry research. It also deals in forestry training and capacity building, exportation of forest products, handing forest licences and generation of revenue from the forestry industry.

The Zambia Tourism Board mainly oversees the advertising of Zambia's tourism industry. It ensures that potential tourists are made aware of Zambia as a tourist destination, the entry requirements and procedure, health issues, accommodation offered and tourism activities that Zambia provides.

The Hotel and Tourism Training Institute is in charge of the training of students in the hospitality and tourism industry. These students need to acquire quality and relevant education that will meet tourists' expectations and needs. The number of students undertaking hotel and tourism training has shown a steady increase with more females than males enrolling. In 2001 there were 239 males and 516 females enrolled for hotel and tourism training. This number has increased to 875 males and 1,960 females in 2006 and 1,120 males and 2,542 females in 2008 (MFNP, 2008). This shows that the number of people enrolled to train in hotel and tourism has been increasing steadily each year. However, more needs to be done in order to encourage more people to go for training in hotel and tourism. The number of people trained is not adequate compared to the number employed in the tourism sector. The people trained as a percentage of people employed in the tourism sector were 5.6%, 13.4% and 15% in 2001, 2006 and 2008 respectively. This means that few people have the skills to professionally handle the tourists' requirements.

The Tourism Council of Zambia represents different organisations that contribute to the tourism sector. It aims to facilitate growth of the sector through development of a favourable fiscal, legislative and physical environment. It works with government in the formulation of tourism related policies by identifying strategic issues affecting tourism.

2.3 BACKGROUND OF THE TOURISM SECTOR

The government has a long term vision of ensuring that Zambia becomes a major tourist destination of choice and the tourism sector contributes to economic growth and poverty reduction. To ensure that this is fulfilled there is need to implement policies in the tourism sector that will improve its performance.

2.3.1 GDP and employment

The level of the sector's contribution to GDP has increased during the period 1999 to 2008. In 2000, the tourism sector only contributed 2.3% of the total GDP while in 2008 it contributed 5.1% of total GDP. This was mainly through restaurants and hotels.

The tourism sector has also been a source of employment especially for semi-skilled labour. The industry needs to ensure that workers are well trained in meeting tourists' expectations and needs while upholding international standards. Most of the jobs in the sector are in restaurants and hotels. The tourism sector is a labour intensive industry and over the past ten years has provided for the employment of over 16,000 people in Zambia. The number of people employed in the tourism sector has increased steadily from 10,340 in 1999 to 24,308 in 2008. In 2004 and 2006, the sector accounted for 2.4% and 2.7% of the total number of people employed in the country respectively. However, this amount increased to 4.5% in 2008. Yet, compared to some of its competitors, this was low. More needs to be done to encourage investment in the sector so that the employment figures would rise considerably.

Table 2.1: Contributions to GDP and employment in 2008

Country	Tourism sector's contribution to total GDP (%)	Tourism sector employment to total employment (%)
Namibia	14.5	18.2
Botswana	9.4	10.7
Zimbabwe	9.8	8.8
Kenya	10.8	8.7
Tanzania	9.7	7.7
South Africa	8.4	7.6
Zambia	5.1	4.5

Source: Travel and Tourism Council 2008.

Table 2.1 compares selected African countries' tourism contribution to GDP and employment in 2008.

In 2008, Namibia's tourism sector had the highest contribution to GDP and employment while Zambia had the least contribution to both GDP and employment. Surprisingly, this was lower than Zimbabwe's tourism sector's contribution to GDP even when Zimbabwe was

going through political and economic instability. After 1999, Zimbabwe experienced a drop in tourist arrivals from more than 2.1 million to approximately 1million in 2003 (Cattaneo, 2007). The number of tourist arrivals was expected to decline further after 2003 with the heightened political distress in Zimbabwe. The major beneficiaries of Zimbabwe's crisis in terms of tourism flows are Zambia and Botswana.

2.3.2 Foreign earnings and foreign exchange

The foreign earnings generated by the sector have steadily increased from US$88 million in 1999 to US$200 million in 2008 (MTENR, 2008). The major foreign earnings generator in the sector is accommodation. On average, the accommodation industry contributes 38% of the total foreign exchange earnings generated from the tourism sector.

The most used currency in Zambia is the United States dollar followed by the South African rand. In 2008, the Zambian kwacha depreciated against the US dollar and the Euro. This was attributed to the falling copper prices and risk aversion of emerging markets following the financial crisis. However, the kwacha appreciated against the South African rand and the British pound sterling. Despite the depreciation of the Zambian kwacha against the Euro and United States dollar, the only countries with an increase in tourist arrivals were from regions where the two currencies are mostly used. These countries were Denmark, Germany and surprisingly, the USA. Another surprise was an increase in the number of tourist arrivals from South Africa. This was despite the appreciation of the Zambian kwacha against the rand. The number of tourist arrivals from South Africa increased by 28% out of the total number of tourist arrivals to Zambia. It was the highest number of arrivals from 125,231 in 2007 to 226,428 in 2008.

2.3.3 Foreign direct investment

During the period 2004 and 2007, tourist arrivals increased by more than 70%. The positive growth experienced in the tourism sector between 2004 and 2007 can be attributed to an increase in investment and marketing in the sector. The increase in tourist arrivals is mainly due to increased investment in the sector and an improved investment climate in the country (Ndulo et al, 2010).

The amount of FDI has increased from US$122 million in 2000 to US$939 million in 2008 (Ndulo et al, 2010). However, FDI dropped from US$1,324 million in 2007 to US$939 million in 2008. This is because of the negative impact of the financial crisis in 2008. In Zambia, FDI are mainly in the mining sector. The increase in FDI in the mining industry is due to the success of the privatisation program undertaken by the Zambian government.

Investment pledges in the tourism sector have continued to fluctuate from US$18.8 million in 2000, US$6.6 million in 2004, US$18.7 million in 2006 to US$180.1 million in 2008 (Ndulo et al, 2010). However, the amount reached its lowest in 2002 when it was at US$0.65 million. There is need to increase investors' confidence in the sector. Table 2.2 shows the amount of investment pledges in the Zambian economy in 2004 and 2008 by sector and the expected job generation.

Table 2.2: Investment pledges and expected jobs in 2004 and 2008

Sector	Investment pledges in 2004 (US$ m)	Percentage of total pledges	Expected Jobs	Investment pledges in 2008 (US$ m)	Percentage of total pledges	Expected jobs
Manufacturing	45.8	37.1	2,474	1,019.2	10.7	5,402
Agriculture	34.6	28.0	5,037	54.1	0.6	1,568
Tourism	6.6	5.3	530	185.3	2.0	3,195
Services	15.4	12.5	1,432	96.5	1.0	1,443
Mining	14.5	11.7	716	6,816.0	71.5	7,472
Transport	3.7	3.0	160	42.6	0.5	306
Construction	2.8	2.3	98	12.9	0.1	183

Source: Bank of Zambia 2004 and 2008.

In 2004, the tourism sector was one of the sectors to receive the lowest amount of investment pledges. In 2008, investment in the tourism sector was expected to generate the third highest number of jobs in the economy. Yet, it was the third highest receiver of investment pledges. This shows that as the amount of investment increases in the sector, more jobs can be created.

However, in 2008 the tourism sector had an increase in investment pledges of US$ 180.1 million from US$ 6.6 million in 2004. This is the largest amount the sector has received in the period 1999 to 2008. This shows an increase in investors' confidence in the sector.

2.3.4 Entry requirements

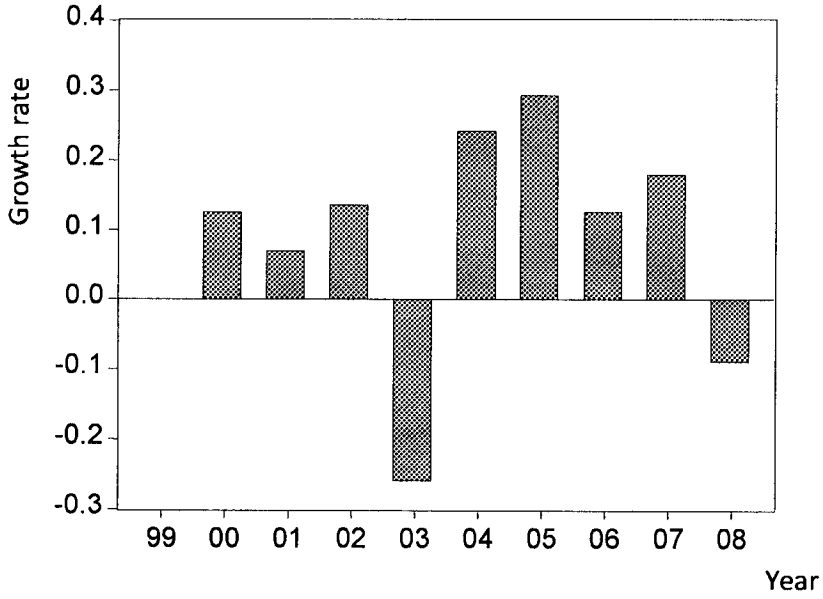
Tourists coming to Zambia are allowed to remain in the country for a maximum of 90 days and need to ensure that their visa has the valid number of days. However, people from the United Kingdom, Ireland, Fiji, Norway, Romania, Sweden, Yugoslavia and the Commonwealth nations do not require a visa to come into Zambia (ZTB, 2008). The amount of visa fees depends on the purpose of the visit. Zambian visas can be obtained at the port of entry or the Zambian embassy in the country of origin. Obtaining a visa at the port of entry is beneficial for tourists who only want to see the Victoria Falls at the Zambian side as they can obtain a day visa at the Victoria border post. The average length of stay in Zambia for tourists is usually 5 to 6 days (MTENR, 2008). This affects Zambia's generation of tourist revenue because this is a short length of stay compared to its competitors. Tourists are advised to have travel or health insurance before coming to Zambia. They are further advised to carry the necessary medication to combat diseases such as malaria and yellow fever. The Zambia Tourism Board has developed a website that gives this information to tourists.

Upon entry at the border, tourists are expected to fill in a visitor's form stating their sex, age, purpose of visit, duration of stay, type of accommodation and country of residence. This could lead to misleading statistics since a tourist might be staying in South Africa or any other country but might not be a citizen of that country. Most tourists coming from outside Africa usually go through South Africa or Zimbabwe before coming into Zambia. This is one area where care must be taken in collecting statistics.

2.3.5 Growth rate of tourist arrivals

Zambia has experienced an impressive increase in tourist arrivals during the period 1999 to 2008. In 1999 the number of arrivals was at 404,247 but this steadily increased to 811,775 in 2008. The country received tourist arrivals of 491,991 in 2001, 515,000 in 2004 and 756,860 in 2006. Noticeably, the industry experienced a large reduction in the growth rate in 2003 and 2008 as shown in figure 2.1.The figure shows the growth rate of tourist arrivals from 1999 to 2008.

Figure 2.1: Growth rate of tourist arrivals from1999-2008



Source: Author's own compilation from MTENR

In 2003, Zambia experienced about 3% reduction in tourist arrivals. The number of tourist arrivals reduced from 562,074 in 2002 to 412,675 in 2003. The reduction can be attributed to the outbreak of the Severe Acute Respiratory Syndrome (SARS) in 2003. Catastrophes such as the global SARS outbreak, the September 11 terrorist attack and the Tsunami are believed to have an impact on the tourism industry (Ibrahim and Girgis, 2008). As a result of the SARS outbreak, people had to limit their travel for fear of being infected by this deadly disease. Coupled with this, Zambia had an outbreak of cholera during the months of November to December. This might have influenced tourists' decisions to visit the country as they were concerned for their health.

In 2008 the number of tourist arrivals was negatively affected by some local and international factors that occurred. During the year, Zambia lost its president and had to go for presidential by-elections. This created uncertainty for tourists over their safety in a seemly unstable environment. Internationally, the global financial crisis had people who were affected being careful on what they spent their money on and going for a vacation in another country become a luxury. Further, most people were not sure of what the long term effects of the financial crisis were. This resulted in people being careful on what they spent their

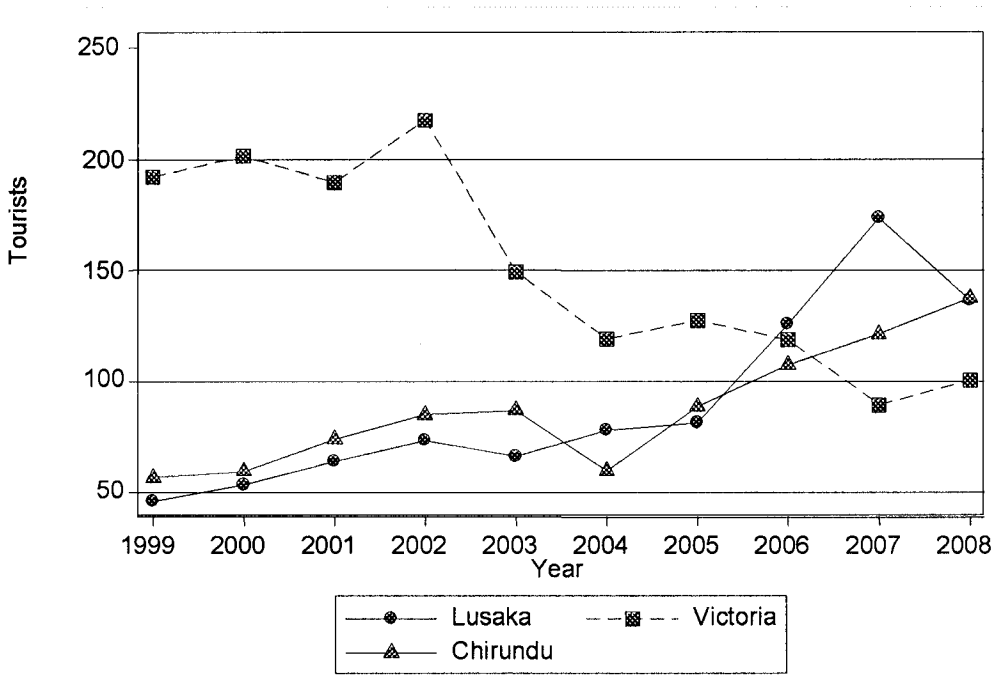
financial resources on. It therefore had an impact on the number of tourist coming in the country. The tourism sector is one of the sectors that has been affected by the global financial crisis (MFNP, 2010). However, in 2010, the sector is expected to recover.

2.3.6 Port of entry

Zambia has 12 ports of entry which tourists can use to enter the country. The major ports of entry for tourists are Lusaka International Airport, Victoria Falls and Chirundu. The number of tourist arrivals coming through the Victoria Falls has decreased gradually since 2002 while the number of tourists coming through Lusaka International Airport and the Chirundu border has been increasing since 2005, as shown in Figure 2.2. The Chirundu border is one of the busiest border posts in Southern Africa. In 2005, at the COMESA Council of Ministers in Kigali, the Chirundu border was chosen as an ideal port to implement the one-stop border post concept. This was done to ease congestion and reduce transit times for traders and transporters. Although the one-stop border was only officially opened in 2009, it was still recognised as a one-stop border post from 2005. Tourists preferred the Chirundu border because it entailed less congestion and less transit time.

Meanwhile, an increase in arrivals through the Lusaka International Airport could be attributed to the introduction of more flights into Zambia. The number of international aircraft movements at the Lusaka International Airport had increased from 7,783 in 2005 to 11,284 in 2008 (NACL, 2009). The number of domestic aircraft movements increased from 13,530 in 2005 to 17,323 in 2008.

Figure 2.2: Tourists by port of entry



Source: Author's own compilation from the MTENR

2.3.7 Mode of transport

The major modes of transport for a landlocked country like Zambia are road, air and rail. The highest number of tourist arrivals come into the country by road. It is a much more affordable mode of travel than coming into the country by air.

In 1999 there were 297,000 tourists arriving by road. This gradually increased to 568,794 in 2008. The highest figure was recorded in 2007 with 615,343 tourist arrivals by road (MTENR, 2008). On average, the number of tourist coming into Zambia by road make up 70% of the total number of arrivals.

The second major mode of transport is by air. There are 101 airports in Zambia of which only 9 are paved (Financial Standards Foundation, 2009). Further, there are four major airports;

Lusaka, Ndola, Livingstone and Mfuwe. The largest of the four being Lusaka International Airport and the smallest being Mfuwe International Airport. Most of the airports in the country are in need of rehabilitation and infrastructure development in order to receive international airlines. International tourists going to towns such as Solwezi, Mansa and Kasama relay on charter planes. In 2008, there were ten foreign airlines, two domestic airlines and four major charter planes (NACL, 2009). All of the foreign airlines operate at Lusaka International Airport, only two operate at Livingstone and Ndola International Airports and none operate at Mfuwe International Airport. In 2008 Zambia had two domestic airlines that were scheduled international. These were Zambezi Airlines and Zambian Airways.[2]

Table 2.3: Tourist arrivals by airport in 2008

Airport	International Aircraft movements	International passengers	Tourist arrivals by air	Tourists as a Percentage of International passengers
Lusaka	11,284	644,795	136,388	21.15
Ndola	4,227	101,165	31,931	31.56
Livingstone	6,204	174,488	66,124	37.90
Mfuwe	779	1,914	1,067	55.75

Source: MTENR (2008) and NACL (2009)

In table 2.3, it can be seen that Mfuwe has the highest percentage of tourists as passengers. More than half the passengers that go to Mfuwe are tourists. This shows that Mfuwe should be one of the priority areas in terms of infrastructure development and improvement of standards in the tourism sector. There should also be efforts made to manage and maintain the tourist attractions it offers. There is need to market Mfuwe as a tourist destination. Mfuwe is home to the South Luangwa National park. The park is known for its high animal density and diversity. It consists of 60 different animals and 400 out of Zambia's 732 species of birds (ZTB, 2008). Efforts need to be undertaken to protect these animals and birds from extinction from the park. Although Livingstone has the second highest percentage of tourists as passengers, it has the largest number of tourists since some tourist use other modes of travel to get into the town.

[2] Zambian airways suspended operations in 2009 leaving Zambia without a national carrier.

Few tourists arrival into the country by railway because most of the railway lines are in need of rehabilitation and others are no longer being used. Zambia has 2,157 kilometres of railway with two railway companies namely Zambia Railway Limited[3] and Tanzania-Zambia Railway Authorities (TAZARA) (Financial Standards Foundation, 2009). TAZARA operates trains on the 1,992 kilometres line that links Zambia to the ocean port of Dar-es-Salaam in Tanzania. The trip from Kapiri Mposhi in Zambia to Dar-es-Salaam takes 41.5 hours.

In 1999 there were about 8,000 tourists coming into Zambia by rail with the highest figures being recorded in 2003 and 2005 of 21,628 and 18,013 respectively. However, in 2006, 2007 and 2008, the number of tourists coming into the country by rail reduced to 1,260, 1,194 and 7,471 respectively. In 2008, the number of passengers on coaches experienced a 44% reduction. This was due to the rehabilitation and upgrading of Zambia's railway system (MFNP, 2008). The improvement of railway infrastructure will contribute in attracting more tourists who travel by rail.

2.3.8 Purpose of visit

The United Nations defines a tourist as any person travelling for pleasure, domestic reasons, health, meetings, business, study (including students and young people staying abroad) and stopping for a period of 24 hours or more in a country or area other than that in which they usually reside (UN, 2008). In accordance to this definition, the MTENR classifies tourists into six purposes of visit; holiday, business, conference, study, visiting relatives and friends, and other. Most tourists in Zambia come for business and holiday. This shows that Zambia has an ideal investment climate. Policy makers should maximise on this result in implementing policies that will appeal to the business minded tourist as well so that they should visit the country again.

Statistics from the MTENR show that in 2008, approximately 34% of tourists came for business purpose, 23% came for holiday purpose, 17% came for other purposes than the five defined above, 16% came to visit relatives and friends, 7% came for conferences and 2% came for studies. The business tourist continues to be Zambia's main visitor since 1999 with 35% followed by the holiday tourist with 33%. Although holiday is the second major purpose of visit by tourists coming to Zambia, there is need to make Zambia an attractive

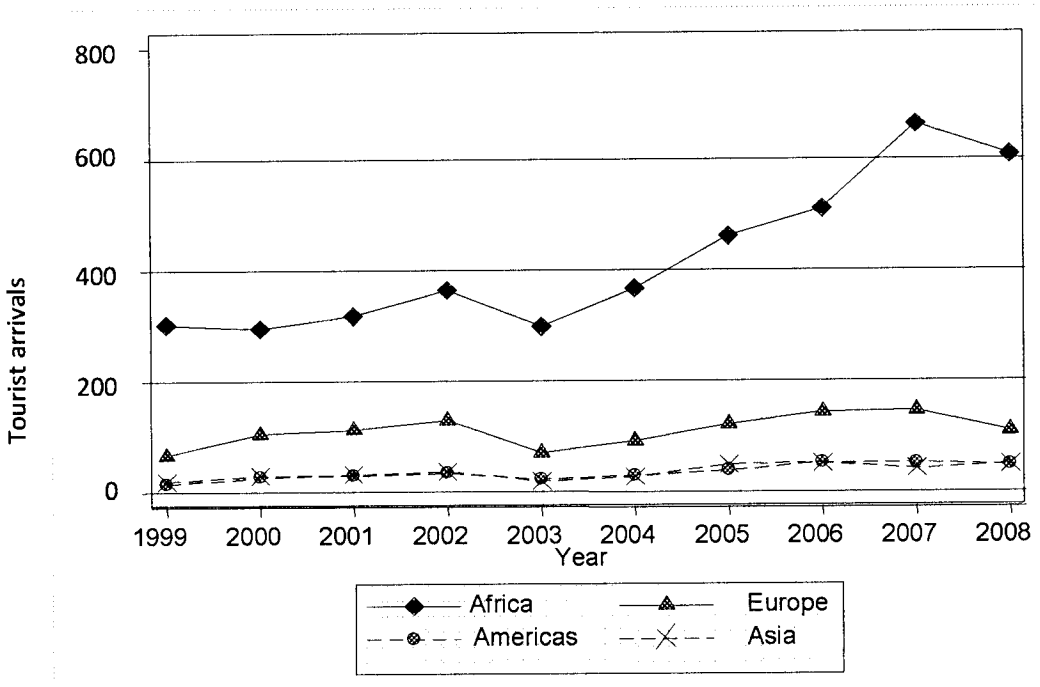
[3] This comprises of Spoornet (S.A), New Limpopo Bridge Project Limited (Mauritius) and Cana-rail (Canada). In 2003, they were given a 20 year concession to run the domestic railroad.

holiday destination meeting tourists' requirements in the future. This can be done by optimising on the good weather, game viewing, water activities and other tourism products that it offers.

2.3.9 *Tourist by area of origin*

Africa is consistently the top source market over the past 10 years. This is followed by Europe, while Asia and Americas are the lowest source markets. Tourists coming to Zambia are mostly from within Africa, mainly from Zimbabwe and South Africa. In 2008, the highest number of tourists was from Africa with 75% and the least was from the Americas with 6%. While Europe accounted for 13% and Asia 6% of the total number of tourist arrivals. Figure 2.3 shows the flow of tourists from 1999 to 2008.

Figure 2.3: Tourist arrivals by continent



Source: Author's own compilation from the MTENR.

There is need to capture more of the European, Asian and American markets; this is because most of these markets are in a higher income bracket than Zambia. They would find Zambia an affordable tourist destination. However, various factors may have contributed to the low flow of tourists from these three regions. One possible factor is that tourists coming from

within Africa have more information on what is happening in the continent. Hence they are more certain of their safety and the political environment in other African countries. Further, tourists from Europe, Asia and the Americas, usually have a negative perception about Africa which is heightened by the civil and political unrest in most African countries. Zambia is a country that is surrounded by some countries that have experienced civil war or have unstable political environment. Therefore, potential tourists who may not be fully aware of the real situation or uncertain about their safety in Zambia might decide to stay away and choose another destination where they are certain of their safety. There is also a need to launch a very vigorous advertising campaign in Europe, Asia and the Americas as tourists may not be fully aware of the tourism package that Zambia has to offer. It may also be an opportunity to clarify and convince tourists over the political and economic environment in the country.

Table 2.4 shows the percentage of tourist arrivals from Zambia's 16 major tourist source markets in selected years from 1999 to 2008. The 16 source markets have been grouped according to continents with Africa comprising of South Africa, Zimbabwe, Kenya and Tanzania. Europe comprises of Germany, France, Italy, Sweden, Denmark and U.K while Americas comprises of Canada and the U.S.A. Australia, New Zealand, Japan and India are the major source markets in Asia.

Table 2.4: Percentage of tourists by country

Continent	1999	2002	2004	2006	2008
Africa	53.0	47.4	53.4	50.0	54.3
Europe	13.0	15.1	13.6	13.0	9.9
Americas	3.3	5.5	5.2	6.7	5.3
Asia	4.0	5.3	3.4	4.9	4.4

Source: Author's own calculations from the MTENR.

The statistics in table 2.4 shows that Zambia has received a steady increase of tourists from within Africa since 1999. The highest percentage of tourists received from Africa has been in 2008. This increase is mostly attributed to South Africa with a share of 28%. South Africa had a share of 18% of total arrivals in 1999. This gradually increased to 16 % in 2002 but reduced to 13% in 2006. The number of tourists from Zimbabwe has been the largest decrease in arrivals from 31% of the total arrivals in 2007 to 12% in 2008. This can be attributed to the political and economic instability that intensified in Zimbabwe in 2008. Zimbabwe has been a major source market since 1999 with 30% of tourists coming from the

country. Most countries have shown an increase in tourist arrivals in 2008, but this increase has been offset by a reduction in the some of the source markets; Zimbabwe, U.SA, Italy, U.K and Japan. One reason for this would be the political instability in Zimbabwe and the negative effect of the financial crisis experienced by the other countries. The Asian countries continue to be the least source market. More needs to be done to attract tourists from the Asian continent.

2.3.10 Accommodation capacity

Zambia has a few number of rooms relative to the total number of tourist arrivals every year. However, before the number of rooms is increased, there is need to increase the occupancy rate. Table 2.5 shows the bed spaces, rooms and occupancy rate from 2003 to 2008.

Table 2.5: Accommodation capacity

Year	Beds available	Bed occupancy rate (%)	Rooms available	Room occupancy rate (%)
1999	7,892	31.2	4,721	45.5
2000	7,920	36.5	4,744	46.4
2002	8,601	43.3	5,060	50.4
2004	9,115	48.0	5,360	55.0
2006	9,425	51.0	5,682	59.1
2008	9,894	55.7	5,979	63.1

Source: Ministry of Tourism, Environment and Natural Resources (2008)

The number of rooms and beds have continued to increase steadily from 1999 to 2008. However, the low occupancy rates points to the quality and the standard of the accommodation being offered. It also points to the prices demanded by owners of these accommodation facilities. There is need to look into the pricing, quality and standard of the accommodation being offered. Only after this is done, will there be an increase in the occupancy rates. This would stimulate an increase in accommodation capacity.

In Zambia, hotel standards are monitored by the Hotels Board of Zambia. However, these hotels undergo few inspections due to the lack of resources and transportation by the authorities responsible for this (Cattaneo, 2007). As a result, they do not meet the required standards.

In using a hotel price index to compare Zambia's hotel prices with some of its competitors, Noteman (2003) finds that in 2002 Zambia had the second highest hotel prices with an index of 37.11. Tanzania had the highest with 43.32 while South Africa had an index of 12.42, Zimbabwe; 14.03 and Kenya with 18.55. The hotel index compares the average rate of 4 star hotels on a scale with 0 representing least expensive and 100 more expensive. In 2005, a survey carried out by the Natural Resources Consultative Forum shows that tourists coming for holiday in Zambia needed to spend US$ 1,100. While those going to South Africa, Kenya and Tanzania had to spend US$879, $405 and US$1,105 respectively (Hamilton et al, 2007). In 2009 accommodation prices in Zambia were still considered to be high (Messerli and Pope, 2009).

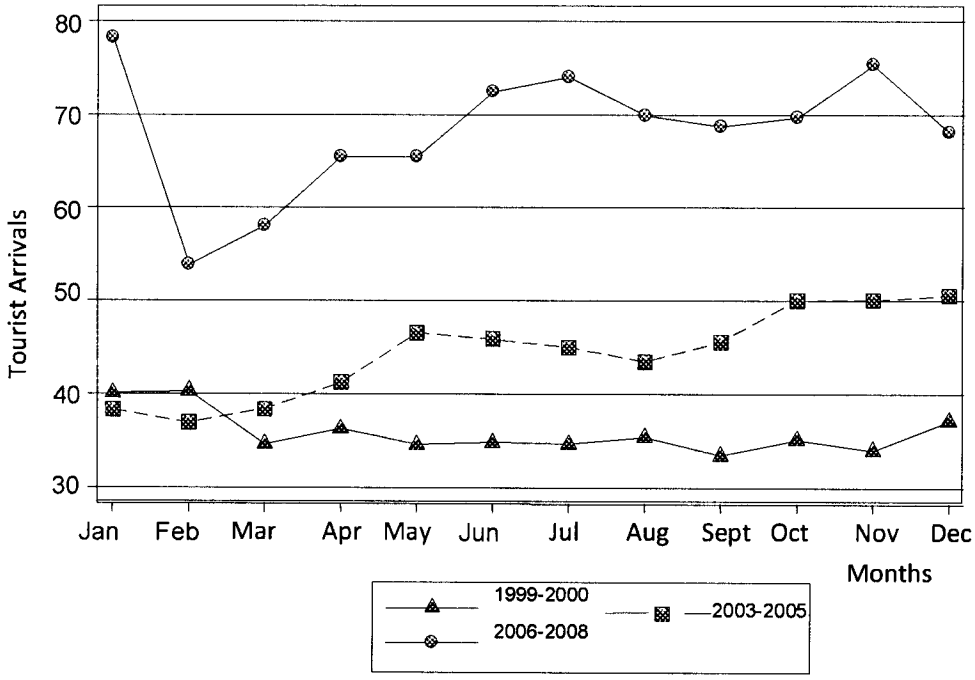
2.3.11 Climate and tourism

Most of Zambia's land lays on a plateau which results in a good and pleasant climate throughout the year except in the valley where it is very hot. International tourists flow into the country throughout the three seasons which are, dry, hot and wet season. Some seasons have more tourist arrivals than others.

The coolest time of the year is the dry season which falls from May to August. The hot season is from September to November. This is a good time to visit watering holes as wildlife is usually around these areas trying to cool off. It makes the season an ideal time to have safaris. The wet season is from December to April. It is usually muddy and most lodges and national parks are closed[4]. During this season the number of tourist arrivals reduces. On average over the period 1999 to 2008, the number of tourist arrivals has been highest from May to October.

[4] The Mosi-oa- tunya national park is the only park opened all year round.

Figure 2.4: Average monthly tourist arrivals.



Source: Author's own compilation from the MTENR

Figure 2.4 shows the average monthly tourist arrivals from 1999 to 2000, 2003 to 2005 and 2006 to 2008. Overall the distribution of tourists is highest from April to December. These have continued to be the peak months from 1999 to 2008. One reason for this is the good climate during these months. Another reason is the fact that the Mosi-oa-tunya waterfalls and water activities offer more thrill during these months as the water levels are high. Further, most roads are more accessible in this period and most of the 25 different traditional ceremonies take place during the months of May to October. During the months of January to March the amount of rainfall intensifies. Despite this, in 2007, January had the highest number of tourist arrivals of 113,279. This can be attributed to a good investment climate during this month since most of these were business tourists. In 2008, there was a reduction in the number of tourist arrivals in the peak months of September, October, November and December. This would have been due to the impact of the death of the president in august and the subsequent elections in November. The unstable political environment in the country created uncertainty over the safety of tourists. This is also the period when most economies of the world were experiencing the negative impact of the global financial crisis.

2.4 *CONCLUSION*

The tourism sector is regulated by seven main institutions. There is need to ensure that the responsibilities of these institutions are clearly defined. The large number of institutions implies that there are a lot of regulatory challenges in the tourism sector. This can affect the development of the tourism sector if the institutions are not effectively coordinated.

The tourism sector has under gone reasonable improvement in performance from 1999 to 2008. The country has benefited in terms of employment and earnings generated from the sector. However, there is need to continue developing the sector especially in terms of infrastructure. This will enable Zambia to fulfil its tourism potential. The above discussion shows that Zambia is slowly increasing the number of tourist arrivals each year. However, natural factors will continue to have an impact on tourist arrivals. This has been evident from the impact of the SARS outbreak of 2003 and the global financial crisis of 2008. Despite these natural factors, the tourism sector has continued its steady progress. Other factors, such as the rainy seasons can be dealt with through proper planning and significant development of the sector's infrastructure.

CHAPTER THREE

LITERATURE REVIEW

3.1 INTRODUCTION

This chapter looks at the various studies that have been undertaken on the demand for tourism. It reveals the estimation procedures and the results that have been obtained by these studies. In this chapter, we also highlight some of the recommendations put forward by the reviewed studies concerning the results obtained.

3.2 MEASURES OF TOURISM DEMAND

There is currently no empirical study on tourism demand in Zambia. However, there have been studies that look at Zambia as part of the general studies on tourism demand in Africa. Research by Naude and Saayman (2005) has revealed that empirical research on tourism demand is lacking for most African countries. Lim (1997), in reviewing more than 70 studies on international tourism demand, discovered no study focused in detail or exclusively on African countries. There are, however, several studies on tourism demand for countries outside Africa such as Proenca and Soukiazis (2005) and Garin- Muñoz (2004). Most of these studies have been carried out in recognition of the contribution of the tourism industry to economic growth. They aim to assist policymakers in formulating policies that address the important issues in attracting tourists to a destination. These studies use various measures to capture tourism in a destination.

Studies on the demand for tourism have recognised three main measures of tourism demand. These are expenditure of tourists, stay over tourists and tourists arrivals. The best measure of the three is expenditure of tourists. It has been pointed out as the most appropriate measure of tourism demand (Tsounta, 2008; Garin- Muñoz, 2004; Proenca and Soukiazis, 2005; Salman, 2003) but it is rarely used due to data deficiency on tourist expenditure in most countries. Stay-over tourists are overnight tourists and it is assumed that these tourists are staying at hotels or similar establishments. Garin- Muñoz (2004), Garin- Muñoz and Amaral (2000), Tsounta (2008) use the number of overnight stays in modelling tourism demand. This measure takes into account the length of stay. However, the major disadvantage of this measure is that it only includes foreigners staying in hotel accommodation and excludes those

staying with family, friends, tourist apartments, camping or other forms of accommodation. Meanwhile, data on the number of tourist arrivals is easily available in most countries and due to this advantage has been used in most studies on tourism demand (Naude and Saayman; 2005, Garin- Muñoz; 2006, Salman; 2003)

3.3 EMPIRICAL LITERATURE

Naude and Saayman (2005) using cross-sectional data and panel data for the period 1996 to 2000 determined the flow of tourists to 43 African countries. To capture the difference in the spending of tourists, the country of origin is taken into account. This is because tourists from different countries have different spending habits. The flow of tourism is measured using four different dependent variables; the total number of tourists arrivals into the 43 African countries, the number of tourist arrivals from the Americas, the number of arrivals from Europe and tourist arrivals from Africa. The study carries out three regression models; a cross-section regression, a static panel data regression and a dynamic panel data regression for each of the four dependent variables. The major independent variables used are GDP per capita, CPI of a destination country adjusted by the dollar exchange rate and the distance of the country to the origin of its tourists is used as a proxy for travel cost.

The results of the study by Naude and Saayman (2005) are of interest to African economies. They suggest that factors such as income in the origin country, the relative prices and cost of travel that determine tourism in the developed countries might not be significant factors in determining tourism to Africa. Naude and Saayman (2005) point out that most studies on tourism demand are focused mainly in explaining international flows of tourists in developed countries with little reference to developing countries. This can be explained by the lack of data on tourists. Most African countries are currently setting up comprehensive data bases of tourism statistics.

The cross-section and static panel data regression models show that political stability, internet usage, the urbanization rate and a country being landlocked are significant in determining tourism to Africa. The cross-section regression model further shows that tourists from Africa are less sensitive to political risk. This was attributed to them having better knowledge on political risk in the destination country. Malaria and death rate variables are significant in determining tourist arrivals in this regression while in the static panel data regression model; tourists are sensitive to the prevalence of malaria. In the static regression

model, the coefficient for CPI is 0.20 for Europe and 0.92 for Africa which shows that a 1% increase in prices would lead to a 0.20% and 0.92% increase in tourists from Europe and Africa respectively. This is in contrast to the principles of consumer theory.

In the dynamic panel data regression model, the lagged arrival variable is significant with a coefficient of -0.68 for total arrivals suggesting that African destinations do not generate a repeat visit by 68%. A surprising result is the sign of political stability for tourists coming from the Americas with -0.28 as its point estimate. This entails that for every percentage increase in political stability in Africa there would be a 0.3% reduction in tourism from the Americas. Since this result cannot be explained, the study suggests further exploration into the subject. Interestingly, the results for income with a point estimate of -37.2 for European tourists and 22.88 for African tourists show that Europeans view tourism to Africa as an inferior good while it's a luxury good for African tourists.

Overall, the results of the study by Naude and Saayman (2005) show that the level of income in the source country, the relative prices and the cost of travel are not significant in determining demand for tourism in Africa. The study encourages policymakers to look into developing infrastructure and tourism facilities as these are the major influential factors on the flow of tourism to Africa. It finds that African countries' lack of accommodation capacity, its insufficient air transport network and its underdeveloped public health services have a bearing on the flow of tourism to the continent. The study further finds that poverty, poor perception of most African economies, diseases and political instability have a negative impact on the flow of tourists to the continent.

Proenca and Soukiazis (2005) in estimating tourism demand in Portugal use a dynamic panel data estimation approach. They use annual observations for the period 1977 to 2001 and consider four countries which are its major tourist suppliers. These countries are Spain, Germany, France and the UK. Tourism demand is defined as the share of the expenditures of each source country to the total expenditures on tourism in Portugal. Proenca and Soukiazis (2005) find that the only variables with significant impact on tourism demand in Portugal are per capita income and accommodation capacity while price is not a determining factor. The insignificance of the price variable is attributed to the lack of a substantial difference between the cost of living in Portugal and the source countries. The other possible explanation would be the higher standard of living in the source countries.

In the study by Proenca and Soukiazis (2005), the short run income elasticity is significant without the lagged dependent variable. However, for the Generalised Method of Moments (GMM) estimation with a lagged dependent variable, the income elasticity loses its significance with a coefficient of 0.091 and the lagged dependent variable with a coefficient of 0.78 becomes the most significant variable. Thus, pointing to strong adjustment dynamics in the behaviour of tourists going to Portugal. The value of the adjustment at 0.22 shows a low adjustment process which implies that the number of tourists each year does not substantially differ from the previous years'. This gives evidence of some kind of rigidity in the tourism inflows to Portugal.

Garin- Muñoz (2006) carried out a study on inbound international tourism to the Canary Islands using a dynamic panel data model. The study looks at 15 countries over the period 1992-2002 using the GMM model proposed by Arellano and Bond. The model in the study includes a lagged dependent variable and obtains both short run and long run elasticities. The study instruments the endogenous variable using the dependent variable lagged up two periods. This is done in order to reduce finite sample biases resulting from having too many instruments relative to the cross section sample size. Both the one step and two step estimators by Arellano and Bond, and the Balestra-Nerlove model are carried out for comparison. The Arellano and Bond first and second order autocorrelation tests are performed. They both show a lack of serial correlation in the residuals. Further, Comparison between the results of the dynamic GMM model and those of the static model is made. In order to determine the perception of visitors to the islands, a survey of tourists leaving the island was undertaken. The results of this survey are used to analyse the tourism market in the islands. In interpreting these results, the lack of substantial change in tourist arrivals is attributed to the fact that either consumer preferences did not change or political strategies were successful in meeting the tourists' requirements.

The variables included in the study by Garin- Muñoz (2006) are income of the source country, the price of crude oil serving as a proxy for travel costs and cost of living using CPI adjusted by the exchange rate between the origin and destination countries as a proxy. The study also includes dummy variables to capture the effects of the September 11 terrorist attack in the years 2001 and 2002.

The dynamic models show that the lagged dependent variable has a significant effect on the demand of inbound tourism. The word of mouth effect accounts for 60% of the total tourist

arrivals. This suggests that the word of mouth effect and consumer preference are an important feature for the demand for Canary Islands tourism. Further, the most important variable for explaining tourism in the islands is per capita income of the source country. It has a point estimate of 1.17 which shows that a 1 percent increase in income would lead to a more than 1 percent increase in arrivals to the islands. For the short run price elasticity of -0.74, tourist arrivals are not responsive to price changes. This is in contrast to the long run elasticities of -1.85 that implies tourists are sensitive to price changes. Based on these results, the study advises that care must be taken by the industry in order to maintain or improve price competitiveness. The results also show that adverse conditions of the source countries such as terrorist attacks have an impact on tourism demand. The static model gives similar results but the parameters of this model are overestimated because of the exclusion of the lagged dependent variable. The static model gives long run elasticities of 2.34, -0.66 and -0.13 for income, cost of living and travel cost respectively.

Garin- Muñoz and Martin (2007) carried out a panel data analysis on tourism demand for 14 countries to the Balearic Islands of Spain for the period 1991 to 2003. The measure of tourism demand used is the number of tourist arrivals by air. The dependent variable is ideal considering that 95% of tourists arrive to the islands by air. To help in the analysis of tourism demand, findings of the survey carried out by the authorities are used to explore the social demographic characteristics of the visitors and other factors such as average expenditure, length of stay, seasonal structure, kind of accommodation and reasons for travelling. The survey shows that tourists are attracted to the climate, the beaches and the quality of the tourism product. Tourists to the islands are highly satisfied with their stay and show high repetition rates.

The differenced Generalised Methods of Moments (GMM) is performed due to the inclusion of the lagged dependent variable as an explanatory variable. The model is specified in double logarithmic form in order to interpret the parameters as elasticities. The study also carries out a second order autocorrelation test. It shows a lack of autocorrelation in the errors. Other tests such as the Wald test show joint significance of variables and the Sargan test show that the instruments used are valid.

GDP expressed in purchasing power parity is included to measure the impact of the income of tourists. Another explanatory variable used is the cost of living in the Balearic Islands relative to the cost of living in the origin country adjusted by the exchange rate. To measure

the cost of travel the real price of crude oil is used as a proxy. The study acknowledges that the cost of airplane tickets is an important variable to take into account due to the variation of cost from a particular destination but this information is not available. A dummy to capture the effect of the September 11 attack is also included. It takes the value of 1 in 2002 and 0 otherwise. This is because the attack took place after the tourism peak period. The impact of the variable could therefore only be determined in the year following the attack.

The results attribute 54% of the total international arrivals to the word of mouth effects. The coefficient of the income variable at 0.92 implies that tourism to the islands is not a luxury and the long run results of 2.02 suggest that tourism is very dependent on the economic conditions of the source countries. The cost of living variable with a point estimate of -0.76 and travel to the islands with an estimate of -0.14 are both significant which means that tourists are sensitive to prices. The dummy for the September 11 attack has the expected negative sign and was significant in determining tourism demand to the Balearic Islands.

Tsounta (2008) studied the determinants of tourism demand in the Eastern Caribbean Currency Union (ECCU) using the Dynamic Ordinary Least Squares developed by Stock and Watson (1993). The study used panel data for the period 1979 to 2005. The number of stay over tourist arrivals is used to estimate the demand for tourism in the ECCU. The study looks at six countries in this union comprising of Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, St. Lucia and St. Vincent and the Grenadines. Since these countries compete with each other, a weight reflecting the share of tourist arrivals is used when calculating the competitors' index.

Tsounta (2008) found that since the income elasticity of demand for tourism of 1.50 is above one, tourism is viewed as a luxury good in the ECCU. Further, prices in the destination countries and those of the competitors have an impact on tourist arrivals. Unexpectedly, the proxy for transportation cost, oil prices, has a minimal influence on the demand for tourism. Meanwhile, FDI and the number of airlines are significant factors in determining the flow of tourism. The study includes dummy variables for the wars in Iraq in the early 1990s and 2003, the Afghanistan war in 2001, the September 11 terrorist attack in 2001 and the hurricanes of category 3 and above experienced in these six countries. In the study, these events have had negative impacts on tourism demand to the ECCU.

Habibi et al (2009) in analysing the main determinants of international tourism flows to Malaysia considers 15 of the main source countries for the period 1995 to 2005. The GMM-

DIFF model is used to estimate the influence of GDP per capita as a proxy for income, cost of living measured by the CPI for the destination country relative to the CPI of the origin country adjusted by the exchange rate, and trade openness on the total number of tourist arrivals in Malaysia. Trade openness is included because on average 11% of the total arrivals come for business purposes, hence international arrivals could be determined by the level of business activities between the destination country and its economic partners. It is measured as the total value of import and export goods and services between Malaysia and the origin country divided by the GDP of Malaysia. Dummies to measure the Asian financial crisis of 1997 and the SARS outbreak of 2003 are also included.

The study acknowledges that factors such as advertising and marketing expenditure in the origin country, tourist education, security in the destination country and other variables that depend on consumer knowledge and motivation may affect tourism demand. However, these variables are either unavailable or difficult to measure.

In the study, tendency persistence measured by the lagged dependent variable is important for explaining foreign tourism demand in Malaysia. Out of the total number of international arrivals, 91% are attributed to the word of mouth effect on the consumer's decision of the destination country. In line with this, an improvement in the quality of service and the upgrading of the tourism product in order to attract more tourists to the destination country is recommended. The income variable, although it has the expected positive sign of 0.03, is insignificant. It shows that a visit to Malaysia is not a luxury. Tourists to Malaysia are very sensitive to prices in the country with a point estimate of -0.6. However, trade openness, although it has a positive coefficient of 0.02, is insignificant in determining tourism demand to Malaysia. The dummies for the Asian financial crisis in 1997 and the SARS outbreak of 2003 both are significant in explaining the reduction in the number of arrivals. They have the expected negative signs.

Idowu (2009) estimates the demand for tourism in Africa using panel data for the period 1995 to 2003. The study analyses 20 African countries and updates the data points used by Naude and Saayman (2005). The number of tourist arrivals is regressed on the world's real income, the CPI used as a proxy for prices, the exchange rate between Africa and the world, the crime rate measured by the incidence of recorded crime rate in Africa, political instability and the number of fixed and mobile telecommunication services. Although the study carries out a GMM estimation procedure, it also compares these results with those obtained from using

ordinary least squares, fixed/random effects and two stage least squares models. It finds that the GMM model produces better results because it corrects the problems of endogeneity and heteroscedasticity during the estimation procedure.

The results obtained in the GMM model show that prices are important factors in influencing the tourist's choice of Africa as a tourist destination. The variable has the expected negative coefficient of -0.0018 and the degree of responsiveness of tourists to price changes is inelastic. The exchange rate is only significant at 5% and is highly inelastic with a point estimate of -0.0002. This shows that an appreciation of the destination countries' currencies would discourage potential tourists from visiting Africa. The study further finds that the crime rate and political instability are significant factors in determining tourist arrivals in Africa. Therefore, an increase in political instability or/and crime rate in Africa would lead to a reduction in tourist arrivals. The other variables; the past tourist arrivals, number of telephone lines and the world income all have an impact in determining tourist arrivals to Africa. One interesting finding in this study is the importance of the autonomous variable. This suggests that destination countries should make efforts to improve their infrastructure, crime rate and political situation in order to attract more tourists.

3.4 CONCLUSION

We have reviewed current studies on the demand for tourism. In reviewing the studies, we saw that the most prominent factors in determining the flow of tourists to a destination in the developed countries are; accommodation capacity, income and relative prices. Accommodation capacity points to infrastructure development in the receiving country. The most important question is whether these factors have the same impact on tourism demand in a less developed country like Zambia. The studies done in Africa by Naude and Saayman (2005) and Idowu (2009) point out that tourism in developing countries is influenced by different factors compared to developed countries. It also suggests that the impact of these factors depends on the source region and the tourist's perception of Africa. Further, all the studies show that the word of mouth effect plays an important role in determining tourist arrivals. Therefore, destination countries should ensure that tourists have a good experience which will lead to them having good reports over the country. Subsequently, this will encourage repeated visits and visits from other potential tourists.

CHAPTER FOUR

METHODOLOGY AND ANALTICAL FRAMEWORK

4.1 INTRODUCTION

This chapter begins by describing the theory on which the empirical model is based. It then goes on to explain the empirical model and the estimation procedure. Finally, it gives the data sources and a full description of the variables to be used in the empirical model.

4.2 THEORETICAL FRAMEWORK

This study is based on the principles of consumer theory, which states that the consumer's optimal consumption levels depend on the consumer's income and the price of goods including substitutes and complements. This theory helps us understand why tourists choose a particular destination.

Individuals are assumed to make rational choices. They will aim to achieve the maximum utility in buying a bundle of commodities but this can only be done within their disposable income. A utility function will represent a consumer's preference which will determine the consumption bundle. The utility function measures the level of satisfaction experienced by an individual from consuming a particular bundle of goods. The consumer maximisation problem can then be depicted as;

Maximise $U= U(X, Y)$

subject to the budget constraint: $M= P_x X + P_y Y$

where M is the amount of income; X is the tourism product; P_x is the price of the tourism product; Y are other goods; P_y are the prices of the other goods.

Therefore, a consumer will maximise utility given their budget constraints when choosing among different bundles of goods in order to achieve the optimal choice. Included in this bundle is the tourism product. The demand function will show what the consumer will demand to achieve this optimal choice.

Tourists will view the tourist attractions, accommodation and transport facilities as part of the tourism product in a destination country. Based on these, a tourist in choosing a particular destination will ensure that the maximum utility is derived from consuming this product. From the utility maximisation problem we can derive the demand function. The demand function can then be expressed as (Kulendran and Dirisekera, 2006);

$$Q = F(Y, P, Ps, C, A, D) \quad (1)$$

Where Q is tourism demand; Y is disposable income; P is the price of goods and services; Ps is the price of substitute goods and services; C is past consumption of the tourism product; A is the marketing or advertising expenditure; D are other demand shifters.

Consumer theory postulates that the demand for a given commodity depends on consumer's income, prices of goods and services, and any other variable specific to that commodity. In this case, the commodity of interest is tourism. Therefore, consumer theory postulates that tourism inflows will depend positively on the real income of individuals in the sending country and negatively on the relative price of goods and services in common currency between the receiving and the sending countries. An increase in the real income of the sending country will increase the demand for tourism while an increase in the price of goods and services in the receiving country will reduce the demand for tourism. This shows that the cost of living in the receiving country will play a role in the consumer's choice of a tourist destination.

Another important factor in influencing a consumer's choice is past consumption. When tourism is viewed as a consumption good it is characterised by taste formation. Therefore, past consumption of tourism does have an influence on present consumption. Tourists who have had a positive experience in the destination country are more likely to visit the place again. There is also a reduction of uncertainty towards the destination country as people talk about the destination country to potential tourists. This is due to a spread of knowledge about the destination country. The inclusion of the lagged dependent variable will therefore be important in the estimation procedure.

Other factors that will affect the demand of tourism include cost of travel, convenience of travel, accommodation capacity and the level of marketing.

When tourists decide on a destination, they compare the cost of staying in their own country with that of visiting a particular destination country. In doing so, they consider the cost of travel to the destination country. Another factor that might affect the demand of tourism is the convenience of travel. Tourists need to consider the easy of getting to a destination country

and the time it will take. Tourists will choose a destination country that requires less time to get to that country.

Accommodation capacity in the destination country may also influence a tourist's choice of a destination country. Tourists will ensure that they have a comfortable place to stay before they go to a destination country. The greater the number of bed spaces available, the more likely tourists will choose a destination country. However, tourists will also consider the quality of accommodation being offered in the destination country. They will choose facilities that are highly rated in terms of quality.

4.3 EMPIRICAL MODEL AND ESTIMATION PROCEDURE

There are various panel data estimation procedures. These include the Pooled Ordinary Least Squares, Fixed Effects, Random Effects and Generalised Method of Moments models. The choice of procedure depends on the characteristics of the sample and the ability to achieve reliable results.

In estimating the factors that influence demand for tourism, past consumption is recognised as a possible determinant of tourist arrivals. This will be measured using the lagged dependent variable. The inclusion of the lagged dependent variable is important because it considers the fact that when tourists visit a given destination they tell other people about it. This reduces uncertainty to potential visitors. Explanatory variables may be defined as strictly exogenous, predetermined or endogenous with respect to the disturbance term depending on whether or not it is correlated with the individual effects. The lagged dependent variable included as an explanatory variable in the model is endogenous with respect to the disturbance term. The inclusion of a lagged dependent variable also ensures that the estimated coefficients are not overestimated since they do not account for total (direct and indirect) effects. However, it creates a problem since the estimates obtained tend to be biased and inconsistent especially in small samples (Garin- Muñoz, 2006). This has been verified by the performance of the pooled ordinary least squares, fixed effects and random effects models.

The Pooled Ordinary Least Squares is a weighted sum of the between and within estimators. Two of the major underlining assumptions are that the error term should be independently distributed with zero mean and not correlated with any of the explanatory variables. The inclusion of the lagged dependent variable violates these assumptions. Therefore, the use of

Pooled Ordinary Least Squares estimation procedure results in biased and inconsistent estimates.

The Fixed Effects estimation procedure uses the time variation within each cross section of observations. The difference between the Fixed Effects and Random Effects models is that the Random Effects model assumes that the time invariant specific effect is uncorrelated with the explanatory variables. If the effects are uncorrelated with any of the explanatory variables, then the Random Effects model is consistent and efficient while the Fixed Effects model is not efficient. Similarly, if the effects are correlated with any of the explanatory variables, then the Fixed Effects model is consistent and efficient while the Random Effects model is not efficient. However, the Fixed Effects model cannot distinguish time constant factors such as geographical factors from the effects of the unobservable factors in the error term. Unobservable factors influence tourism demand and are different across countries and are constant over time. Therefore, they assume that tourists from different countries react in the same way to changes in any of the explanatory variables.

To deal with the problem of unobservable effects, the model should be differenced. This deals with the unobservable effects problem but not the endogeneity problem created by the lagged dependent variable. The bias in the Fixed and Random Effects models still exists due to the correlation between the lagged dependent variable and the disturbance term. This correlation results in inflated coefficients for the lagged dependent variable due to the transfer of predictive power that actually belongs to the Fixed Effects. However, the endogeneity problem ceases to exist if the time period is large. Unfortunately, the time period used in this study is small relative to the cross section observations. This entails that the estimates obtained from using the Fixed Effects, Random Effects and Pooled Ordinary Least Squares procedures will be asymptotically invalid when there is a small number of observations in the time dimension.

To deal with the endogeneity problem, the model will be estimated using a generalisation of the instrumental variable (IV) method known as the Generalised Method of Moment (GMM) estimation. This estimation procedure is ideal when the time period is less than the number of cross section individuals. After differencing the variable, this procedure ensures that the lagged dependent variable is instrumented by the second (or more) period lags of the dependent variable in level form.

If there are no endogenous regressors and all explanatory variables are defined as strictly exogenous, the number of instruments may be larger than the number of cross section individuals. This is not a problem since the GMM estimator will be biased towards within groups and the within groups estimator is itself consistent for models with predetermined variables as the number of time periods becomes large.

In models with endogenous regressors using too many instruments with respect to the cross section individuals may result in biased estimates. One way to deal with this is to use the second or more lags of the dependent variable as an instrument for the differenced lagged dependent variable included as an explanatory variable. The first lag cannot be used since it is correlated with the error term.

Roodman (2006) in xtabond2[5], recommends as a minimal arbitrary rule of thumb that the number of instruments should be less than or equal to the number of cross section individuals. Although Roodman (2006) in quoting the work of Rudd (2000) points out that there is still little guidance from the literature on how many instruments is too many since the bias is present even when the instruments are few. The bias is created by a large instrument collection over fitting endogenous variables. Roodman (2006) advises that in using GMM estimators that can generate many instruments, it is advisable to report the instrument count and test the robustness of the results to reducing the number of instruments. He also advises to question studies where the instrument count is not reported.

An efficient GMM estimator will exploit a different number of lagged endogenous and/or exogenous variables as instruments in each time period. These instruments are uncorrelated with the individual effects since the first differenced transformation eliminates the individual effects from the error term.

The error term is assumed to have the following properties;

$E(U_i) = 0$, it is independently distributed across individuals with zero mean.

$E(U_i, X_i) \neq 0$, there is no correlation between the error term and the explanatory variables.

To determine the number of tourist arrivals, we estimate the following dynamic panel model. This is an expansion of equation (1).

[5] Xtabond 2 is a modification of the original Arellano and Bond model installed in STATA. It does not have a constant after differencing the model.

$$In\,TD_{i,t} =$$

$$\alpha_i + \beta_1 \ln TD_{i,t-1} + B_2 ln\, Y_{i,t} + B_3 lnP_{i,t} + B_4 lnP^*_{i,t} + B_5 lnAR_t + B_6 D_{1999/2004} + \beta_7 D_{2001/2} + \mu_{i,t} + \gamma_{i,t} + V_{i,t} \quad (2)$$

With t= 1.....10(1999-2008), i= 1.....16 (country)

$TD_{i,t}$= number of tourist arrivals per capita from country i at time t; $Y_{i,t}$ = GDP per capita of source country i at time t; $P_{i,t}$= relative customers price index; $P^*_{i,t}$= Transportation costs; AR_t=number of airlines servicing the destination at time t; $D_{1999/2004}$=the dummy variable to capture the success of the visit Zambia campaign embarked on in 2005.It takes the value of 1 from 1999 to 2004 and 0 otherwise; $D_{2001/2}$ = the dummy variable to capture the 2001 September 11 attack taking the value of 1 in 2001 and 2002, and 0 otherwise; $\mu_{i,t}$ =individual country effect; $\gamma_{i,t}$= time effect; V_{it}= an error term.

This model will be estimated using the GMM model as proposed by Arellano and Bond (1991). It includes the constant after differencing the model and it does not allow for the control of instrument count.

Firstly the model is differenced to remove the time and the individual country effects. In doing so, the omitted variable bias is reduced because the influence of any other variable that is not included in the model on the dependent variable is removed. The differenced equation is as follows;

$$\Delta ln\, TD_{i,t} = \beta_1 \Delta \ln TD_{i,t-1} + \beta_2 \Delta ln\, Y_{i,t} + \beta_3 \Delta lnP_{i,t} + \beta_4 \Delta lnP^*_{i,t} + \beta_5 \Delta lnAR_t + \beta_6 \Delta D_{1999/2004} + \beta_7 \Delta D_{2001/2} + \Delta e_{i,t} \quad (3)$$

Secondly the model is estimated using instrument variables. In this differenced model, the dependent variable lagged two periods or more to improve efficiency will be used as instruments in level form. The use of this estimator ensures that though the instruments are more than the cross section individuals the estimates are not biased.

After differencing the model the new error term is correlated with the differenced lagged dependent variable. In getting these results, the second lag of the dependent variable was used as some of the instruments for the differenced lagged dependent variable. It is possible to use

these instruments because the first lag of the dependent variable ($TD_{i,t-1}$) is correlated to the error term of the differenced equation but not the second lag.

$$\Delta TD_{i,t-1} = TD_{i,t-1} - TD_{i,t-2} \quad (4)$$

Where $\Delta e_{i,t} = e_{i,t} - e_{i,t-1}$ (5)

Equation (5) will make the first lag of the dependent variable to be correlated with the error term but not $TD_{i,t-2}$. Other instruments used are explanatory variables which the estimator exploits in each time period and find to be uncorrelated with the error term.

The GMM model assumes that the disturbance terms are not serially correlated and there is no second order serial correlation in the differenced residuals. However, there is evidence of significant negative first order serial correlation. Therefore, the Arellano and Bond test for second order correlation will be carried out as well as the Sargan test for validity of the instruments used and the Wald test for joint significance of the independent variables. Arellano and Bond also show that the one-step Sargan test over rejects in the presence of heteroscedasticity. The heteroscedasticity can be attributed to the data generating process. The Sargan test is usually weakened by having more instruments than cross section observations. However, a reduction in the number of instruments can only be done using xtabond2 as proposed by David Roodman. A reduction by 5 instruments will only reduce the value of the estimate of a parameter by less than 10%. It will not remove the biasness since the biasness is present even when the instrument count is less than the cross section observations.

In this study, only the one step estimator will be considered because its standard errors are more reliable than the two step estimator's asymptotic standard errors for hypothesis testing. This is more prominent when there is the presence of heteroscedasticity in the disturbance term. Arellano and Bond further recommend the one step estimate for inference on coefficients.

The specification of the model will be in double log functional form. This allows for the ease interpretation of the coefficients of the variables which will be interpreted as elasticities. This has been acknowledged by Tsounta (2008) and Proenca and Soukiazis (2005). They point to

the work of Witt and Witt (1995) which points out that 75% of analysed models used the double log specification. To get the long run elasticities, it will be assumed that $TD_{i,t}=TD_{i,t-1}$.

From equation (3) we get:

$$\Delta ln\, TD_{i,t} - \beta_1 \Delta \ln TD_{i,t-1} = \beta_2 \Delta ln\, Y_{i,t} + \beta_3 \Delta lnP_{i,t} + \beta_4 \Delta lnP^*_{i,t} + \beta_5 \Delta lnAR_t + \Delta e_{i,t} \quad (6)$$

$$(1-\beta_1)\, \Delta \ln TD_{i,t} = \beta_2 \Delta ln\, Y_{i,t} + \beta_3 \Delta lnP_{i,t} + \beta_4 \Delta lnP^*_{i,t} + \beta_5 \Delta lnAR_t + \Delta e_{i,t} \quad (7)$$

Dividing each coefficient by $(1-\beta_1)$ we get the equation which will be used to get the long run elasticities.

$$\Delta \ln TD_{i,t} = \frac{\beta_2}{1-\beta_1} \Delta ln\, Y_{i,t} - \frac{\beta_3}{1-\beta_1} \Delta lnP_{i,t} - \frac{\beta_4}{1-\beta_1} \Delta lnP^*_{i,t} + \frac{\beta_5}{1-\beta_1} \Delta lnAR_t + \Delta e_{i,t} \quad (8)$$

To obtain the short run elasticities the following equation will be estimated;

$$\Delta ln\, TD_{i,t} = \beta_1 \Delta \ln TD_{i,t-1} + \beta_2 \Delta ln\, Y_{i,t} - \beta_3 \Delta lnP_{i,t} - \beta_4 \Delta lnP^*_{i,t} + \beta_5 \Delta lnAR_t - \beta_6 \Delta D_{1999/2004} - \beta_7 \Delta D_{2001/2} + \Delta e_{i,t} \quad (9)$$

A positive sign is expected for the coefficients of the parameters β_1, β_2 and β_5 while a negative sign is expected for the coefficients of the parameters β_3, β_4, β_6 and β_7.

4.4 DATA AND VARIABLE DESCRIPTION

4.4.1 Data

The study uses panel data for the period 1999 to 2008 for 16 important source countries. The short period used is due to the unavailability of statistics on tourists arrivals by country of origin before 1999. The number of tourist arrivals for these 16 countries is taken from statistics compiled by the Ministry of Tourism, Environment and Natural Resources. The statistics for GDP per capita for the areas of origin[6], exchange rates and consumer price indices will be taken from the International Financial Statistics yearbooks published by the International Monetary Fund. The distance of travel is calculated using a distance calculator.

[6] The Gross Domestic Product per capita is calculated using a specific country's GDP divided by its population.

It calculates the distance between Zambia's capital city (Lusaka) and the source country's capital city.

The source countries considered in this study are: United States of America, Canada, Japan, New Zealand, India, Zimbabwe, Kenya, South Africa, Tanzania, Germany, Italy, France, Sweden, Denmark, Australia and the United Kingdom.

The study uses annual data to deal with the problem of seasonality that is associated with the tourism industry. The use of panel data reduces the problem of multicollinearity and allows for the control of specification bias arising from omitted variables. This improves the accuracy of the parameter estimates. The combination of time series and cross-sectional data also increases the number of degrees of freedom (Ledesma-Rodriguez et al, 1999).

4.3.2 Variable description

The Dependent Variable: This is the number of international tourist arrivals per capita by country of origin. There will be no distinction made concerning leisure, business or any other form of tourism mainly because there is no data making this distinction for the 16 countries.

Explanatory Variables

Income: The decision to visit a destination will depend on the individual's income which acts as a constraint. In this study, the income factor used will be GDP per capita for the country of origin. The expected sign of this factor is positive and the expected income elasticity of demand for tourism is above unity which shows that tourism is a luxury good (Witt and Witt, 1992).

Price Considerations: The impact of relative prices of the receiving country will be adjusted by a bilateral exchange rate. The consumer based index between Zambia and the country of origin will be adjusted as follows, $\frac{CPI_{it}/Ex_{kd}}{CPI_{kt}}$ (9)

Where CPI_{it} is the Consumer Price Index for Zambia at time t; CPI_{kt} is the Consumer Price Index for the source country k at time t; Ex_{kd} is an index of the Zambian kwacha per unit of the source country's currency at time t.

The consumer based index will be used to measure the cost of living in Zambia. The exchange rate is included because tourists will decide whether to tour their own country or visit another country depending on the cost in terms of their currency. The real exchange rate is used to capture the substitution between domestic vacation and international travel (Mervar and Payne, 2007). Tourists usually have a choice to either stay in their country or visit another country.

As a proxy for transportation costs, the distance of travel to the country of origin of the tourist will be used. Although it does not take into account a change in prices, it is still recognised as a possible proxy for transportation costs (Naude and Saayman, 2005). The further away a destination is from the source country, the more tourists will incur in their travel expenses.

Tourism shocks: This will be used to measure the non-economic factors that have an influence on tourism demand. They will be measured using dummy variables. In this study, a dummy variable for the visit Zambia campaign which was launched in 2005 and will continue until 2015 will be included. It will measure the success of this marketing strategy. It takes the value of 1 for the period 1999 to 2004 and 0 otherwise. A dummy for the September 11 attack will also be included, taking the value of 1 for the period 2001 to 2002 and 0 otherwise. This is because the attack took place during Zambia's peak season in 2001 and the effects spilt over into the year 2002.

The lagged dependent variable: This variable has been included to measure the 'word of mouth' effect. The word of mouth' effect is based on the assumption that tourists who have visited a particular destination country will tell others about that destination country. These people will visit the destination country on account that they have been given a good report, therefore reducing the aspect of uncertainty.

The number of airlines servicing Zambia has been included because of its importance in bringing tourists into the country. It will be used to measure the accessibility of Zambia to international tourists and the international awareness of Zambia as a tourist destination through the advertising campaigns embarked on by these airlines.

4.5 CONCLUSION

The choice of estimation procedure has been influenced by the lack of data before 1999. It is however, still an ideal procedure and will give reliable estimates. The study undertaken is based on the consumer theory. The theory explains what affects demand. This study will determine if the consumer theory is applied to the demand for tourism in a developing country like Zambia. The variables in the model will give a good picture of the determinants of tourist arrivals in Zambia. Proxies have been used for variables whose statistics are not available. These proxies have been carefully chosen so that the estimates are not affected. The next chapter gives the results obtained from using the described estimation procedure.

CHAPTER FIVE

EMPIRICAL ANALYSIS

5.1 INTRODUCTION

This chapter states the results obtained from estimating the empirical model. These results are interpreted and then an analysis of the research findings is given. In analysing the findings, the policy implications of the results on the tourism sector are highlighted. The results show possible determinations of tourist arrivals in Zambia.

5.2 ESTIMATION AND INTERPRETATION OF THE RESULTS

The model has been estimated using STATA 10 statistical package. The GMM differenced model used to estimate the data is one based on the model proposed by Arellano and Bond (1991). The estimator allows for some autocorrelation in the idiosyncratic errors. The following results were obtained using the GMM estimation procedure in the statistical package. The package differences the data and gives the Sargan test, first and second order autocorrelation tests and the Wald test for joint significance of the independent variables.

The test results obtained from estimating equation (3) are shown in table 5.1.

Table 5.1: Results of tests

Number of instrument	37
Tests	
Wald chi2(7)	126.99 (0.00)
Autocorrelation test 1	-2.4914 (0.01)
Autocorrelation test 2	1.4143 (0.16)
Sargan (degrees of freedom) chi2(29)	52.6106 (0.01)

Source: Author's own calculations. †p-values are in parentheses.

The Wald test shows that there is a good relationship among the explanatory variables. The second order autocorrelation test accepts the null hypothesis of no autocorrelation in the first differenced errors. The instrument used in this model is the dependent variables lagged two periods or more. However, the Sargan test is weakened by the large number of instruments.

One-step estimation results obtained from equation (3) are shown in table 5.2

Table 5.2: Short run results

Variables	Coefficient	Standard error	Z score
Lagged tourist arrivals ($\mathbf{TD_{t-1}}$)	0.4422	0.0929	4.76*
Income of source country (**Y**)	0.0862	0.2320	0.37
Cost of living in Zambia(**P**)	-0.9779	0.3082	-3.17*
Transport costs(**P***)	-1.1466	0.2674	-4.29*
Airlines servicing Zambia(**AR**)	1.9785	0.7176	2.76*
Visit Zambia Campaign(1999/2004) dummy($\mathbf{D_{1999/2004}}$)	-0.0981	0.1733	-0.57
September 11 dummy($\mathbf{D_{2001/2}}$)	-0.2860	0.1139	-2.51*
constant	-18.8143	3.7107	-5.07*

Note: * significant only at 1%, ** significant at 5% and *** significant at 10%.

The z-scores in table 5.2 are interpreted using the P-values at 1%, 5% and 10% level of significance. The results are for short run elasticities. All the signs are as expected and in line with the principles of consumer theory. The income of source country variable and the dummy variable for the visit Zambia campaign are not significant in this study. The cost of living, number of airlines servicing Zambia, transportation cost and the two dummy variables are significant at the 1% level as well.

The results obtained from the estimation of equation (3) show that the lagged tourist arrivals variable measuring the "word of mouth" effect has the expected positive sign. A 10% increase in the past number of tourist arrivals would lead to 4.4% increase in the current level of tourist arrivals. This shows that only 44% of the total tourist arrivals are attributed to the word of mouth effect. This gives an adjustment factor of 56%. The variable is significant at the 1% level. Meanwhile, the income of source country variable has an elasticity of 0.09. This shows that a 100% increase in income of the source country would lead to a 9% increase in the number of tourist arrivals.

The cost of living variable has an elasticity of -0.98 and transportation cost variable has an elasticity of -1.15. It implies that a 10% increase in cost of living and transportation cost will lead to a 9.8% and 11.5% reduction in tourist arrivals. This shows that the cost of living and transportation cost have a large impact on tourist arrivals in Zambia. While the dummy variables measuring the September 11 attack and the visit Zambia campaign have coefficients of -0.29 and -0.10 respectively.

The long run elasticities obtained by estimating equation (8), where $1-\beta_1 = 1 - 0.44 = 0.56$, are shown in table 5.3

Table 5.3: Results for the long run elasticities.

Long run parameters	Coefficient
Income of source country (**Y**)	0.15
Cost of living in Zambia(**P**)	-1.74
Transport costs(**P***)	-2.05
Airlines servicing Zambia(**AR**)	3.53

Table 5.3 gives the long run elasticities. These are the outputs for equation (8). The results for the long run elasticities show that the number of airlines servicing Zambia variable has the highest elasticity with a coefficient of 3.53. The second highest elasticity in the long run is that of the transportation cost variable with -2.05. It shows that a 10% increase in transportation cost would lead to twice as much decrease in tourist arrivals. Meanwhile, the income of the source country has the lowest long run elasticity of 0.15 and the cost of living variable has the second lowest long run elasticity of -1.74.

5.4 ANALYSIS OF THE RESEARCH FINDINGS

The word of mouth measures the effect on tourist arrivals of tourists who have been to Zambia telling other potential tourists about their stay in the country. This reduces

uncertainties and encourages other tourists to visit the country as well. Most studies such as those done by Naude and Saayman (2005), Proenca and Soukiazis (2005) and Garin- Muñoz (2006) show that the word of mouth effect is significant in determining the number of tourist arrivals with coefficients of -0.68, 0.78 and 0.60 respectively. This is in line with what is discovered in this study, the lagged dependent variable of tourist arrivals does have an impact on the flow of tourists in Zambia although the coefficient of 0.44 is considerably low. The adjustment process between the actual and the desired level of arrivals is 56%. This shows that in the long run, there is lack of repeat visit as the flow of tourist arrivals each year differs substantially. This implies that tourists coming to Zambia have a negative experience which does not inspire a repeat visit.

The income variable has the expected positive sign implying that an increase in the income of the tourists would lead to an increase in the number of tourist arrivals. Tourists will have an increase in their purchasing power. In the results obtained in equation (3), income of the source country is not a significant variable. A possible explanation for the insignificance of this variable in this study is the high income of most of the tourists that come to Zambia. The results show that tourism to Zambia is not a luxury good as the coefficient of the income variable (0.09) is less than unity. In the long run, the variable is not an important determinant of tourist arrivals in Zambia. A 10% increase in income would lead to a 15% increase in tourist arrivals in the long run. There is need to make Zambia an attractive tourist destination since the percentage increase in arrivals due to an increase in income is not a determinant of tourist arrivals. In the study by Naude and Saayman (2005), the income variable for total tourist arrivals with a coefficient of -10.03, was not significant. This was against expectations while in the studies by Habibi et al (2009) and Garin- Muñoz and Martin (2007) the income variable with coefficients of 0.03 and 0.92 respectively was found to be significant but not a luxury good.

The cost of living variable has the expected negative sign for the coefficient with an elasticity of -0.98. This is in line with the principles of consumer theory. Idowu (2009) made a similar discovery in the study on the determinants of tourist arrivals in Africa. It was shown that the cost of living variable had a negative sign of -0.0018 and was a significant factor in *determining tourist arrivals to Africa. Similarly, studies by Garin- Muñoz (2006) and Garin-* Muñoz and Martin (2007) show that tourists are sensitive to the cost of living in the destination country and it does have an impact on the flow of tourists. The obtained estimate shows that an increase in the cost of living in Zambia would lead to a reduction in tourist

arrivals. The proxy used to measure the cost of living is the consumer price index of Zambia relative to the consumer price index of the source country adjusted by the bilateral exchange rate. Therefore, if the prices of goods in Zambia increase by 100% relative to that in the source country, the number of tourist arrivals to Zambia would reduce by 98%. Tourists are aware of the exchange rates and they would compare the prices of goods in the destination country with the price of goods in their own country.

The variable measuring transportation cost incurred by tourists as they travel from the source country has the expected negative sign and does influence tourist arrivals into the country. This shows that an increase in costs will lead to a reduction in the number of tourist arrivals. It is also the second most important factor in the long run. An increase in the transportation costs would lead to twice as much reduction in the number of arrivals. Tourists closer to Zambia would face lower costs than tourists from overseas. This explains why most of Zambia's tourists are from within Africa and usually arrive by roads either driving or in coaches. Therefore, the closer tourists are to the destination country the lower the travel cost which has an influence on them choosing Zambia as a tourist destination. They would compare these costs with staying in their own country or going to another destination closer to their country. Other studies by Tsounta (2008), Garin- Muñoz (2006) and Naude and Saayman (2005) confirm that transportation cost is a significant factor in determining tourist arrivals.

The number of airlines servicing Zambia variable has a bearing on the number of tourist arrivals. The variable is significant at the 1% level. In the short run, a 1% increase in the number of airlines servicing Zambia would lead to a more than 1% increase in the number of tourists. However, in the long run a 10% increase in the number of airlines servicing Zambia would lead to a 35% increase in the number of tourist arrivals. This makes it the most important determinant of tourist arrivals in the long run. Therefore, there is need to increase the number of airlines servicing Zambia. This will be beneficial to the country since these airlines carry out promotional marketing programmes in order to attract more people to use their airlines. One way of doing this, is to increase the advertising of the tourist attractions that a destination country offers. It would be advisable to use other proxies in determining the accessibility of the country to international tourists. Tsounta (2008) found that the number of airlines servicing the ECCU countries had a significant bearing on tourism demand.

The results of this study further shows that the *visit Zambia campaign variable had no* bearing on the flow of tourists. The dummy variable was found with a coefficient of -0.098. The results from this study imply that the campaign did not achieve its goal of increasing the number of tourist arrivals. This shows the need to carrying out more vigorous campaigns in order to increase the flow of tourists substantially. There is need to entice tourists into the country in order for Zambia to reach its full potential in attracting tourists into the country.

The September 11 attack dummy variable has the expected negative sign and it shows that the attack had an impact on the number of tourists coming into the country. This shows that most of the countries in Europe, the Americas and Asia were affected by the effects of this terrorist attack. The data used in this study contains 12 out of 16 countries from these continents and these countries were affected by the September 11 attack.

5.5 CONCLUSION

The main objective of this study is to determine the factors that influence the number of tourist arrivals in Zambia. The results of this study show that the number of tourist arrivals is not influenced by the income of the source country. However, the cost of living, transportation costs and the number of airlines servicing the country are influential factors in determining the flow of tourists to Zambia. The empirical analysis confirms that Zambia is viewed as a high cost destination. This would affect potential tourists' decisions in choosing the country as a tourist destination. Further, the number of airlines servicing Zambia has an impact on the number of tourists coming to Zambia which calls for a better proxy in further studies. Transportation costs do play a major role in attracting tourists into the country. Tourists from Europe, Asia and the Americas face higher travel costs than tourists from Africa which affects their decision of choosing Zambia as a tourist destination.

CHAPTER SIX

POLICY RECOMMENDATIONS AND CONCLUSION

6.1 INTRODUCTION

This chapter gives policy recommendations that will help improve the tourism sector. These recommendations are based on the estimation results. It further points out the limitations of the study and areas for future research. In light of the results obtained, the chapter makes a conclusion of the study. It summarises everything that has been highlighted in this study.

6.2 POLICY RECOMMENDATIONS

In this study, although the lagged dependent variable measuring the "word of mouth" effect is a significant factor in determining the number of tourists coming into Zambia, it is still a point of concern for policy makers. The adjustment process shows that Zambia does not generate repeat visits. Once tourists visit Zambia, 56% of these tourists do not return for another visit. This can be due to tourists having a negative experience or the standard of services offered not meeting their expectations. It has affected the flow of potential tourists since they have not been given a very good report over Zambia. This increases tourists' uncertainty over making Zambia their choice destination.

In order for government to reach its long term vision of making Zambia a tourist destination of choice, its focus should be the development of tourism related infrastructure. This process is still under way but there is need to accelerate the development process. One way of doing this, is to ensure that national parks and tourist sites are accessible all year round. This will make visiting the tourist sites easier and comfortable.

Zambia has the potential of attracting more than 2 million tourists every year. In order to realise this potential, there is need for a vigorous and comprehensive marketing strategy. This can be done not only through advertising on the internet but also using international television networks. However, using the internet entails that it reaches a large number of potential tourists who already know of Zambia as a potential tourist destination. On the other hand, advertising on international television networks enables Zambia to be known as a

potential tourist destination by people who have never thought of it as a tourist destination. This would imply an increase in funding set aside for advertising.

The local people also need to be encouraged to invest in the tourism sector. The poor infrastructure, the high costs incurred by tourists and that of doing business in the tourism sector have negatively affected the sector's contribution the economy (Cattaneo, 2007). Policy makers need to put in place measures that will reduce these costs and the number of licences required in the tourism industry. Tourism is seasonal, therefore measures need to address the fact that the amount earned by businessmen fluctuates according to the amount of tourism flow. The seasonality of the industry would also affect banks willingness to give loans to businesses that are directly involved in the tourism sector. Since their ability to pay back the loans on time would be questioned.

Another issue that needs to be addressed is the cost that tourists incur when they come into Zambia. One of the reasons why tourists coming to Zambia face high costs is the limited number of international seat capacity in aeroplanes and few domestic flight connections (MFNP, 2002:68). This study shows that the number of airlines servicing Zambia do have an influence on the number of tourist arrivals. This increases the cost of travel incurred by tourists coming from outside the African continent. Further, making connection flights makes coming to Zambia not only expensive but time consuming as well. Policy makers need to attract more airlines to service Zambia. Besides, the country will benefit through the advertising campaigns embarked on by these airlines. However, it should be noted that the European Union (EU) has a ban on airlines based in Zambia. This is because the EU recognises Zambia as one of the countries that does not have airlines that meet their safety requirements. Policymakers need to put up measures that will enable Zambia to meet these safety standards in the long run. An immediate option would be to encourage more international airlines to service Zambia especially from the European market. Another suggested long run goal is to have a national airline. This will ensure that Zambia is fully marketed as a potential tourist destination.

The tourism services offered need to meet international approved standards. The quality of accommodation, services offered in tourist establishments and the treatment of tourists by staff needs to be looked into. This will ensure that tourists have a positive experience and their expectations are met. The people employed to directly deal with the tourists should be able to clearly speak good English and have good communication skills. These issues should

be monitored on a regular basis so that all the hotels and similar establishments have uniform standards.

6.2.1 LIMITATION OF STUDY

This study only considered tourist arrivals in Zambia from 1999 to 2008. This is due to a lack of data before 1999 that makes a distinction of tourists by country of origin. However, this does not affect the results obtained because of the model and the estimation procedure used which is ideal for the 10years period. There is also a lack of data at the ports of entry that shows whether a tourist is coming from or going to another tourist destination in Africa such as Kenya or Zimbabwe. This would be helpful in analysing the flow of tourists. There is need to have a comprehensive data base on tourism statistics and other statistics related to the tourism industry. Statistics on expenditure of tourists by country of origin and the mode of travel by country of origin need to be collected so that future studies can benefit from the use of these statistics.

There is also a need for statistics on tourist from other source countries. Currently, data collected by country of origin only considers 16 source markets. These source countries only account for approximately 75% of all tourist arrivals in Zambia. However, the number of tourists from these countries varies each year depending on their economic conditions.

Furthermore, the obtained results are possible determinants of tourist arrivals in Zambia and will probably vary according to the variables used and the model used in the estimation procedure.

6.2.2 AREAS OF FUTURE RESEARCH

There is need to carry out further research on the demand of tourism in Zambia. Different estimation procedures and techniques can be explored in estimating the demand of tourism. Further, the tourism sector is influenced by the economic conditions of the destination country and the source country. These economic conditions are constantly changing with

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time. Therefore, there is need to continue carrying out studies that will provide more up-to-date information on the determinants of tourist arrivals.

This study only considers a few factors that might have an impact on the flow of tourists to Zambia. However, there are other factors that need to be explored in future studies on tourism demand. Variables such as cost of travel to competing destinations, the marketing expenditure in the tourism sector, prevalence of diseases in Zambia, quality of offered accommodation and airlines' charges from source country. This information would be beneficial to policy makers.

6.3 CONCLUSION

The tourism sector needs to improve its marketing strategy and services in order to attract more tourists into the country. Zambia has the potential to be a major tourism provider with proper and consistent managing of the industry. What Zambia offers is unique and cannot be found in other places but there is need to strengthen this advantage. The possible determinants of tourism demand in Zambia are income of the source country, the transportation costs, the cost of living and the number of airlines servicing Zambia. Policy makers need to implement policies that will take advantage of these factors.

There is need to carry out more studies on tourism demand not only in Zambia but in other African countries as well. Policy makers need to target the right factors when managing the sector. This will lead to the subsequent flourishing of the sector. The sector will offer much more competition to other tourism destinations within and outside Africa. It will also lead to high levels of economic growth, employment creation and foreign exchange earnings.

Zambia has poverty reduction as one of its major goals since most people are poor. One way to deal with this is to take advantage of the tourism sector. It is a labour intensive sector and people working in this sector can be easily trained to cater for tourists' needs. Further, businesses that are linked to the industry such as craft, poultry and farming can benefit from a thriving tourism industry. The tourism sector in Zambia, on average, has shown an improvement in performance yet it is still further off from reaching its full potential. More needs to be done.

In the 2010 budget, the government has concentrated on infrastructure development, but this should not remain the only priority area. There is need to improve the standard and quality of tourism services. This entails improvement in sanitation and health facilities in tourism areas as well.

The government has taken steps to address transportation issues in the tourism sector such as the rehabilitation of the Lusaka, Livingstone, Ndola, Mfuwe, Kitwe South Downs, Chipata, Mongu and Solwezi airports. In dealing with marketing in the tourism sector, the Zambian National Tourist Board was restructured into the Zambia Tourism Board that deals in the marketing of the tourism product. The ZTB in 2005 embarked on the visit Zambia campaign that will run until 2015.

The Government in Zambia recognises the tourism sector as one of the sectors that can lead to economic growth and is working on improving the management of the sector. This will be beneficial not only to the current generation but also the future generation. There is need to continue the positive focus on the tourism industry in order to make a tourist destination of choice to potential foreign tourists.

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8. APPENDIX

8.1 ARELLANO AND BOND MODEL

The GMM differenced model used to estimate the data is the model proposed by Arellano and Bond (1991). The results were obtained using the GMM estimation procedure in STATA 10. The statistical package differences the data and gives the Sargan test, first and second order autocorrelation tests and the Wald test for joint significance of the independent variables.

Table 8.1: Results of tests

Number of instrument	22
Tests	
Wald chi2(7)	144.16 (0.00)
Autocorrelation test 1	-2.0483 (0.04)
Autocorrelation test 2	0.38922 (0.70)
Sargan (degrees of freedom) chi2(14)	22.1063 (0.08)

Source: Author's own calculations. †p-values are in parentheses.

The Wald test shows that there is a good relationship among the explanatory variables. The second order autocorrelation test accepts the null hypothesis of no autocorrelation in the first differenced errors. The Sargan accepts the null hypothesis of over identifying restrictions being valid at 1%.

The estimation procedure developed by Arellano and Bond (1991) called xtabond is used to obtain the one-step estimation results. The results are obtained from estimating equation (3) as shown in table 8.2. Instruments used for the lagged dependent variable are all the independent variables differenced and the dependent variable lagged two periods in level form. The estimator requires that there is completely no autocorrelation in the idiosyncratic errors.

Table 8.2: Short run results from Arellano and Bond model.

Variables	Coefficient	Standard error	Z score
Lagged tourist arrivals ($\mathbf{TD_{t-1}}$)	0.2239	0.1401	1.60
Income of source country (**Y**)	0.0876	0.1732	0.51
Cost of living in Zambia(**P**)	-0.2105	0.2184	-0.96
Transport costs(**P***)	-0.8044	0.2170	-3.71*
Airlines servicing Zambia(**AR**)	1.6235	0.6205	2.62*
Visit Zambia Campaign(1999/2004) dummy($\mathbf{D_{1999/2004}}$)	-0.0960	0.1477	-0.65
September 11 dummy($\mathbf{D_{2001/2}}$)	-0.2083	0.0958	-2.17**
constant	-14.2637	2.4426	-5.84*

Note: * significant only at 1% and ** significant at 5% and 10%.

The results show that the transport costs and the number of airlines servicing Zambia variables are the only factors that have an impact on tourist arrivals. The variables are significant at 1%. The September 11 attack dummy variable is significant at 5%. Therefore, it had an impact on the number of tourist arrivals.