DETERMINANTS OF INTERNATIONAL DEMAND FOR TOURISM IN NIGERIA

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ABSTRACT

The average international tourists arrival per thousand populations for the period 2000 to 2009 was 7 in Nigeria compared to 22 in Ghana. The major sources of these receipts were business tourists from France, United Kingdom and United State of America. Government efforts at increasing international tourism demand as an alternative source of non-oil revenue is yet to boost the country's tourist arrivals. Previous studies have investigated the economic potential of Nigeria's tourism, but paid little or no attention to explaining the factors responsible for the low demand. This study, therefore, examined the determinants of international demand for business and holiday tourism in Nigeria.

The Gorman-Lancaster demand framework was used to derive the international business and holiday tourism demand models. The independent variables were prices, risks and infrastructure, in Nigeria and competitor countries, as well as tourists' income. The competitor countries were Ghana, Benin, the Gambia and Togo with competitive weight of 27.7%, 25.0%. 25.0% and 22.2% respectively. The dependent variable was international tourist arrivals, which encompasses foreigners that visit Nigeria for a period between 1 day and 12 months, excluding transit passengers and foreigners in paid employment. Using quarterly data set for the period 2000Q1 to 2009Q4, panel fixed and random effects estimation techniques were utilised to estimate the parameters of the business and holiday tourism demand models from major origin countries considered; France, UK and US. The Hausman and Breuch-Pagan diagnostic tests were carried out to ascertain the efficacy of the model and the reliability of the results.

The results were based on panel random effects model as supported by the diagnostic tests. All the variables were significant, for business and holiday tourism, at 1.0% p-value except prices which were not significant in the business tourism model. A 10.0% increase in income of tourist from UK was associated with 3.3% increase in the business tourism model and 0.5% increase in holiday tourism. An increase of 10.0% in risk level in Nigeria induced a 20.7% decrease in holiday tourism from US while a 10.0% increase in competitor countries' risks led to an increase of 36.0% in business tourism from France. In the case of holiday tourism from the three origin countries, a 10.0% increase in prices in Nigeria was associated with a decrease of 0.4% in demand while a 10.0% increase in competitor countries' prices was associated with a 0.7% increase. Irrespective of tourism types, a 10.0% increase in the Nigeria's tourism infrastructure was associated with a 0.1% increase in demand from the three origin countries while a 10.0% increase in competitor countries' infrastructure induced a decrease of 0.4%, 0.6% and 0.2% in tourism demand from UK, US and France, respectively.

Improvements in tourism infrastructures and decrease in price level relative to competitor countries' infrastructure and price levels significantly enhanced tourist inflow to Nigeria. Thus, the effectiveness of tourism policy in Nigeria is conditional on actions of other competitors' countries. Nigeria should adopt segmented tourism marketing strategy in which high income groups in UK are targeted for business tourism.

Keywords: Tourism arrivals, Demand for Tourism, Gorman-Lancaster demand framework, Tourism marketing strategy.

Word count: 495

DEDICATION

To Almighty Allah, The All Knowing

And My Loving Families.

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CERTIFICATION

We certify that this work was carried out by Mr Muideen Adejare Isiaka in the Department of Economics, University of Ibadan.

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CHAPTER ONE

GENERAL INTRODUCTION

1.1. Introduction

Over the years, tourism has played a vital role in the economic development of many nations especially where tourism is the mainstay of the economy (UNWTO[1], 2013). This is because cross-border movement of consumers, which in the language of the General Agreement on Trade in Services (GATS) is referred to as consumption abroad, is the primary means of tourism demand. Consumers move to suppliers' territory to consume tourism. As tourism is consumed at the point of production, it encourages the development of different local businesses that generate employment and income for local communities. Tourism also generates demand for transport, telecommunications and financial services. Through the consumption of local products via tourist accommodation and through visitors' expenditures outside that accommodation, tourism can act as a catalyst for the development of small businesses in the production and service sectors, increase the demand for handicraft and generate linkages to agriculture, fisheries, food processing and light manufacturing, such as the garment industry. Tourism can also create links to the informal sector (WTTC, 2011).

According to Tokyo International Conference on African Development (TICAD, 2009), tourism is labour-intensive and encourages development of tourism infrastructure like transportation, communication, water supply, sanitation, public security and health services. Besides, as a labour-intensive sector, it creates jobs for relatively unskilled labour, it is also an important earner of foreign exchange and is often for these reasons promoted by less-

[1] UNWTO stands for World Tourism Organisation (to be distinguished from World Trade Organisation, WTO). UNWTO is a specialised agency of United Nations that serves as a global forum for tourism policy issues and a practical source of tourism know-how. The organisation monitors global trends in tourism through publications like 'Tourism Highlights', 'Tourism Barometer', 'Compendium of tourism statistics' and year books. Membership of UNWTO includes 155 countries (including Nigeria), 7 territories, 2 permanent observers and over 400 Affiliate Members.

developed countries (Williams and Shaw, 1992). Eilat and Einav (2004) state that tourism is important for economic development through its effects on employment, exports, stimulation of infrastructure provision, generation of tax income and promoting world peace. During the Rio Earth Summit in 1992, the United Nations Conference on Environment and Development (UNCED) identified travel and tourism as one of the key sectors of the economy which could make a positive contribution to achieving sustainable development. Travel and Tourism is the first industry sector to have launched an industry-specific action plan based on Agenda 21, the outcome of the Earth Summit. In 1996, the WTTC[2], the World Tourism Organisation (UNWTO) and the Earth Council, came together to launch an action plan to follow up on the implementation of Agenda 21 for the Travel and Tourism sector (WTTC/IHRA[3], 1999).

Tourism industry is the world's fastest growing international service trade. It has consistently grown at a rate higher than the growth rate of world Gross Domestic Product (GDP). The National Certificate of Educational Achievement (NCEA) analysed that between 1975 and 2000, average growth rate of world GDP was 3.5 per cent while that of tourists' arrivals was 4.6 per cent. That is, about 1.3 times faster than GDP (NCEA, 2009). According to WTTC, international world tourist arrival increased from 25 million in 1950 to about 920 million in 2008 and the growth of tourism industry is expected to continue in the nearest future. Between 2010 and 2020, WTTC forecasts that tourism is expected to increase from 9.2 per cent (US$5,751 billion) to 9.6 per cent (US$11,151 billion) in terms of the contribution to world GDP; from 8.1 per cent (235,758,000 jobs) to 9.2 per cent (303,019,000 jobs) in terms of tourism share of global employment; and from US$1,086 billion to US$2,160 billion in terms of global export earnings from international visitors (WTTC, 2010). According to the UNWTO preliminary result for 2013, global international tourists' arrivals grew at a rate of 4% in 2012 and exceeded 1 billion global tourist arrivals for the first time in history (UNWTO, 2013).

International tourism has emerged as the most important contributor to the recent trade and growth story of developing countries by accounting for 7 per cent share of developing

[2] WTTC stands for World Travel and Tourism Council, The authority on world travel and tourism. The organisation provides different reports on direct and indirect economic impacts of travel and tourism; there are 181 individual country reports, one world report, 17 regional and subregional reports, and reports for the G20, SADC, OECD, APEC, and BRIC. Travel and tourism is defined to include activities of travellers on trips outside their usual environment within the duration of less than one year.

[3] IHRA (often written as IH&RA) stands for International Hotel and Restaurant Association.

countries' goods and services exports and 45 per cent of their commercial services exports, 9 per cent and 65 per cent respectively for least developed countries (UNCTAD[4], 2007). Tourism industry incorporates various direct sectors including hotels and restaurants, travel agencies and tour operators as well as tourist guides. In 2006, the estimated contribution of tourism sector to world GDP and global employment were 10.3 per cent and 8.7 per cent respectively with global receipt of $733 billion or $883 billion with or without passenger transport correspondingly (UNCTAD, 2007).

Tourism plays a vital part in the global economy, generating roughly $1 trillion in global receipts in 2008 (up 1.8 per cent from 2007) and ranked as the fourth-largest industry in the world, after fuels, chemicals, and automotive products. Tourism is a key foreign exchange earner for 83 per cent of developing countries and the leading export earner for one-third of the world's poorest countries. For the world's 40 poorest countries, tourism is the second-most important source of foreign exchange after oil. It enables communities that are poor in material wealth but rich in culture, history and heritage use their unique characteristics as an income-generating comparative advantage (Honey and Gilpin, 2009). It creates networks of different operations, from hotels and restaurants to adventure sports providers and food suppliers. This enables tourist centres form complex and varied supply chains of goods and services, supporting a versatile labour market with various jobs for tour guides, translators, cooks, cleaners, drivers, hotel managers, and other service sector workers. Many tourism jobs are flexible or seasonal and can be done along with existing occupations, such as farming.

Services represent the fastest growing sector of the global economy and account for two thirds of global output, one third of global employment and nearly 20 per cent of global trade. Growth of the services sector is recognised to be an important aspect of economic development and is strongly associated with income growth and economic modernisation. The share of services in total GDP indicates the diversification level of an economy. Tourism service is one of the largest and fastest-growing components of trade in services and tourism is the world's largest employer. As noted by the World Trade Organisation (WTO) secretariat, tourism ranks in the top five export categories for 83 per cent of countries; importantly, most of these exports are generated by private sector participants that are small -

[4] UNCTAD means United Nations Conference on Trade and Development, an organisation that has been actively involved in supporting the development of tourism in developing countries for many years.

and medium sized businesses. Tourism Sector as a whole employed one in ten workers worldwide. It has three types of effects on employment: direct effects resulting from expenditures by tourists; indirect effects, such as the employment generated for the firms which act as suppliers to tourism-related enterprises; and induced effects on the economy as a whole resulting from expenditures being derived from the direct and indirect employment effects.

Many countries have recognised the importance of tourism to national economic development. This made 130 member countries of (WTO) commit to liberalising their tourism sectors (OECD, 2008). The United Nations has also identified the development of tourism as one of the methods poor countries might use to meet the Millennium Development Goals (MDGs) **(**Honey and Gilpin, 2009).

1.2. Statement of the problem

Nigeria has recognised the potential of tourism industry as an alternative source of income and means of diversifying the oil-dominated economy. Analysts of the Nigerian tourism sector agree to its potentials in contributing to foreign exchange earnings in Nigeria and diversifying the export revenue base (Bankole, 2005; Bankole and Odularu, 2006). The existence of certain precondition to tourism is not in doubt. Nigeria has many tourism assets including vibrant diverse cultures, exciting festivals, clean beaches, exotic landscapes, equatorial forests, national parks, game reserves, towering rocks, rolling hills, ancient caves, waterfalls, and hospitable people. In addition, there are airlines with regular shuttle flights to major tourist and commercial centres of the country, and there are hotels and guest houses that spread across the country. The foregoing notwithstanding, Nigeria is yet to derive expected benefits from these tourism assets (Bankole and Odularu, 2006).

The UNWTO applauds the initiative of the government of Nigeria to actively develop tourism as a means for improving the socio-economic conditions of the Nigerian people and diversifying its economic base. Sequel to this, UNWTO, at the request of Nigerian Government, and with the support of the United Nations Development Programme (UNDP) executed the project for the formulation of a National Tourism Master Plan for Nigeria which focuses on institutional and capacity strengthening support to the tourism sector. in an assessment of Nigeria's potential for tourism during the exercise in 2005, Francesco

Frangialli, the former head of the UNWTO, argued that with its capacity to spread its socio economic benefits to all levels of society, tourism can be a leading industry in the fight against poverty (NTDC, 2006).

The recommendations of the Tourism Master Plan have been integrated into the tourism-related sections of Nigeria's vision 2020:20. Nigeria has the vision of becoming the top tourists' destination in Africa and one of the top 20 destinations in the world. Is it possible to achieve this target without understanding the nature of international demand for Nigeria's tourism? The Nigeria Tourism Master Plan recognises the need for economists, planners and personnel with statistical and industrial experience to participate in the analysis that would make the target realisable. Despite all the past efforts, performance of the Nigerian tourism sector is still far below expectation, especially when compared with other countries in West Africa[5]. The dismay performance of Nigeria's tourism sector is due in part to the missing link in the information content during the planning and implementation stage. The most important information required for international tourism planning and implementation is the tourism demand model.

For the basic modelling and estimation of international tourism demand, to the best of the researcher's knowledge most of the existing published tourism studies are carried out at African regional level and do not focus on demand analysis. Many focused on the relationship, impact and causality between tourism and economic growth and development (Fayissa, Nsiah and Tadasse, 2007; Peter, 2004; Kareem, 2009). For studies that examined tourism demand in Africa (Kareem, 2008a, 2008b; Naude and Saayman, 2004), they do not present country specific result for Nigeria. This study should partially fill this gap, though, tourism demand issues have been assessed by many studies with different empirical results. A review of existing literature reveals that the most popularly researched countries in terms of tourism demand include USA, UK, France, Australia, Spain, Hong Kong, Korea, Mainland China, Germany and Japan (Witt and Witt, 1995; Li, Song and Witt, 2005; Song and Li, 2008). However, their findings and conclusions cannot be directly applied to Nigeria because evidence from the literature also reveals that empirical results vary across countries of destinations. Some tourism scholars specifically note that it is not possible to build a single model appropriate for all origin-destination pairs (Witt and Witt, 1995; Kulendran and Witt,

[5] See section 2.3.4 for analysis of the competitiveness of Nigeria among other West African countries.

2001). Thus for a specific destination, tourism demand estimates could be different for different origins.

Literature on definition of tourism identified types of tourism based on purpose of travel to include leisure or holiday tourism and business tourism (Smith and Collins, 1988; Murphy, 1985). In addition, tourism destinations' characteristics can be grouped into attractions and facilities (Papatheodorou, 2001) which can form the basis of grouping destination countries into competitor and complementary destinations. These suggest another dynamics to the tourism demand model.

The understanding of the tourism demand model in Nigeria should be detailed enough to answer the following questions among others:

i. Which countries are the main competitors of Nigeria international tourism among the other West African countries?

ii. What are the determinants of international demand for Nigeria's tourism?

iii. Is the international demand for Nigeria tourism different for holiday and business tourism or is it the same for all tourism types?

iv. Is the international demand for Nigeria tourism different for origin countries or is it the same for all source countries?

v. How do conditions in these competing West African countries affect the international demand for Nigeria's tourism?

As emphasised by Pearce (1989), the critical issue in sustainable tourism development is demand management, in terms of finding enough tourists to fill capacities. While Nigeria's tourism master plan and Vision 2020:20 set target goals for achieving the tourism development objectives, it failed to relate the goals to any formal international tourism demand model. Under this situation, the target as well as the implementation programmes for achieving it would be a guess exercise.

The focus of this study is therefore to provide an empirical analysis of international demand for tourism that can provide some of the missing information in relation to tourism demand in Nigeria.

1.3. Objectives of the study

Given the strategic importance of demand management in tourism development-related decisions in Nigeria, the overall objective of this study is to carry out an empirical analysis of international demand for Nigeria's tourism service. To achieve this objective, the specific objectives are to:

i. compute competitive weight of other West African destinations to Nigeria tourism;
ii. model and estimate the international demand for Nigeria's tourism;
iii. determine differences between international demand for business and holiday tourism in Nigeria;
iv. compare the estimate of international demand for Nigeria tourism from major countries of origin; and
v. ascertain the impacts of competitors' variables on the international demand for Nigeria's tourism.

1.4. Justification of the study

The first contribution of the study is its empirical assessment of the impact of competitors' variables on international demand for Nigeria's tourism. This study is oblivious of any existing study that examined the impact of competing destinations on international demand for Nigeria's tourism. This study specifically focuses on the analysis of international tourism demand in such a way that it can serve as a policy guide in Nigeria tourism development planning since the issue of the growth and developmental potential of tourism has been well established in the literature. This study thus provides additional empirical evidence in international tourism demand literature.

According to Naudé and Saayman (2004), the bulk of empirical researches in tourism demand modelling have made use of time-series approaches. They suggest that the use of panel approach is better in Africa as the use of cross-sectional data tends to give better estimates of long run relationships, whereas time-series tend to estimate short run

relationships. Given the challenges facing Africa and the need for sound policy advice for promoting tourism, it seems more appropriate to identify the long run determinants of tourist arrivals. This study therefore makes use of panel regression analysis to identify the long run determinants of international demand for tourism in Nigeria.

Some of the existing studies on tourism in Nigeria are merely descriptive. For example, Bankole (2005) is a descriptive note on tourism contribution, constraints and opportunities. Bankole and Odularu (2006) is also a descriptive essay on the potential roles of tourism in achieving Millennium Development Goals (MDGs). Unlike these descriptive studies, the current study is a detailed and rigorous empirical analysis.

There are two studies (Bankole and Babatunde, 2010a, 2010b) that specifically consider tourism demand in Nigeria. The limitations of these studies include lack of theoretical articulation of variables included in the estimated models as they claim there is no clear-cut approach for theoretical selection of independent variables. Also, none of these studies consider possibilities of different parameters for either different countries of origin or different types of tourism. The studies make use of aggregate variables at the global level (for example, global international tourists' arrivals in Nigeria are functions of world income). This present study makes use of origin specific data which should provide better guide for tourism policy planning and implementation as it avoids the heterogeneity problem of aggregate data. While existing studies on tourism demand in Nigeria assumed traditional classical demand as the theoretical foundation of their estimation, this study uses a better alternative in terms of Lancaster theory after introducing aggregation condition into the existing framework. Finally, to the best of the researcher's knowledge, none of the existing studies, either for Africa or Nigeria, estimated tourism demands either for business and holiday tourism, the main division of international tourism or for different countries of origin. Thus, this study is the first attempt to estimate and compare the nature of tourism demand for different origin countries and across tourism types in Nigeria.

1.5. Scope of the study

This study provides empirical analysis on international demand for Nigeria's tourism in aggregate and for specific origin countries. It also computes competitive weight of other West African destinations to Nigeria tourism and examines their impacts on international demand for business and holiday tourism in Nigeria. Based on data availability, the study uses

quarterly data of five origin countries[6] from 2000 to 2009 in estimating the international tourism demand model. Notably, reference is made to data from 1970 to 2012 in the descriptive analysis.

1.6. Organisation of the thesis report

The rest of this thesis is organised into five chapters. Chapter two is on the background of the thesis. It provides background information on the global structure of tourism industries, structure and distribution of African tourism assets with emphasis on West Africa, international demand for tourism in Nigeria, and tourism competitiveness of Nigeria among other West African countries. The review of past literatures is presented in the third chapter of the thesis. This is categorised into four broad categories of concepts, theories, methodologies and empirical evidence.

Chapter four is on the theoretical framework and methodology. Chapter five presents the analysis of results where the five objectives of the thesis are addressed in separate sections. Lastly, chapter six gives the summary, conclusion, recommendations, and limitations of the thesis with some identified issues for further studies.

[6] This is the coverage of the available disaggregated data. The five origin countries used are Canada, South Africa, United Kingdom, United States of America, and France

CHAPTER TWO

BACKGROUND TO THE STUDY

As the growth of Nigeria's economy has been threatened by declining global oil prices, tourism sector which had been previously neglected has now been embraced as an alternative source of revenue. Nigerian government has realised that tourism is an alternative to crude oil as one of the main sources of revenue. Pertinent to this, it makes the industry one of its six priority areas central to reviving the economy; one of the main instruments for achieving the country's 7-point agenda, the Vision 20:2020[7] programme and the Transformation Agenda of President Goodluck Jonathan administration. According to Oyejide and Bankole (2001), Nigeria's tourism sector includes hotel and restaurants, travel agencies, tour operators and tourist guide services. It also includes the transport sector because there cannot be tourism without travel. This section focuses on description of the current state of tourism market in Nigeria. To put the analysis in proper perspectives the discussion includes a description of the global structure of tourism industries as well as the situation in Africa paying adequate attention to West African countries.

2.1. The global tourism context

This section provides an overview of the current status of the international tourism market. It describes the structure of the international tourism industries, the infrastructure that drives the industry and the global economic impact of tourism industry.

2.1.1. The structure of the international tourism industry: Some consumers (international tourists) purchase most of the components of the end product in a package tour while others purchase selected elements. At an extreme, the Individual Tourist (IT) may purchase only transportation from one distributor and accommodation directly from the supplier. Tour operators and travel agents mainly handle the sale of the end product to the

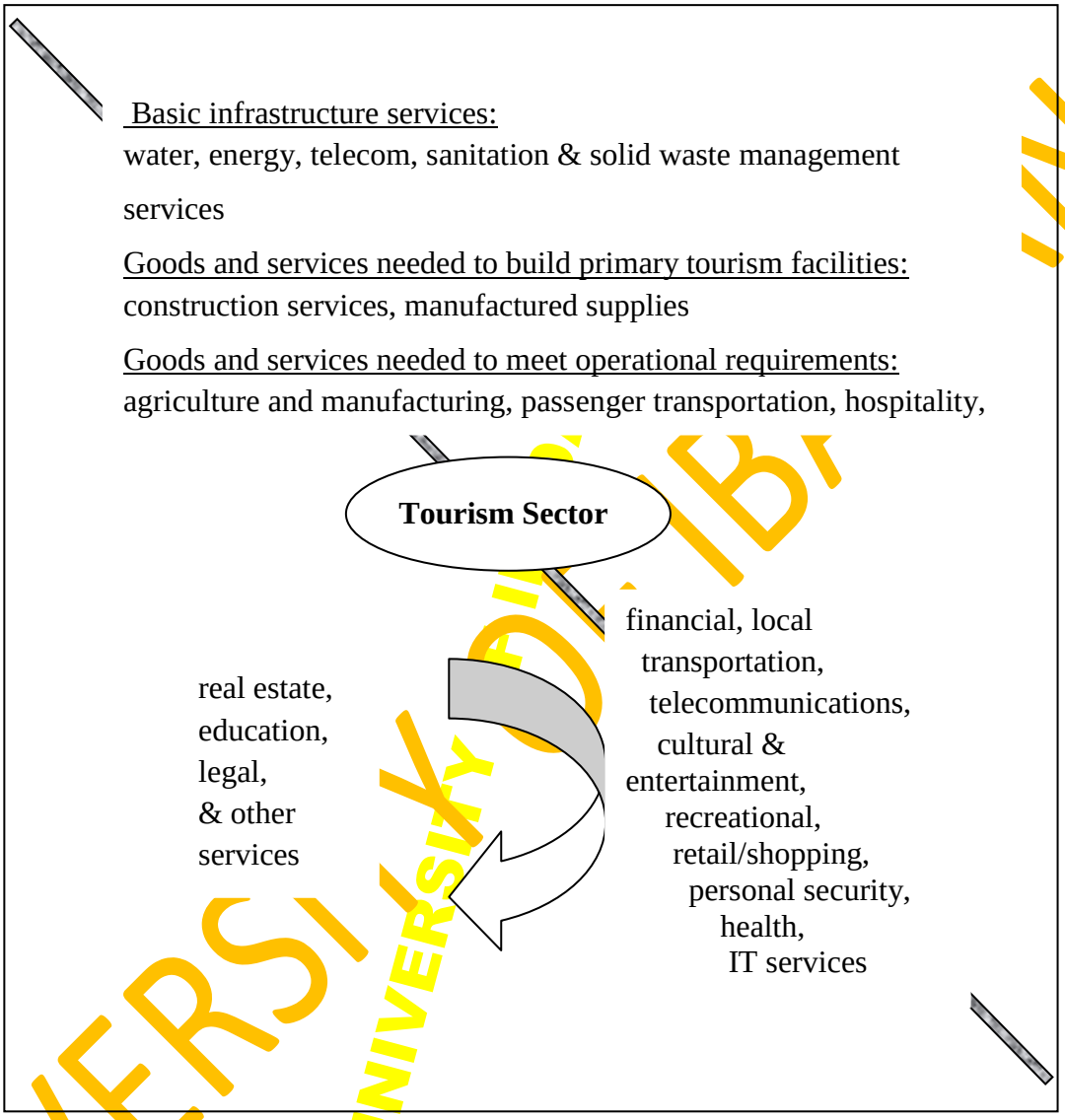
[7] see Appendix I and II for key initiatives and identified thematic areas for implementing Vision 20:2020.

consumer, although transportation companies also sell the end product directly to tourists. Another group that has become increasingly important players in the tourism supply chain is the holiday-makers, which comprise producers and distributors. Cruise ships and hotel reservations are in this category and have a high repeat business that allows them by-pass other distributors (Christie and Crompton, 2001).

2.1.2. Tourism infrastructure: Tourism may seem simple in the minds of many observers, but it is actually a complex, interlinked chain of many different services elements. A weak link in the tourism services chain, for instance, the unavailability of competitively priced professional services and unavailability of quality telecommunications or financial services can have a detrimental effect on the competitiveness of a country's tourism package (Kyriakidis *et al*, 2009). Tourism infrastructure requirements include primary infrastructure such as hotels, restaurants and recreational facilities as well as supportive physical infrastructure and basic services (resulting from backward linkages) like transportation, telecommunications, energy, water and waste management facilities and services (Figure 1). While private investment dominates the provision of primary infrastructure, investment in supportive infrastructure is usually government responsibility and an important prerequisite to private investment. Figure 1 shows the complex nature of tourism infrastructure required in order to develop the sector.

The main upstream sectors linked to tourism include basic infrastructure, goods and services to build primary tourism facilities, and to meet operational requirement. In addition to the common downstream linkages (bottom right), repeat visitors and long-stay tourists may also consume real estate, education, legal and other services (bottom left).

Figure 1. Infrastructure requirements for tourism development



Source: UNCTAD, 2007

2.1.3. Global economic impact of international tourism demand: The UNWTO estimates that between 1990 and 2009, international tourist arrivals (measure of international tourism demand) worldwide increased at an average annual rate of 3.8 per cent while, between 1990 and 2008, international tourism receipts (excluding international transport) increased at an average annual rate of 7.3 per cent (in nominal terms) (Table 1).

Table 1 portrays that international tourists' arrivals increased from 166 million people in 1970 to 920 million in 2008 with a slight fall, due to the financial crisis, to 880 million in 2009. This corresponds to annual growth rate of 9.9 per cent, 2.1 per cent and -4.3 per cent in 1970, 2008, and 2009 respectively. International tourism receipts increased from $18 billion in 1970 to $946 billion in 2008. The annual increase was 11.3 per cent and 10.3 per cent in 1970 and 2008 respectively.

2.2. The Africa tourism context

This section describes the structure of tourism in Africa. It contains the structure and distribution of African tourism assets, contribution of tourism to Africa economy, survey of previous tourism development efforts in Africa, challenges of tourism development in Africa, tourism assets in West Africa and tourism development efforts in West Africa.

2.2.1. Structure and distribution of African tourism assets

Africa landscape is dotted with natural tourist attractions comparable to the best in the world. This is complemented by her rich cultural and traditional heritage, which dates back to over 2000 (Federal Republic of Nigeria, 2004). It possesses unique tourist attractions which include national parks, exotic game viewing, deep-sea recreational fishing, lake and river fishing, archaeological tours, beach resorts and hotels, transportation (water, land and air), surfing and snorkeling, theme parks and exposition centres, and recreational beaches lined with coconut and palm groves (Olokesusi, 1990; NIPC[8], 2000).

[8] NIPC stands for Nigerian Investment Promotion Council

Table 1. Global tourism arrivals and receipts 1970-2009

Years	Arrivals (million)	Change (per cent)	Receipt (US $ billions)	Change (per cent)
1970	166	9.9	18	11.3
1990	436	5	264	14.5
2000	682	4.6	475	6
2002	702	2.9	488	3.8
2004	762	10.3	635	18.7
2005	802	5.2	680	7.1
2006	847	5.6	745	9.6
2007	901	6.4	858	15.2
2008	920	2.1	946	10.3
2009	880	-4.3	n/a	n/a[9]

Source: Commonwealth of Australia, 2010

[9] n/a – Not available

There is a notable geographic pattern to tourism resources in (and tourism flows to) Africa. Northern Africa (Tunisia, Morocco and Egypt) forms a northern node and Southern Africa (South Africa and Mauritius) forms a southern node. West and Central Africa have the least numbers of arrivals on the continent (Gauci *et al*., 2002). These are areas which are close to tropic region, with high incidences of malaria and other tropical diseases. North Africa has many sea-based tourism products, West and Eastern Africa's main tourism assets are cultural, East Africa is rich in wildlife tourism products, while South Africa tourism assets are more diversified than in other regions (Table 2). The development of tourism assets in different regions progresses at diverse pace and this is confirmed by the variability in number of arrivals across African regions.

Table 2. Africa's sub-regional tourism characteristics and resources

Sub-Region	Main Tourism Characteristics and Resources
North Africa	Coastal/beach tourism; Cultural tourism (historical, archaeological, unique lifestyle and architecture, arts and crafts.); Desert and nomadic tourism; Family beach resorts along the Mediterranean and Red Sea coasts; Pyramids of Giza and Nile Valley; Fez, Marrakesh, Carthage; Desert experiences.
West and Central Africa	Cultural tourism (interesting tribal cultures, traditions, architecture); History and heritage (slave trade, kingdoms and empires); Community based experiences; Ancient cities: Djenne, Timbuktu, Agadez; West African music; Community-based experiences (Dogon country-Mali, Ganvie-Benin); Ecotourism (forests, birds, river tourism). Examples: Osun Festival (Nigeria), Mole National Park (Ghana), Waza National Park (Cameroon), Reserve de la Lopé (Gabon), Goree Island (Senegal), Cape Coast and Elmina Castles (Ghana), Badagry Slave Route (Nigeria).
East Africa	Wildlife Safaris (migrations, plains game, primates, gorillas); Cultural experiences (ancient heritage and contemporary cultures); Ecotourism (forests, birds, plants, etc.); Mountaineering (highest mountains in Africa); Lakes and rivers (Rift Valley and lakes); Coastal resorts (Indian Ocean); Examples: Serengeti, Masai Mara, Parc Volcanos; Wildlife migrations; Zanzibar, origins of mankind, Ethiopian ancient churches and cities, tribal cultures (like the Masai); Various parks and forest areas; Rwenzoris, Kilimanjaro, Mt Kenya, Simien Mountains; Murchison Falls, Lake Victoria, Lake Tanganyika; Kenyan coast, Lamu Island, and Zanzibar.
Southern Africa	Scenery and landmarks; Coastal resorts; Wildlife Safaris; Urban culture, wine, food; Cultural experiences; Outdoor activities and adventure (Bungee jumping, white water rafting, mountaineering, diving, golf, cycling); Table Mountain, Cape of Good Hope, Victoria Falls, Okavango Delta, Namib Desert; Mozambique Bazaruto and Quirimbas archipelagos; South African Wild Coast and St Lucia estuary world heritage site; Okavango Delta, Chobe, Etosha, Kruger National Park, Luangwa, Gorongoza and others; Cape Town and the Cape Winelands; Lesedi, Shakaland; Victoria Falls, Wild Coast, Namib Desert, and South Africa Garden Route.

Source: TICAD, 2009

The distribution of tourism arrivals in Africa between 1990 and 2002 as well as its average growth rate between 2000 and 2008 is shown in Table 3. The table reveals that, on average, the growth rate of tourism arrivals in Africa is higher than the global growth. However, in terms of absolute numbers, Africa still receives a small share of the world arrivals. Throughout the periods covered in Table 3, North Africa consistently dominates the tourism market in Africa by receiving 8.4 million tourists in 1990 out of the 15 million tourists that landed in Africa in that year. East Africa ranked second with a wide gap by receiving 2.8 million tourists. South Africa followed with a lesser gap by recording 2 million arrivals. West Africa and Central Africa received 1.4 million and 0.4 million arrivals respectively. Southern African had overtaken East Africa since 1995 to maintain the second position. However, in terms of growth, West Africa ranked second with average growth rate of 7.9 per cent after North Africa that recorded 8.3 per cent. According to TICAD (2009), Africa recorded lowest receipts per arrival in 2008, with an average of $640 receipts per arrival compared to $970 in Europe, $1,130 in Asia and $1,280 in America.

Table 3. Tourist arrivals in Africa (millions)

	1990	1995	2000	2001	2002	2000-2008 growth
World	455.9	550.4	687.3	684.1	702.6	3.9
Africa (total)	15.0	20.0	27.4	28.3	29.1	7.5
North Africa	8.4	7.3	10.1	10.6	10.3	8.3
West Africa	1.4	1.9	2.6	2.7	2.9	7.9
Central Africa	0.4	0.4	0.7	0.7	0.7	4.9
East Africa	2.8	4.5	5.9	6.2	6.3	6.8
Southern Africa	2.0	6.0	8.2	8.2	8.9	6.7

Source: Naudé and Saayman, 2004; TICAD, 2009

2.2.2. Tourism assets in West Africa

Increasing importance of sustainable tourism has become imperative to West Africa as a regional economic community. In West Africa, tourism is an increasingly crucial activity contributing to economic growth and social development. The tourism industry has grown considerably in the last few years. It offers one of the greatest diversity and density of tourists' attractions in terms of landscapes, countryside and major historical cities. The rich heritage of West Africa and its great natural assets allow the development of various destinations and products such as cultural and historical, coastal or mountainous, sport or religious, thermal or gastronomic, business, and shopping tourism. The industry also renders a large number of tourism services and facilities such as hotels, bars and restaurants, leisure parts, sports centres, and museums all over the region. These services remain extremely diversified in each thematic area, from a luxurious hotel to a mountain refuge (Ige and Odularu, 2008).

West Africa is blessed with enormous ethnic diversity and a multifarious natural and cultural heritage characterised by deep-rooted traditions and generally harmonious cultural interaction. Among the factors that have had a positive impact on tourism in West Africa in recent years, are improvements in political stability, simplification of entry formalities, improved air services, adoption of harder-hitting tourism promotion policies and improved facilities (hotels and travel agencies) (Euromonitor International, 2010). Some specific country examples are mentioned in the following paragraphs.

Burkina Faso: A remarkable feature of Burkina Faso is the harmonious coexistence of over 60 ethnic groups bound by deep-rooted cultural links. The tradition of hospitality in the country is in part a reflection of this heritage. This cultural base has been the catalyst for numerous events designed to enhance and preserve local heritage and provide a sound basis for a nation founded on equitable inputs from all the components of its society. Having succeeded in preserving its diversity, Burkina Faso offers a wide variety of cultural manifestations evenly spread across the national territory as a whole. This cultural range goes hand in hand with diversity in terms of housing, landscape, archaeological sites and fauna. Hunting represents a major tourist attraction in the December-May period.

Cultural sites in Burkina Faso include: the vestiges of the Yatenga kingdom, notably Ouahigouya and Gourcy; the archaeological sites at Gandé Fabou and Pobé Mengao. The historic sites include: historic battle site of Bama, Noumoudara and Loropéni; the sanctuary

of the Gan kings, and ruins evidence of the organisation of the Mossi kingdoms. Also of importance are sacred sites (the sacred crocodile pool), the impressive buildings of Kassena and Nankana in the south, the Gourounsi cultures, the landscapes of Sindou and Néguéni, with their peaks and a hill. At regional level, every two years since the late 1960s, Burkina Faso has been host to the Pan African Film and Television Festival (FESPACO) and, since the early 1980s, the International Arts and Crafts Fair (SIAO), both in Ouagadougou. In addition, the Ouagadougou International Book Fair (FILO) has just celebrated its fourth anniversary. The expanding craft sector includes textiles (weaving, dyeing, embroidery and sewing), wood (carpentry, cabinet making), agribusiness (soap making, catering, dried fruit and vegetables, cereals), leather goods, basketry and metalworking. Skinner, Niasse and Haas (2009) note that the notorious large hydro agricultural dam in Bagré has been upgraded to ecotourist centre.

Cape Verde: **T**he Cape Verde's natural heritage comprises a large number of sites including the Fogo volcano, the Pico das Caldeiras, the Fontainhas plateau, the Serra Malagueta and the Topo de Martim. There are numerous processions and rituals founded on a host of popular beliefs in which dances and songs (morna, caldeira, funana, contredanse, mazurka, waltz, batuque, cola-san-jon, samba de carnaval, tabanca, ballads) play a major part. The best-known festivals are the Gamboa Festival, held in May on the beach at Santa Maria (Santiago), the Festival de Santa Maria (Sal) in September, the Sete Sois e Sete Lucas Festival (Santo Antao) in October and the Fesquintal, held in Praia, the capital in April-May. Other festivals include the famous Bandeiras, with drumming and a horse race, the Cola-San Jon and the Tabanca. Craft output remains limited but varied in such fields as ceramics, basketry, weaving, sculpture and painting. The country's most significant tourist features are the fortress at São Filipe, the Sé Cadedra ruins in Cidade Vehla, the statue of Diego Gomez, the Resistance Museum, the Presidential Palace, the Amilcar Cabral Memorial and the ruins of the São Francisco Convent. "Bila Baxo", the lower part of the city of São Filipe, on Fogo, is the richest of the country's heritage zones, but the neighbourhoods and centres of many towns also offer real tourist interest. Its situation as a crossroads between Europe, Africa and America, together with its climate, its diversity of landscape, flora and fauna, its political and social stability and the hospitality (morabeza) of its people, make Cape Verde one of the rising stars on the African tourism scene.

Ghana: With a wide range of places of interest, several of which have UNESCO World Heritage status, Ghana enjoys a unique tropical ecosystem, numerous virgin beaches along its 540 km of coastline, and national parks like the one at Kakum. Cultural tourism focuses on forts and castles dating as far back as the 14th century, traditional festivals, burial ceremonies, museums and sanctuaries, notably in the south of the country. Given their significance and importance in the history of mankind, the old slave routes are now subject to preservation measures. Ghana is probably the only country to offer such a concentration of forts and castles built down through the centuries by the Portuguese, Dutch, Danes, Germans, Swedes and English. Examples worth citing are the castles of Elmina, Saint-Georges and Cape Coast, the Saint-Jago fort and the palace and museum at Manhyia. Other assets include the traditional Ashanti buildings (ATA, 2010a).

Ghana also offers avenue to visit archaeological sites like Yikpabongo in the north region, and Hani and Kintampo in the western region. Among the major modern tourist attractions is the Kwame Nkrumah mausoleum, a tribute to the founder of the nation. There are numerous rites of initiation and puberty and wedding celebrations. Funerals are cultural and touristic highpoint in that they are social occasions marked by music and dancing. Traditional crafts are a major aspect of life in Ghana and a real tourist attraction. The country has a tradition of gold mining and art craft has long been a feature of their cultural heritage. Examples are wooden stools (the famous Ashanti "thrones") and the message sticks and drums once used for communication, royal ceremonies and musical entertainment. Items in brass and gold, ceramics and kente cloth are now well known. Goufrani (2010b) explains that in the multicolour Ghana's Kente, Gold stands for status and serenity; Yellow symbolises fertility and vitality; Green indicates the cycle of birth and decay; Blue characterises the presence of God and the omnipotence of the blue sky; Red stands for the passion of political determination, struggle and defense; while Black depicts union with ancestors. Africa Travel Magazine (ATA, 2010b) describes Ghana as 'the smile of the face of Africa.' The first indication of government interest in developing the tourism industry in Ghana was a feasibility study conducted in 1970 on the development of tourist attractions for a five-year development plan, 1972 to 1976 by Obuan Committee, set up in 1972.

Following the study, the Ghana Tourist Board (GTB) was established in 1973 to implement national tourism policies and coordinate tourism activities. GTB was saddled with the responsibility of regulating accommodation, catering, travel, transport and charter operations

through registration, inspection, licensing, classification, and enforcement of decisions. GTB was also charged with the responsibility of promoting and market tourism in Ghana and abroad, to conduct studies and research into trends in the tourism industry at home and abroad to aid decision and policymaking, to promote the development of tourist facilities, and to carry out functions that might be conferred on it by legislative instruments. Consequently, the Ministry of Tourism (MOT) was established in 1993 to formulate policies and plan for the development and promotion of domestic, regional, and international tourism. In 1995 MOT, with assistance from UNDP and the World Tourism Organisation (WTO), now known as UNWTO, prepared and introduced a 15-year National Tourism Development Plan (NTDP, 1996 to 2010) to stimulate growth and development of the tourism industry (Addo, 2011).

Mali: Mali is endowed with historical significance and blessed with extraordinary array of sights. Its natural wonders range from the deserts of the north to the fertile greenery of the south. Mali has always been a centre of attraction for foreigners, enjoying a reputation for hospitality that makes it a focal point for fruitful dialogue and interchange. Its list of distinguished visitors includes Ibn Battutah, Leo Africanus, René Caillé and Heinrich Barth. The mysterious Timbuktu is a crossroads for the Targui, Songhai, Bella and Arab cultures; ancient social and religious traditions like mask dances and divination games at Sangha, Ireli, Guimini and Kani-Kombole. According to West Africa Directory (2009), the ancient town of Timbuktu is one of Mali's four UNESCO world heritage sites, famous for its religious monuments like the Dingarey Bey Mosque. Timbuktu became an intellectual and spiritual centre of Islam in the 15th and 16th centuries, with a famous university that has over 25,000 students. Presently, there are over 700,000 manuscripts in Timbuktu libraries, many dated as far back as 12th and 16th centuries.

Niger: Straddling the Sahel and the Sahara, Niger is a link between North and Sub-Saharan Africa (SSA). Some events, like the International Festival of African Fashion (FIMA), launched by talented Nigerien designer Alphadi, have helped the country find international audience. Both Saharan and Sahelian, Niger's Black African and Arab-Berber populations fall into several groups including the Hausa, the Zarma, the Songhai, the Kanuri, the Beri-Beri and the Fulani. The national nature reserve of Aïr and Ténéré is home to many cave paintings and carvings. The crafts are flourishing and the Old Town of Agadez draws many tourists to its Bianou festival and other traditional celebrations such as the 'Cure Salée'. The quality of

Nigerien crafts has led to several prizes at the International Arts and Crafts Fair (SIAO) in Burkina Faso.

Senegal: Tourism is one of Senegal's main sources of income. Cape Skirring is one of the best-known beaches. The Petite Côte offers many tourist sites, among them Saly, whose bay, the subregion's largest beach resort, offers many luxury hotels and a wide choice of holiday activities including fishing, golf, horseriding, cruises and microlighting. The Djoudj National Bird Sanctuary, the third largest in the world and a UNESCO world heritage site. On the borders of Mali and Guinea, Eastern Senegal includes the vast Niokolo-Koba National Park, also a listed UNESCO world heritage site. Since the first 'Festival des Arts Nègres' in April 1966, Senegal has become a leading light in the various artistic fields: cinema, literature, music, the visual arts and other contemporary artistic ventures (ATA, 2010b).

Guinea: Given its big size and population of just 7.5 million, Guinea is described as the land of contrasts with its romantic, captivating Malinke music classically applauded everywhere in the world. One of the most known tourist attractions in Guinea (also called Guine Conakry to distinguish it from Guinea Bissau) is Mount Kaloulima, referred to in French language as "Le Chien Qui Fume" meaning the Smoking Dog. Also referred to as the Switzerland of Africa, Guinea has superfluous mountains and high plateaus (Goufrani, 2010a).

Benin: Benin is a great nation in West Africa with the size of Pennsylvania, Dubai. World has partnered with the government to develop a large-scale tourist attraction (Dubai World Africa's Beachfront Development) in the West African country. The master plan includes a 32 km beachfront development as well as an international hotel in the capital city of Port Novo (Bird, 2010b). Existing interesting places for exploration include the Afro-Brazilian heritage of Ouidah and Port Novo, the palm-fringed beach idyll of the Atlantic coast, the Parc National de la Pendjari.

2.3. Tourism in Nigeria

This section describes the Nigerian tourism sectors. It contains government policies that target tourism sector, stock of tourist attractions in Nigeria, international demand for Nigeria tourism, and its competitiveness in West Africa subregion.

2.3.1. Tourism related government policies and programmes in Nigeria

Nigeria gained independence from Britain in 1960; in 1976, government established the Nigeria Tourism Board (NTB) and tourism has become a notable economic activity since then. The desire of the government to increase and diversify the sources of national income especially after the glut of the international oil market in the early 1980s and the realisation of the enormous potentials of Nigeria's tourism sector, led to adoption of some economic measures aimed at promoting the growth of tourism and other non-oil sectors in Nigeria in the mid 1980s. The Nigeria tourism industry has been on the road map for development over time. This is evident in the provisions of a road map for the harmonisation and diversification of the tourism resources. Based on this, a National Tourism Policy was formulated and launched in 1990. The main thrust of government policy on tourism was to market Nigeria as a desirable tourism destination, generate foreign exchange, promote tourism-based rural enterprise, generate employment and encourage private sector participation in tourism development, as well as accelerate rural-urban integration and foster socio-cultural unity among the various regions of the country through the promotion of domestic and international tourism. Tourism therefore became one of the vital sectors of the Nigerian economy.

The National Tourism Policy also put in place an institutional framework with organs at federal, state and local government levels for the implementation of the policy provisions. At the centre, the Federal Ministry of Culture and Tourism was responsible for policy matters and represents the nation's interest at the international level, while the National Council on Culture and Tourism serves as the highest advisory body on tourism development matters in the country. The Federal Ministry of Culture and Tourism takes responsibility for formulation and monitoring of policies, while the state Ministries and Tourism Boards implement the policies, control land allocation and coordinate the development of tourism projects. The Local Government Tourism Committees are to identify tourist sites, preserve and maintain heritage sites and monuments in their locations. These agencies collaborate with other

government agencies and the organised private sector such as tour, travel, hotel and restaurant associations for the implementation of the policy provisions and other tourism development programmes in the country (NTDC, 2006).

2.3.2. Stock of tourist attractions in Nigeria

The international tourists in Nigeria can be divided mainly into holiday and business. Leisure tourists enjoy cultural events, museums, historical sites and man-made attractions. Most of Nigeria's cultural assets relates to the cultural diversity of its people with about 370 ethnic groups, 4000 dialects and over 140 million people which constitutes one-seventh of the continent's population. Many cultural events take place at different times of the year across the country which attracts large number of visitors domestically and internationally. These cultural elements of Nigeria's tourism include: cultural events, religious activities, collection of arts and artifacts (in museums), ancient walls and buildings, and other historic sites. Examples of cultural festivals in Nigeria include: Osun Festival; Argungu Fishing Festival; Calabar Festival; Abuja Carnival; Eyo Festival; Ikeji Festival; Kwa-Ghir Festival; Rivers State Festival; Sharo Shadi Festival; Mmanwu Festival Enugu; Durbar Festivals; Awon Mass Wedding; Ovia Osese Festival; Igue Festival; Igunnuko Festival; Agemo Festival; Egungun (Masquerade) Festival; Oro festival; Yemoja Festival; and Obatala Festival.

Several major cities in the country have national museums. The prominent ones include: the National Museum in Lagos, the Esie Museum and the National War Museum. There are many historic sites in Nigeria that serve as tourist attractions, these include ancient walls and buildings and slave routes. Example of the slave route is Badagry Slave Routes. The walls and buildings include the city walls like Kano city wall, old buildings like the tallest old mud-brick building, palace of Emirs and Obas like The Oba's Palace in Benin; The Idoma Palace in Benue State; Emir of Katsina's Palace; Emir of Zaria's Palace in Kaduna State; The Emir of Kano's Palace; Alafin's Palace in Oyo State.

Concerning wildlife assets, there is a network of habitats, hedges, rivers and riverbanks for species to move through in Nigeria. These include: Yankari, Kainji, Cross River, Old Oyo National Park, Chad Basin, Ghashaka Gumti, Okomu and Kamuku National Parks. The wild-life based tourism assets include zoos, researves and parks. Examples include: Jos Wildlife

Park, lkwe Wildlife Park; The Montare Game Reserve in Benue State; Kyarimi Park in Borno State; The Makurdi Zoo in Benue State; and Jos Zoological gardens.

Nigeria's natural tourism assets include physical structures like rock formation, rivers, oceans and lakes. The Ikogosi Warm Springs in Ekiti State, the Kainji Lake Park in Kwara State, the Mambilla Plateau in Adamawa State, the Obudu Cattle Ranch, the Owu Falls, the Olumo Rocks, the Idanre Hills in Ondo State. There are also many beaches in Nigeria. Examples include: Coconut Beach of Badagry, Bar Beach, Tarkwa Bay, Calabar Beach, Lekki Beach and Eleko Beach.

Man-made tourist attractions in Nigeria include: Trans Amusement Park, Oyo State; Water Parks, Lagos State; Frankid Amusement Park, Lagos State; Hills and Valleys Amusement Park, Kano State; Whispering Palms, Lagos State; International Youth Tourism Center, Plateau State; Seam Health Farm, Ogun State; Murtala Mohammed Botanical Garden, Lagos State; Helena Farms, Plateau State; Rojeny Toursim Village, Anambra State; Chama Park, Katsina State; Abuja Gardens, Abuja; UI Zoological Gardens, Oyo State; Audu Bako Zoo, Kano State; Obafemi Awolowo University Zoo, Osun State.

Conference/Business Tourism is a veritable area of tourism in which Nigeria is making wave among other countries in the world. There is an international conference centre located in the central business district area of Abuja, which can comfortably host any conference of international standard. The exquisite secretariat of the Economic Community of West African States (ECOWAS), located in Asokoro District of the FCT serves as the Administrative Headquarters of ECOWAS with facilities for international conference. The international conference centre, located along Herbert Macaulay Way at Garki District in Abuja, serves as venue for conferences, seminars and conventions. It has an auditorium with a sitting capacity of 2,000 and other smaller committee rooms with communication equipment and gadgets capable of translating at least four languages simultaneously.

2.3.3. International demand for Nigeria's tourism

The main sources of international demand for Nigeria's tourism are shown in Panel A of Figure 2. The height of the bars represents the international tourists' arrivals in thousands. A tourist into Nigeria include any person visiting Nigeria for at least 24 hours and for a period not exceeding 12 months, and staying in collective or private accommodation. The international arrivals (given in terms of number of people) is different from international trips because during the course of one trip, there may be numerous visits to different countries which would then be recorded separately in the international arrivals figures of each country visited. Therefore, one international trip does not translate to one international arrival. The figures exclude same-day visitors; transit and cruise passengers; foreign people in paid employment; foreign students that stay in the country for a period of more than 12 months.

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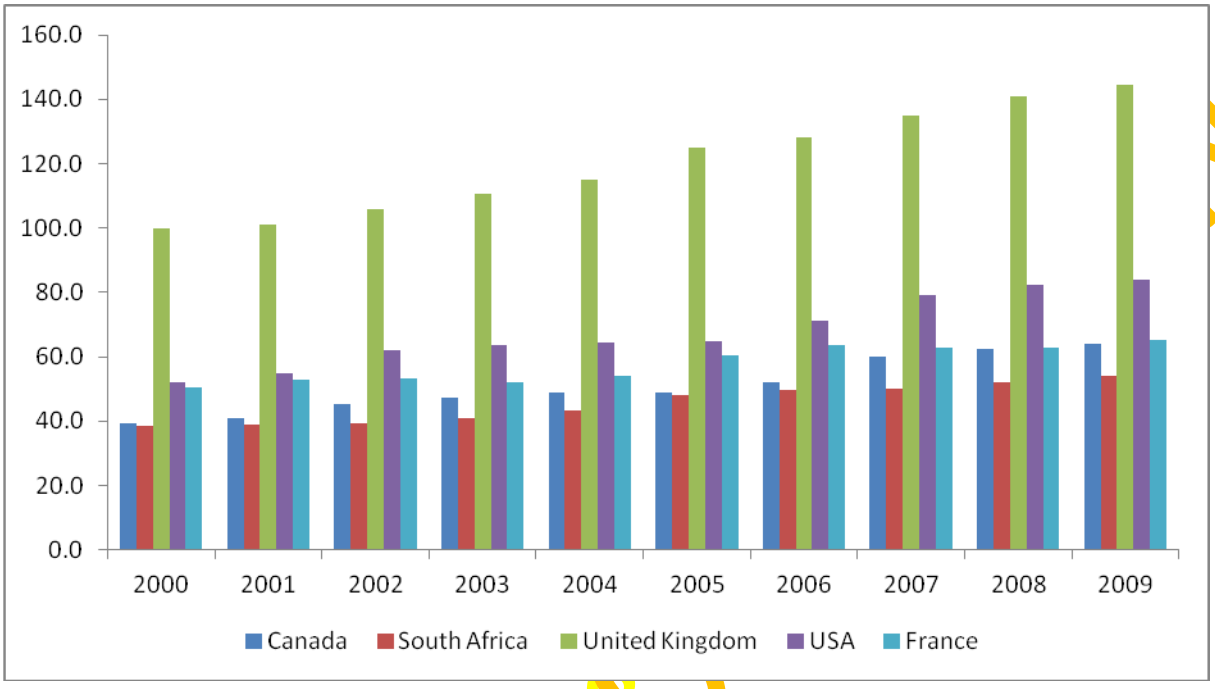
The most important source of international tourism demand for Nigeria is United Kingdom. International tourists' arrivals from UK increased from 99,900 people in 2000 to 144,600 people in 2009. This is followed by USA which accounted for 83,900 international tourists in 2000.

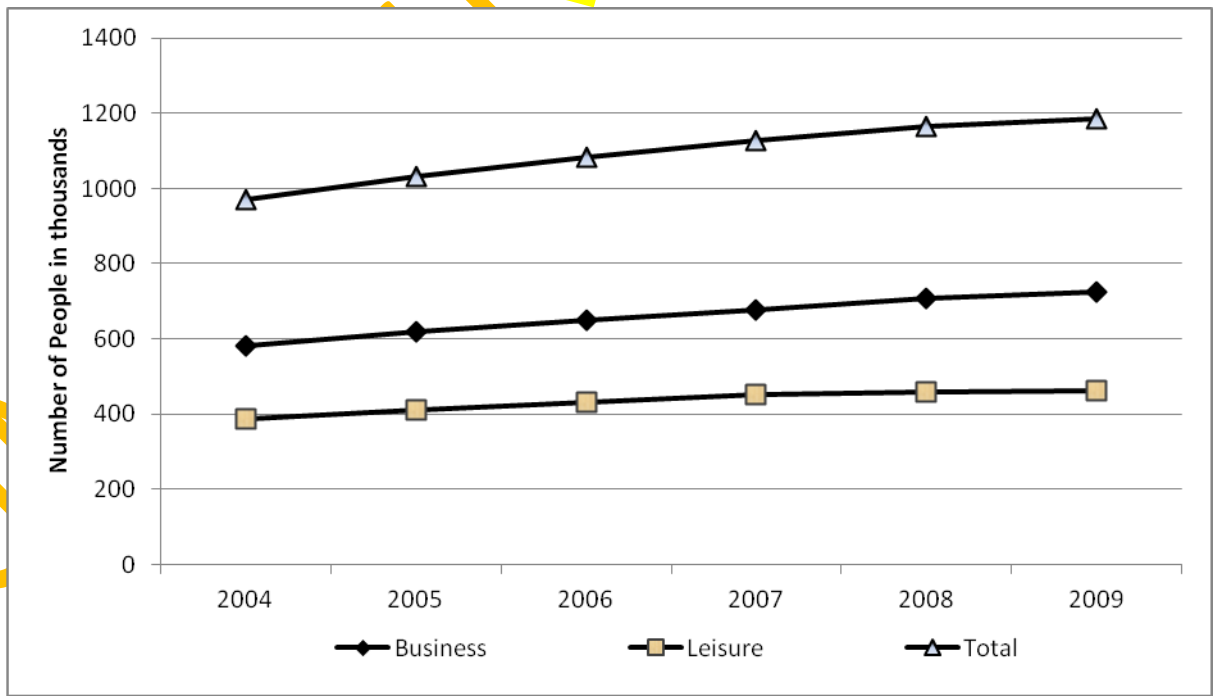
On the average, between 2004 and 2009, about 60 per cent of total international tourists' arrivals in Nigeria were for business purpose while the remaining 40 per cent were for holiday. For example, in 2004, 2007 and 2009 the number of people that visited for holiday purposes were 388,300, 451,400 and 461,700 respectively (Panel B of Figure 2).

Figure 2. Trend of international demand for Nigeria's tourism

Panel A: Mains sources of international demand for Nigeria's tourism



Panel B: Trend of international demand for Nigeria's business and holiday tourism



Source: Author's computation: underlying data from Euromonitor, 2010

2.3.4. Nigeria's tourism competitiveness in West Africa

The relative international tourists' arrivals in Nigeria and some other West African countries are shown in Table 4. Throughout the period, The Gambia has the highest arrivals per thousand of the population which ranges from 42 to 89. This is followed by Ghana and Benin with average international arrivals of 22 and 19 respectively. Nigeria's average tourist's arrivals of seven per thousand of population, is only above that of Niger and Sierra Leone with four and six respectively. This trend suggests that the competitiveness of Nigeria's tourism relative to other West African countries is not impressive. One international measure of tourism competitiveness is the Travel and Tourism Competitive Index (TTCI).

The World Economic Forum has developed a measure of competitiveness in travel and tourism sector. This measure is the TTCI. It measures the factors and policies that make it attractive to develop the travel and tourism sector in different countries. The TTCI is based on three broad categories of variables that facilitate or drive travel and tourism competitiveness. These categories are summarised into the three sub-indexes as follows: the travel and tourism regulatory framework; the travel and tourism business environment and infrastructure; and the travel and tourism human, cultural and natural resources sub-index. The regulatory framework captures elements that are policy related and generally under the purview of the government; the business environment and infrastructure captures elements of the business environment and the tourism infrastructure of each economy and the third sub-index captures the human, cultural, as well as natural elements of each country's resource endowments.

Table 4. International tourists' arrivals per thousand populations in Nigeria and some other West African countries

Years	Benin	Burkina Faso	The Gambia	Ghana	Mali	Niger	Nigeria	Sierra Leone	Togo
1999	24	14	75	19	9	4	**6**	3	14
2000	12	10	76	20	8	4	**6**	3	14
2001	14	11	61	20	9	4	**7**	4	11
2002	13	10	42	22	9	5	**7**	5	11
2003	10	12	58	24	9	3	**7**	6	10
2004	24	12	51	25	10	4	**7**	8	11
2005	23	16	61	27	10	4	**7**	9	14
2006	22	18	71	20	12	5	**7**	8	14
2007	22	18	80	22	13	4	**8**	6	15
2008	22	20	89	22	13	4	**8**	6	14
Average	19	14	66	22	10	4	**7**	6	13

Source: Underlying data from African Development Indicators, 2011

The regulatory framework is measured by index of: policy rules and regulations; environmental sustainability; safety and security; health and hygiene; and prioritisation of Travel and Tourism. The business environment and infrastructure competitiveness is measured by: air transport infrastructure; ground transport infrastructure; tourism infrastructure; ICT infrastructure; and price competitiveness in the Travel and Tourism industry. The human, cultural, and natural competitiveness is measured by index of: human resources; affinity for travel and tourism; natural resources and cultural resources. The tourism competitiveness ranking of Nigeria compared to some West African countries is illustrated in Table 5.

Out of a total of 133 countries considered in TTCI computation in 2009, Nigeria ranked 128th. This is a weak competitiveness, and out of the eight West African countries included in the calculation, Nigeria ranked ahead of only Cote d'Ivoire in the 130th position. The Gambia led with its 87th position followed by Senegal, Ghana, Mali, Benin, and Burkina Faso in order of global competitiveness. The same order of competitiveness holds for regional ranking within Africa and Middle East. Under the regulatory pillar, Nigeria ranked last by taking 132nd position due to lack of competitiveness in safety/security and health/hygiene where Nigeria ranked 133rd and 129th respectively. However, Nigeria has better ranking under policy rules, environmental sustainability and tourism priority under which Nigeria ranked 113rd, 61st and 122nd respectively. With the exception of Cote d'Ivoire, West African countries are competitive in terms of environmental sustainability. The regulatory ranking revealed that, in West Africa, Nigeria has policy environment conducive to developing the travel and tourism sector, that Nigeria's natural environment provide an attractive location, and that tourism is a sector of primary concern to Nigerian government. Notably, there is need to improve the provision of pipe borne water, sanitation and health services.

Table 5. Tourism competitiveness ranking of Nigeria and some other West African countries

Countries	Senegal	Ghana	Mali	Benin	Nigeria	Côte d'Ivoire	Gambia	Burkina Faso
Regional ranking	12	13	18	19	**25**	26	8	24
Global ranking	101	110	119	120	**128**	130	87	126
Regulatory pillars								
Policy	103	84	116	124	**113**	115	85	110
Environmental	67	48	70	38	**61**	102	52	71
Safety/ Security	43	69	77	68	**133**	124	27	83
Health/ Hygiene	120	117	124	125	**129**	119	107	122
T&T Priority	70	108	76	115	**122**	132	25	110
Index Rank	101	105	114	117	**132**	131	65	118
Business environment and infrastructure pillars								
Air transport	82	101	118	121	**95**	88	85	124
Ground transport	93	96	100	104	**118**	71	58	82
Services	94	105	119	116	**121**	133	124	110
ICT	103	114	116	118	**108**	113	100	128
Price	115	36	89	74	**69**	120	14	87
Index Rank	108	102	126	121	**116**	123	90	122
Human, cultural and natural pillars								
Human Resources	105	114	125	111	**113**	126	102	129
Affinity for T&T	87	56	54	98	**124**	116	13	101
Natural Resources	33	57	88	60	**51**	32	101	71
Cultural Resources	90	105	91	118	**103**	130	107	131
Index Rank	82	104	120	116	**113**	118	98	131

Source: TICAD, 2009

In terms of the business environment and infrastructure, Nigeria is ranked 116th; this however is on a good side compared to countries like Benin, Burkina Faso, Cote d'Ivoire, and Mali which are ranked 121st, 122nd, 123rd and 126th respectively. The Gambia, Ghana and Senegal have more competitive business environment ranking of 90th, 102nd and 108th position. However, Nigeria is more price competitive than Senegal with the rank of 69th against 115th. In terms of Information and Communication Technology (ICT), Nigeria is more competitive than Ghana with the ranking of 108th and 114th respectively. And in terms of support services, Nigeria is more competitive than Gambia with 121st and 124th ranking respectively.

Nigeria competitiveness is strong under the human, cultural and natural resources competitiveness. Nigeria ranked 113rd following Senegal, The Gambia and Ghana which ranked 82nd, 98th and 104th respectively. In terms of cultural resources competitiveness, Nigeria is ranked 103rd position after Senegal and Mali in the 90th and 91st position respectively. With the exception of Gambia, all the other seven West African countries included have strong natural resources competitiveness. The passion for travel and tourism is relatively poor in Nigeria. The level of human resources competitiveness is similar in all West Africa countries examined. It is however pertinent to consider some elements of competitiveness index explicitly. This is the focus of the discussion that follows.

Air transport: Considering the air ways, the number of registered airline departure in Nigeria compared to other West African countries is depicted in Table 6. The registered airline departure from Nigeria increased from 9,400 in 1970 to 39,100 in 1980 and then decreased to 37,500 in 1985. It continued to decline at a faster rate from 17,400 in 1990 to 6,600 in 1990. It increased again to 12,761 in 2000, decline to 10,227 in 2006 and increased to 16,045 in 2006. As at 2008, the figure was 18,005.

Nigeria dominated the air transport market in West Africa during the period covered as showed in Table 6. On the average, Nigeria is followed by Cape Verde. Air departure in Cape Verde increased from 13,010 in 2000 to 19,905 in 2005. There is a slight decline in 2006 with 19,862 departures which increased to 21,086 and 12,236 in 2007 and 2008 respectively.

Table 6. Air transport, registered departures in Nigeria and other West African countries

Country	Burkina Faso	Cape Verde	Ghana	Mauritania	Niger	Nigeria	Senegal	Sierra Leone
1970	1,600	na	5,000	5,600	2,900	**9,400**	4,100	na
1975	1,400	na	5,900	4,200	2,700	**19,200**	4,200	1,900
1980	2,300	1,600	5,600	4,900	3,100	**39,100**	5,800	3,200
1985	2,400	8,100	5,800	4,100	1,100	**37,500**	6,200	3,100
1990	2,200	6,700	12,600	3,600	500	**17,400**	3,500	500
1995	3,100	7,100	3,000	4,600	1,300	**6,600**	4,500	200
2000	3,368	13,010	4,873	3,761	1,518	**12,761**	2,415	202
2005	1,471	19,905	na	1,720	na	**10,227**	6,441	164
2006	1,512	19,862	na	1,725	na	**16,045**	Na	171
2007	1,614	21,086	na	1,833	na	**16,936**	Na	na
2008	1,413	12,236	na	1,159	na	**18,005**	Na	na

Source: African Development Indicators, 2011

Price: Price competitiveness is an important element of comparison in any international business. For tourism, specific price index should be estimated. However, with the assumption that this price would vary directly with the general price level in the economy given the diverse nature of tourism expenditure, general measure of price can serve as a proxy.

Consumer price index (CPI) reflects changes in the cost to the average consumer of acquiring basket of goods and services that may be fixed or changed at specified intervals, such as yearly. The Laspeyres formula is generally used. Apart from Ghana with index of 143 the rate of price increase in Nigeria is higher than that of other countries (Table 2.7). This is vital for a visitor that plans a revisit who must adjust his/her budget upwards. The Nigeria's GDP deflator (293) is only lower than that of Ghana and Guinea with the values of 360 and 300 respectively. All other West African countries have a lower value. The GDP implicit deflator is the ratio of GDP in current local currency to GDP in constant local currency. Inflation as measured by the CPI reflects the annual percentage change in the cost to the average consumer (tourist and non-tourist) of acquiring a basket of goods and services that may be fixed or changed at specified intervals.

Inflation in Nigeria (11.58 per cent) is lower than that of Guinea, Sierra Leone and Ghana with 18.38 per cent, 17.47 per cent and 16.52 per cent respectively. Other countries with data have lower inflation compared to Nigeria. When measured by GDP deflator, inflation in Nigeria (14.4 per cent) is higher than any other West African countries with the exemption of Guinea and Ghana with inflation rates of 38.87 per cent and 18.02 per cent respectively in 2008. Inflation as measured by the annual growth rate of the GDP implicit deflator shows the rate of price change in the economy as a whole. Expenditure of international visitors would necessarily require changing currency. The official exchange rate refers to the exchange rate determined by national authorities or to the rate determined in the legally sanctioned exchange market. It is calculated as an annual average based on monthly averages of local currency units relative to the US dollar.

The Nigerian official exchange rate of 118 in 2007 gave Nigeria a strong competitive edge over many other West African countries apart from Ghana and Liberia. Even the exchange rate of 150 at the time of writing was still competitive. This partially explains the source of the price competitiveness observed in Table 7.

Table 7. Nigeria tourism price competitiveness relative to other West African countries

Country Name	Consumer price index (base year 2005) 2008	GDP deflator, period average (LCU index 2000= 100) 2007	Inflation, consumer price index (annual per cent change) 2008	inflation, GDP deflator (annual per cent) 2008	Official exchange rate (LCU per US$, end period) 2007
Benin	113.4843	123.39	7.95	9.42	572.10
Burkina Faso	112.9804	118.89	10.66	5.06	481.04
Cape Verde	na	126.80	6.78	5.44	120.00
Cote d'Ivoire	110.9909	124.91	6.31	8.12	483.71
Gambia, The	112.3256	213.31	4.46	5.95	na
Ghana	143.1118	359.52	16.52	18.02	0.97
Guinea	118.3841	300.12	18.38	38.87	4181.73
Guinea Bissau	na	130.41	10.46	9.51	449.94
Liberia	na	209.89	Na	12.75	62.50
Mali	112.4214	129.28	9.17	13.58	626.90
Mauritania	na	198.25	7.35	na	265.60
Niger	111.4103	118.52	11.31	7.61	481.60
Nigeria	127.2717	293.31	11.58	14.40	118.00
Senegal	114.327	120.61	5.77	7.33	445.59
Sierra Leone	na	171.48	17.47	11.67	2977.60
Togo	112.1684	107.43	8.68	4.41	na

Source: African Development Indicators, 2011

Internet and communication technology: One necessary aspect of tourists' expenditure is communication either through telecommunication or internet. The estimated call and internet prices in Nigeria and other West African countries with data are illustrated in Table 8. The average rate of mobile calls in Nigeria is $0.6141 per three minutes either during the off-peak or peak periods. This is highly competitive as the rate is lower only in four countries during the off-peak, namely, Mauritania ($0.3991), Ghana ($0.422), Senegal ($0.459) and Togo ($0.5737). And during the peak period, only Mauritania ($0.4989), Ghana ($0.4544) and Senegal ($0.5737) have lower prices. With the recent development in the Nigeria telecommunication sectors, this competitiveness will be sustained for many years to come.

The three-minute call rate measures the tariff of a call from a mobile subscriber to another. The fixed telephone line is becoming less relevant in Nigeria and this explains the reason Nigeria has weak competitiveness in fixed telephone. The Nigeria mobile call competitiveness is reinforced by her cheap mobile connection charge, the cheapest in the region. The same trend of competitiveness is observed for the internet price. Price basket for internet is based on the cheapest available tariff for accessing the internet 20 hours a month (10 hours peak and 10 hours off-peak). Only four countries have cheaper internet rate than Nigeria ($25.82). These are Senegal ($10.68), Guinea ($17.78), The Gambia ($17.78) and Benin ($20.92).

Table 8. Nigeria's competitiveness of telephone and internet prices

Country Name	Mobile cellular-price of 3-minute local call (off-peak rate - US$) 2006	Mobile cellular-price of 3-minute local call (peak rate - US$) 2006	Mobile cellular connection charge (current US$) 2006	Price basket for Internet (current US$ per month) 2006	Telephone average cost of call to US (US$ per three minutes) 2007
Benin	0.9562	0.9562	9.5622	20.92	0.0313
Burkina Faso	0.8702	1.0308	114.75	91.41	0.2087
Cape Verde	0.9102	1.2174	46.018	40.72	na
Cote d'Ivoire	1.1283	2.2567	19.124	67.71	0.3756
Ghana	0.422	0.4544	7.0331	22.63	0.1603
Mali	0.8453	0.851	57.373	52.88	0.2217
Mauritania	0.3991	0.4989	11.086	102.43	0.1565
Niger	0.6885	0.918	Na	50.29	0.1431
Nigeria	0.6141	0.6141	3.8865	25.82	0.2066
Senegal	0.459	0.5737	40.161	10.68	na
Sierra Leone	0.8913	1.0331	Na	45.11	0.1878
Togo	0.5737	0.7172	17.212	na	na

Source: African Development Indicators, 2011

Health risk: Health risk is one of the factors that militate against international demand for tourism (Giacomelli, 2006a; Naudé and Saayman, 2004). The earlier analysis of TTCI competitiveness ranking revealed that Nigeria is not competitive in terms of health/hygiene. This is confirmed by some indicators of tuberculosis and HIV/AIDS in Table 9. In 2008, Nigeria had about 303 incidences of tuberculosis per 100,000 people. This is on the high side together with Sierra Leone, Mauritania, Mali and Cote d'Ivoire which witnessed 608, 324, 322 and 410 incidences per 100,000 people. Only 20.43 per cent of the tuberculosis cases were detected under Directly Observed Treatments (DOTs) in Nigeria. Incidence of tuberculosis is the estimated number of new pulmonary, smear positive, and extra-pulmonary tuberculosis cases. DOTs detection rate is the percentage of estimated new infectious tuberculosis cases detected under the DOTs, short course case detection and treatment strategy. HIV on the other hand is one of the widely spread diseases in developed, underdeveloped and developing nations. On average, Nigeria has not less than 3.1 per cent of population within the age bracket of 14 and 49 years living with this dreadful disease (HIV). The range of this estimate is from 3.8 per cent to 2.3 per cent annually. It must be noted that apart from Nigeria, Cote d'Ivoire and Togo are two other countries in West Africa with high rate of HIV infection.

As would be expected, Nigeria had the highest number of people living with HIV in 2007 as the total number of People Living with HIV/AIDS (PLWHA) ranges from 2 to 3.2 million with an average of 3 million. The country with the lowest number of PLWHA is The Gambia with only 8,200 people on average.

Table 9. Health risk in Nigeria and other West African countries

Country	Incidence of TB (per 100,000 people) 2008	TB cases detected under DOTS (per cent) 2006	HIV prevalence rate, adult 15-49 years (per cent; high estimate) 2007	HIV prevalence rate, adult 15-49 years (per cent; low estimate) 2007	People living with HIV/AIDS, total (high estimate) 2007	People living with HIV/AIDS, total (low estimate) 2007
Benin	91.76467	86.03	1.4	1.1	73000	58000
Burkina Faso	220.3111	18.77	1.9	1.4	160000	110000
Cape Verde	149.1671	36.96	Na	na	Na	na
Cote d'Ivoire	409.6029	38.49	4.5	3.2	550000	400000
Gambia	263.4386	65.42	1.3	0.4	13000	3700
Ghana	201.7617	38.20	2.2	1.7	290000	230000
Guinea	302.2223	54.65	2.2	1.3	110000	73000
Guinea-Bissau	224.1545	67.58	2.6	1.3	23000	11000
Liberia	282.5432	69.26	2	1.4	41000	29000
Mali	321.7027	23.23	1.8	1.2	120000	88000
Mauritania	323.8815	35.67	1.5	0.5	26000	8300
Niger	177.752	51.01	1.1	0.6	85000	44000
Nigeria	302.6706	20.43	3.8	2.3	3200000	2000000
Senegal	276.8528	48.78	1.4	0.7	96000	47000
Sierra Leone	608.2654	34.66	2.4	1.3	76000	42000
Togo	437.589	18.73	4.1	2.7	150000	110000

Source: African Development Indicators, 2011

CHAPTER THREE

LITERATURE REVIEW

This chapter concentrates on the review of literature in terms of the conceptual issue, theoretical review, methodological review, as well as empirical review, relevant to the focus of this thesis.

3.1. Conceptual review

This section focuses on the notion of tourism by reviewing literature on the definition of tourism and tourist.

3.1.1. Definition of tourism

Literature on definition of tourism can be grouped into three. First are those associated with the popular usage of the term (Smith and Collins, 1988), second are those used to facilitate statistical measurement (WTO, 1981), while the third are those used to articulate its conceptual domain (Theobald, 2004). These definitions tend to share key dimensions. The most prevalent of these is a spatial dimension. Tourism involves the travel of non-residents (Murphy, 1985). To be considered a tourist, individual must leave and then eventually return to their home. Although the travel of an individual does not constitute tourism in and of itself, it is one of the necessary conditions. Various qualifiers have been placed on this dimension including a range of minimum travel distances, but the fundamental concept of travel is universal.

The second most common dimension involves the temporal characteristics associated with tourism. Central to this dimension is the requirement that the trip be characterised by a

temporary stay away from home for at least one night (Leiper, 1981). Definitions developed for statistical purposes often distinguish between excursionists who visit a destination for less than 24 hours and tourists who visit a destination for 24 hours or more (UNWTO, 1981). The term visitor is often used for both groups.

The third dimension of tourism, which is used in this thesis, definition considers the purpose or the activities engaged in during travel and it is within this dimension that many subfields of tourism find their genesis (like eco-tourism, urban tourism and heritage tourism). Of the three dimensions, this is perhaps the one characterised by the broadest range of views. For example, dictionary interpretations of tourists tend to focus on holiday pursuits as the primary travel activity (Smith and Collins, 1988), whereas definitions developed for statistical and academic purposes tend to include business activities as well (Murphy, 1985). Specific reference is made to sport in the tourism definition of the UNWTO in 1981, which lists it as a subset of holiday activities.

Tourism is a composite of activities, facilities, services and industries that deliver a travel experience, that is, transportation, accommodation, eating and drinking establishments, entertainment, recreation, historical and cultural experiences, destination attractions, shopping and other services available to travelers. According to the UNWTO, international tourism encompasses the activities of visitors who make temporary visits across international borders, outside their usual place of work and residence, and stay for more than 24 hours. The primary purposes of travelling can be for holiday, visiting friends and relatives, business, convention or meetings, health, education, religion or sport. Tourism thus involves: Short term travel, at least for one day and not more than one year; and expenditure on transport, accommodation, purchases and services, from the period visitor leaves home, until he/she returns.

3.1.2. Defining tourist

Cohen (1974) reviewed the literature which attempted to define a ‘tourist’. He identified six major dimensions; permanency, voluntariness, direction, distance, recurrence and purpose. He defines a tourist as: a voluntary, temporary, traveller, travelling with the expectation of pleasure from the novelty and change experienced on a relatively long and non-recurrent round-trip. According to Mathieson and Wall (1989), this definition has the merits of being

concise and comprehensive but for the collection of data, it is necessary to be more explicit and precise time and distance constraints must be established. In 1963, the United Nations sponsored a conference on travel and tourism in Rome. The conference recommended definitions of 'visitor' and 'tourist' in compiling international statistics. For statistical purposes the term 'visitor' describes any person visiting a country other than that in which he has his usual place of residence, for any reason other than following an occupation remunerated from within the country visited (Mathieson and Wall, 1989). In 1968 IUOTO[10] (now the UNWTO) approved the 1963 definition and has encouraged countries to use it. Leiper (1979) notes that one consequence of this definition is that statistical data on international tourists include trips for purposes beyond the popular use of the word. For example, most people do not consider business trips as tourism.

Other terms which require definition are 'international tourist', 'domestic tourist' and 'destination area'. International tourists include those individuals travelling across international border and who remain away from home for at least 24 hours. Domestic tourists are individuals travelling within their country but stay away from home for at least 24 hours. Statistical definitions of the tourist in a domestic setting (travelling within the country of residence) have varied among countries and regions, but have generally included three major elements: distance, purpose of travel and length of stay. A 'destination area' is a place having characteristics known to a sufficient number of potential visitors to justify its consideration as an entity, attracting travellers to itself, independent of the attractions of other locations (Mathieson and Wall, 1989).

3.2. Theoretical review

The neoclassical (Marshallian) consumption theory has so far represented the theoretical cornerstone of empirical tourism research. Notably, there is need to consider whether international tourism, a trade in service, requires different theoretical views from trade in goods.

[10] IUOTO means International Union of Official Travel Organisations, the predecessor to the World Tourism Organisation.

3.2.1. International demand for services

The main difference between trade in services and trade in goods is that consumption and production must be simultaneous for most services. As services cannot be stored, producer and consumer are required or expected to be present, at the same time and possibly same location, for a service transaction to take place. Despite the differences between trade in goods and services, many authors conclude that the differences do not necessitate change in the normative implications of existing theoretical approaches to trade theories and that gains from trade in services can be understood using the same theoretical frameworks as those used for trade in goods.

According to Hsueh *et al*. (2000), the theory of international demand for goods can be applied to explain the international demand for services. The theory of demand for goods draws from traditional consumer demand theory which maximises utility that depend mainly on income and relative prices (Barns, 2003). Both trade in goods and services have been tested by the gravity model which can be derived from different standard trade theory including Ricardian, Hecksher-Ohlin and the monopolistic competition models (Helpman and Krugman, 1985; Deardorff, 1998; Eaton and Kortum, 2002). Thus, in principle, any theory of international trade should cover goods and services and there is no need to separate trade in goods from trade in services. Any theory of international trade like the traditional Ricardian, Heckseher Ohlin and the new trade theories emphasising the economy of scale and imperfect competition should cover goods and services.

3.2.2. The Neoclassical demand theory

Literature on tourism demand usually assumes traditional neoclassical consumer demand theory and concludes that tourism demand depends mainly on price and income variables. It is a regular practice in literature to assume this without explicitly restating the theoretical framework. According to Moscati (2004), the origin of the traditional neoclassical consumer (demand) theory can be traced to the marginalist value theories of Menger in 1871, Jevons in 1871 and Walras in 1874.

The traditional neoclassical demand theory is not applicable to quality goods in which consumer demand depends on the characteristics of the goods. As a result of this, there are alternative theories developed in an attempt to analyse quality-based goods. This class of theory includes hedonic model, Rosen's model, Houthakker-Thiel approach, Ladd-Zober model, Becker's household production approach, Dixit-Stiglitz model, Chamberlin's monopolistic model, and Lancaster's model. The Lancaster's model has been recommended for tourism demand studies. According to the Lancaster's theory (as adapted to the tourism problem), countries of destination (henceforth destinations) provide a homogeneous tourism good. The tourism good is characterised by a certain price. Price consists of two components: stay and transport. Assuming 'separability' of the allocation process, individuals coming from a given country of origin (henceforth origin) allocate their tourism disposable income (disposable income devoted to tourism expenditure) according to destinations' price competitiveness (Giacomelli, 2006a).

A direct challenge of the neoclassical demand model comes from authors like Rugg (1973), Morley (1992), and Papatheodorou (2001). According to Papatheodourou (op. cit.) the application of the neoclassical demand theory reveals setbacks, as it ignores the peculiarities of the product. In other words, the homogeneity assumption prevents neoclassical researchers from explaining tourism choice with destinations' features other than price. The neglect of important tourism determinants casts doubts on the usefulness of the traditional demand theory for tourism demand analysis (Athiyaman, 1997). An indirect challenge to the Marshallian approach relates to experience tourism good quality. Interpreting tourism as experience good means that individual can evaluate the utility arising from tourism products just after the products have been consumed (Costa and Manente, 2000). In other words, tourism choice is an uncertain process and destinations characterised by high levels of uncertainty could fail in their ability to attract tourists.

3.2.3. Lancaster's demand theory

An alternative theory to the popular traditional consumer theory can be traced to Strotz (1957) who used utility tree to show that a particular commodity is associated with a particular type of utility. Gorman (1959) considers separation of utility function and its aggregation. Lancaster (1966) extends and harmonises this alternative reasoning into a formal consumer theory based on assumption that consumers derive utility from the properties or

characteristics of commodities rather than directly from the commodities. The resulting alternative theory, used in this thesis, is what is referred to as Lancaster's consumer theory. This theory assumes that commodities are inputs to the consumers' consumption activity which generate collection of characteristics as output. A particular commodity is assumed to have more than one characteristic while many characteristics are shared by more than one commodity. It also assumes that combination of goods may possess different characteristics from individual commodities. Some distinguishing features of the Lancaster's consumer theory in comparison to the traditional consumer theory are summarised in Table 10.

Lancaster's theory of consumer demand is the dominant theory of the economics of quality. It is probably the most popular theory of consumer choice of quality. The theory was presented in two papers and two books (Lancaster 1966, 1971, 1975, 1979). According to Bowbrick (1994), Lancaster's popularity appears to derive from the points that:

- The analysis is presented rigorously, based on assumptions which are usually made explicit.

- The theory is clearly presented.

- The theory uses objective characteristics rather than perceptions and beliefs. This gives the promise of "hard" results. It is also cheaper to work with easily measured characteristics than it is to identify and measure consumer perceptions.

Lancaster's theory originated from the observation that traditional demand theory was ignoring highly pertinent and obvious information, the properties of goods and he proposed to concentrate on this aspect. After all, one would expect information on the properties of goods to be more easily obtainable and to be more universal in character, than properties of individual's preference orderings. Lancaster uses the term ''consumption technology'' to explain the relationship between the products purchased and the characteristics obtained from them. Lancaster's analysis is carried out in characteristics space, rather than in goods space, that is preferences and prices are plotted on surfaces with characteristics as axes unlike traditional analysis with goods as axes.

Table 10. Lancaster's consumer theory versus traditional consumer theory

Lancaster's consumer theory	Traditional consumer theory
Characteristic determines the relationship between good. For example, wood will not be a close substitute for bread, since characteristics are dissimilar. And a red Buick will be a close substitute for a gray Buick.	No reason except 'tastes' why wood and bread should not be close substitutes and why a red Buick should be any closer substitute to gray Buick than wood and bread.
Relationship between goods is frequently intrinsic and objective, and will be observed in many societies under many market conditions. For example, substitution between butter and margarine.	No reason why close substitutes in one context should be close substitutes in another.
A good may be displaced from the market by new goods or by price changes. A monetary asset may cease to be on the efficiency frontier, and will disappear from the economy.	No presumption that goods will be completely displaced or disappeared from the economy.
The labour-leisure choice may have a marked occupational pattern.	Labour-leisure choice determined solely by individual preferences; no pattern, other than between individuals would be predicted.
An individual is completely unaffected by price changes that leave unchanged the portion of the efficiency frontier on which his choice rests.	An individual is affected by changes in all prices.

Source: Lancaster (1966)

It is assumed that all characteristics are quantitative and objectively measurable. This is an assumption on how individuals perceive the characteristics as well as on its being objectively measurable. It is assumed that if one has x times as much of a good, one has x times as much of each characteristic. Given quantities of the two goods x_j and x_k the total amount of the ith characteristic possessed by the goods collection (x_j, x_k) is the sum of the amounts of the characteristics possessed by x_j x_k separately (Lancaster, 1971). Lancaster's assumptions on preferences simply carry over traditional preference theory applying it to collections of characteristics instead of collections of goods. These assumptions are that of transitivity and completeness, continuity, strict convexity, non-satiation and positively desired characteristics.

Lancaster (op. cit.) argues that it is not possible to base any aggregation on the demand of a single representative consumer, as in traditional theory, for the situation is not approximated by a single customer buying different quantities of a single good at different incomes and prices, rather, it is one of different consumers each buying different goods and possibly changing the goods bought as price and income changes. Accordingly, he argues there should be at least one representative customer for each facet, vertex and edge of the characteristics rays.

This thesis uses the Lancaster's theory as formalised for tourism demand by Giacomelli (2006a). To consider the effects of destinations' heterogeneity, Giacomelli analyses tourism choice process in the light of Lancaster's consumer theory. To consider the effects of risk arising from the experience tourism good quality, the same process was analysed in the light of the expected utility theory of Gravelle and Rees (2004). Most of the authors criticising the neoclassical homogeneity assumption, see in Lancaster's demand theory an effective tool to gain useful insights into the tourism choice process.

3.2.4. Other models and their characteristics

i. Hedonic model

The oldest form of approaches to product quality and still one of the popular approaches used is the hedonic approach where the prices of goods at market level and their component

characteristics are observed and a regression is run to show the relationship between prices and characteristics. On the basis of this, predictions are made from the price of a product with a certain characteristic. A major advantage of the hedonic approach is that it works directly with easily observable market prices and characteristics. It neither requires observations of individual buyers nor a process of aggregation from the individual buyer to market demand. Hedonic methods have been used in many studies related to price of houses or agricultural land in which only a small proportion of the stock is sold in one year. There is an enormous hidden reservation demand in these markets as most farmers want to keep their land and most house owners want to keep their houses. Hedonic models are generally confined to goods within a single group. They usually refer to units of a good, to a package or to a fixed amount without linearity and additive assumptions.

ii. Rosen's model

Rosen's (1974) model rests on the assumptions that: Goods are valued for their utility-bearing characteristics; characteristics are objective and are perceived in the same way by all consumers though they may be valued differently; goods in a group are defined uniquely by their characteristic mix; goods and characteristics are valued positively; characteristics are positively priced; linearity is assumed but not additivity. Broadly speaking, Lancaster is primarily concerned with comparison of individuals' demand, market demand being mentioned but not analysed, while Rosen's (op. cit.) main objective is to work from assumptions about individual producers and consumers to market prices. The argument is that the consumer attempts to maximise his/her total utility subject to a budget constraint and does this when the ratios between the marginal utilities from any pair of characteristics are equal to the ratios between their marginal prices. Rosen (op. cit.) develops a bid function, resembling an indifference curve, showing the price the consumer is willing to pay for alternative bundles of characteristics. A similar supply model is constructed, with an offer curve joining combinations of characteristics that a given producer will supply for a given sum of money. Where the offer curve is tangential to the bid curve a bargain is struck. From the offer prices of different producers and the bid price of different consumers an equilibrium price is reached for each characteristic mix. Rosen (op. cit.) presents his paper as a structured interpretation of the hedonic method. It is sometimes stated that He provides the theoretical basis for hedonic analysis (Steenkamp 1989, Earl 1986, Ratchford 1979).

iii. Houthakker-Thiel approach

Thiel (1952) and Houthakker (1952) present an approach which analyses a situation where someone decides first on what group of goods someone wants to buy then what good is within that group. Thiel admits that his analysis is a highly simplified one but sometimes it has a certain degree of reality. The theory uses a homogeneous good within a group of goods. The buyer decides, first, whether to buy in the group and then which good to buy in this group. Clearly, the result of the analysis depends on whether, for example, butter and margarine are seen as goods in the same group, so Houthakker and Thiel give some attention to what a group is. Thiel explains that characteristics are positively valued and their price is related to the cost of production. By implication, a characteristic in one group of goods is not equivalent to the same characteristics in another, sugar in sweets or in puddings for instance.

iv. Ladd-Zober model

Ladd and Zober (1977), like Lancaster, assume everybody sees the same objective characteristics, that a consumer has a fixed income that can be spent on products and that it is spent to maximize utility. They assume infinitely divisible products. They are concerned with consumers' reactions to objective measurable characteristics, not to perceptions or beliefs which may or may not affect sales. In contrast to the Lancaster theory, it is assumed that the consumer consumes products by consuming services (rather than characteristics) provided by the products.

v. Becker's household production approach

Historically, Becker (1965), Muth (1966) and Lancaster (1966) are part of the founders of the ''new'' theory of consumption. Becker's particular contribution to the ''new'' theory of consumption was his emphasis on time allocation and the wage rate as the alternative cost of time used in household production. This led him to several interesting suggestions for application of the approach, although he did not pursue the empirical implications for the properties of demand functions in a rigorous way.

vi. Dixit-Stiglitz model

Dixit and Stiglitz (1977) tackle a welfare economic problem by stating that the basic issue concerning production in welfare economies is whether a market solution will yield the socially optimum kinds and qualities of commodities. They are mainly concerned with scale economies. They use indifference curves similar to those used by Lancaster, positive costs of characteristics and economies of scale in producing a variant. Unlike Lancaster they use a representative consumer. Lancaster (1990) cites Spence (1976) and Dixit and Stiglitz (1977) as having a single representative consumer who buys some of each product, unlike his own approach. Market demand is then a matter of aggregating this consumer's purchases.

vii. Chamberlin's monopolistic model

Chamberlin's original work is readily applicable to a large number of real markets, and Chamberlin's (1953) model is a rich analysis of quality problems in the real world, an analysis which has been largely ignored, possibly because it raises points not normally incorporated into generalised mathematical models. The new models, sometimes referred to as neo-Chamberlinean, can only have an application if their assumptions on individual consumer demand and individual producer supply have some realism. In that sense the models must be considered as users of basic consumption theory, rather than theory on its own right. Lancaster (1990) uses product variety in a way quite different from that of Chamberlin, rather like Chamberlin's product differentiation.

3.3. Methodological review

This subsection contains the review of various methodologies that have been used by researchers in measuring, modelling and estimating determinants of international tourism demand. It includes the measures of dependent and independent variables, econometric modelling of international tourism demand and its specification.

3.3.1. Methods of evaluating tourism demand

The main methods of evaluating tourism demand derived from the theoretical discussion of the last section can be divided into single and system equations models. Tourism demand has been analysed for groups of countries, individual countries or states; it has also been disaggregated by type of visits (such as holiday and business tourism); by tourists' characteristics (such as nationality, age, gender and socio-economic groups); by type of tourism products (sport tourism, ecotourism) and for specific components of tourism products (such as accommodation and transportation) (Stabler *et al*., 2010).

The single equation method dominates the tourism demand research during the first 30 years of tourism research (since the 1960s). Most of the models aimed at estimating aggregate tourism figures for a given destination, and without theoretical justification for the functional form adopted (Lim 1997, Durbarry and Sinclair 2003).

Starting from the 90s, an advanced class of neoclassical models made its appearance in pursuit of strong consistence between empirical models and neoclassical theory and shift of analytical focus from destinations to origins. Tourism figures for a given destination could be consistently estimated by estimating, for each origin, the number of individuals who choose that destination as their preferred country. Such awareness produced a consequent shift from single equation to system of equations models. Empirical models' functional form was often justified by various theoretical demand systems like the Linear Expenditure Demand System (LEDS) (Carraro and Manente 1994; Smeral and Witt 1996), and the Almost Ideal Demand System (AIDS) (Divisekera 2003; Durbarry and Sinclear 2003).

Quantitative studies on tourism demand analysis can be divided into two groups. The first focuses on time series modelling approaches while the second concentrates on causal techniques. The time series models extrapolate historic trends of tourism demand into the future without considering the underlining causes on the trends. Another limitation of these models is that they are not based on any theory that underlines tourist's decision making process. On the other hand, causal models are carefully constructed based on economic theory and pay a particular attention to the factors that influence tourism demand. Studies

published between the 1960's and early 1990 mainly followed the traditional regression approach, given that the models were specified in static form with limited diagnostic statistics being reported. In the mid 1990's, dynamic specifications such as the autoregressive distributed lag model (ADML) and error correction model (ECM) began to appear in the tourism literature (Song and Witt, 2006).

Early researches on tourism concentrate on static specifications based on AIDS. In purely static specifications such as the orthodox AIDS approach, consumers are assumed to adjust perfectly and instantaneously to changes in their demand determinants. Tourism demand has traditionally been modelled using various approaches, including structural equations and time series techniques. These have been able to forecast changes in the number of tourists over time (Papatheodorou, 1999; De Mello, Pack and Sinclair, 2002). In a recent review to identify the frontier of research methodology in relation to modelling and forecasting of tourism demand, Song and Li (2008) observe increased application of advanced time series and econometric methodologies in recent studies than earlier studies after comparing the recent research trend with the earlier studies conducted between 1960 and 2000 as reviewed in Li, Song and Witt (2005). The earlier studies between 1960 and 2000 lack the use of modern econometric techniques and test like error correction mechanism, generalised autoregressive conditional heteroskedastic model, exponential smoothing, fuzzy time series and genetic algorithm which are the feature of recent studies. Most of these studies are preoccupied with forecasting rather than modelling tourism demand.

Morley (1997) uses non linear diffusion type dynamic model to estimate tourist arrivals in Australia from seven major countries of origin based on importance of information flow. The study was based on the assumption that current level of tourism from origin country to destination country depends on available information about destination country. Positive information leads to higher flow while negative information leads to low flow. This is irrespective of whether the information is deliberately sought for or randomly encountered. Based on a three-stage budgeting process, Li, Song and Witt (2006) compared fixed parameter Linear Almost Ideal Demand System (LAIDS) model with Time Varying Parameter (TVP)-LAIDS. Given that LAIDS is a system demand model, they were not able to obtain Kalman-filter-based simultaneous estimation of the TVP-LAIDS as it consumes many degrees of freedom. Nonetheless, they were able to estimate unrestricted model

equation by equation for the long run (TVP-LR-LAIDS) and the short run (TVP-EC-LAIDS) versions.

3.3.2. Measures of International Tourism Demand

International tourism demand can be defined as the amount of a set of foreign tourist products that consumers are willing to acquire during a specific period of time, and under certain conditions controlled by the explanatory factors used in demand theory (Song and Witt, 2000). In the econometric modelling of international tourism demand, there are no standard measures of international tourism flows universally acceptable. A number of studies have used different proxies for international tourism demand. These include: international tourist expenditure/receipts, international tourist arrivals/departures, travel export/import, the number of international tourist-nights spent at tourist accommodation and average length of stay (Witt and Witt, 1995; Crouch and Louviére, 2000; Song and Witt, 2000). Notably, international tourist arrivals/departures have been the most frequently used proxy for international tourist demand (Lim, 1997). According to Davies and Mangan (1992), an increased length of stay allow tourists to undertake a larger number of activities, which affect their overall spending, sense of affiliation and satisfaction. Therefore, several authors consider length of stay an important market segmentation variable in estimating the determinants of tourist spending (Davies and Mangan, 1992; Mok and Iverson, 2000). The use of tourism arrival as dependent variable is common in the literature. In a review of empirical tourism studies between 1966 and 1992, Witt and Witt (1995) observe that the most common dependent variables are number of tourists (measured by arrivals) and tourists' expenditure.

The tourism demand literature shows there are several measurements for international tourism demand such as: the number of the tourist arrivals, the number of nights spent by tourists or the receipts from tourism. According to Song and Li (2008), the number of tourist arrivals is still the most popular measurement in tourism demand studies. The main reason for this choice has been easy availability of tourist arrivals data. The tourist arrivals include the number of visits or trips; tourist or visitor flows, the number of tourists per capita on independent travel, on package tours and by surface travel and other less frequent variables. Tourist expenditures are also frequently used to measure demand for international tourism. It

is expressed in nominal or real terms, per head of origin population and per visitor or per diem. One of the less used variables as a dependent variable is the number of nights spent at tourists' accommodation. Lim (1997) argues that number of nights spent by a tourist is superior to using other proxies because it accounts for the length of stay with friends and relatives. Studies that use length of stay show how it varies with nationality, age, occupation status, repeat visit behaviour, stage in the family life cycle and physical distance between place of origin and destination, among other variables. While these studies do find interesting results, their descriptive nature hinders formal inference tests on the causal relationships between individual socio-demographic profiles and actual trip experiences and length of stay. Recently, some authors have employed micro-econometric models to estimate the determinants of length of stay.

3.3.3. Determinants of international demand for tourism

For the independent variables, a recent survey by Song and Li (2008) shows that main factors affecting tourism demand in recent empirical studies include: income of tourist, relative tourism price between destination and origin country, substitute tourism price in competing destinations and exchange rates. Notably, Prideaux (2004) lists factors that affect tourism flow to include price, exchange rate, national income, cost of utilities (communication, energy, water, financial services, domestic transport, and tariff protection), destination image, personal financial capability to travel, personal preferences, government regulations and risk factors (political tension, health epidemics, concern for personal safety and fear of crime). The most common variables are income and prices as predicted by the traditional consumer theory.

Conceptually, the larger the real per capita income of a country, the more likely its citizens can afford to purchase travel services abroad, ceteris paribus. Growth in real incomes provides consumers with increased spending power. In examining the relationship between income and tourism demand, it seems reasonable to suggest, that once one achieves a certain level of income, the income elasticity will increase initially but then, it will remain approximately constant for a range of per capita income. Ultimately, it will decrease as it is unlikely that tourism's share of expenditure out of GNP would grow indefinitely. In tandem with this, Barry and O'Hagan (1972) have addressed the concept of a saturation effect. They base it on the hypothesis that, after a certain point, the amount of utility accruing to an

individual from a holiday may decline as the number of tourists enjoying utility from the same holiday increases. A vast majority of studies have included income as an explanatory variable in tourism demand models. Some studies have used total national disposable income (Bond and Ladman, 1972; Oliver, 1971). Artus (1970) derive an index from real disposable income whereas, Uysal and Crompton (1985) use GNP per capita data.

The effect of price changes is more complex in tourism than the effects of changes in income. It is not just destination holiday prices that are important but also, relative price differences between the destination and the generating country. Basically, there are three elements constituting the price of tourism: the cost of travel to the destination; the exchange rate between the tourist's country of origin and that of the destination country and the cost of goods and services incurred after arrival. Gerakis (1966) posits that the effects of these price changes are short term whereas Barry and O'Hagan (1972) view the effects to be long-term, on the basis that, reputations for expensiveness or cheapness passed on by word-of-mouth are developed over a number of years, for example, the reputed cheapness of Greece and expensiveness of Paris.

Defining tourism prices is very difficult, given that, the cost of tourism is a function of the total mix of goods and services consumed by each tourist. However, price indices for tourists simply do not exist (Witt and Witt 1992). Edwards (1988) emphasises the point that no country has an adequate price series representing costs to tourists. Most authors have used the CPI or the retail price index as proxy for the cost of tourism (Little, 1980; Loeb, 1982; Witt and Martin, 1987). Nonetheless, these authors complain about the fact that there is no better measure. Notably, most authors who have used the CPI as a proxy would accept the argument that the mix of goods and services consumed by tourists is not very different from the mix constituting the CPI and that, the changes in the CPI reasonably reflect the changes in the prices of goods and services consumed.

Some countries have attempted to build a price series of hotel charges. Observably, such price series are limited because they relate to nominal rates and not to the discounted rates which tour operators negotiate. Such discounts vary from year to year usually in accordance with the expected demand-supply balances. A weighted average one-directional airfare has been used as a proxy for price by Bond and Ladman (1972) but the authors do not actually give their reasoning as to why the cost of travel would be appropriate to reflect the cost of

tourism. Witt and Martin (1987) have shown that the CPI is an appropriate proxy for the cost of tourism within the context of international tourism demand models. A number of studies include a price variable in the form of cost of tourism in the destination relative to the cost of tourism in the origin (Artus, 1970; Barry and O'Hagan, 1972; Kliman, 1981; Uysal and Crompton, 1985 and Witt, 1980). The consequent implication/assumption from this approach is that the substitute for a particular foreign holiday is domestic tourism.

Most authors make reference to the cost of transport as an important determinant of tourism flows but have typically excluded the travel cost variable from the model. Uysal and Crompton (1985) summarise the usual explanations for omitting transportation costs from tourism demand models to include: insufficient data; anticipated problems with multicollinearity; difficulty in identifying the appropriate mode of transport cost; lack of statistically significant results in studies where it is included; and the reluctance to lose another degree of freedom in estimation. Jud (1974) used distance as a proxy for the cost of travel. This approach is questionable on the basis that only in cross-sectional models where prices are held constant at a given moment can distance serve as an index of cost and even then, fares and distance do not move exactly in step. Therefore, the coefficient of the distance variable cannot sufficiently represent a measure of responsiveness to the cost of transport. Bond and Ladman (1972) used a weighted average one-directional air fare cost as a proxy of how the cost of a whole trip might vary through time. Witt (1980) includes travel time in his model.

Coshall (2000) identifies other variables that explain international tourism flows to include many financial, perceptual, cultural, social and environmental factors. Lim (1997) summarises some of the variables used in the analysis of tourism demand since the 1960s. Various independent variables are used and the number of independent variables ranges from one to nine. The most popular variable was income used by 84per cent of those studies. Income influences the ability to pay for overseas' travel and proxies used for income include nominal or real per capita personal, disposable or national income or GDP and GNP. Other important variables identified by Lim (1997) are: The relative prices of goods and services purchased by tourists in chosen destinations, compared with the origin and competing destinations as measured by the CPI ratio (73per cent); Transportation cost, which refers to the cost of round-trip travel between the destination and the origin country (55per cent); Dynamics are often included to account for lagged effects (26per cent); Exchange rate

between the currencies of the destination and origin country (25per cent); Trends, which capture secular changes in tourist taste (25per cent); Competing destinations/goods, which lead to substitution when costs associated with travel and tourism increase (15per cent); Seasonal factors, often captured in dummy variables (14per cent); Marketing expenditures to promote the country as a destination (7per cent); Migration and ethnic factors, which captures tourists visiting friends or relatives (5per cent); Business trade/travel, as measured by proxies such as trade, direct foreign investment and capital flows (5per cent); Economic activity indicators, such as unemployment and income distribution (3per cent); Some authors include qualitative factors, such as tourists' attributed household size, population in the origin, trip motive or frequency, destination attractiveness, events at the destination (60per cent); and other factors, such as supply/capacity constraints on tourism accommodation, exchange rate reforms or foreign currency restrictions, cross price elasticity of vacation goods and the average propensity to consume tourism goods (27per cent).

Some studies argue that the extent of demand for tourism services from any origin is obviously related to the actual size of the population, the amount of potential customers in a market to buy that good. In general, demand for foreign tourism from a country with a relatively small population would rarely approximate to that of a country with a large population even if the propensity to travel abroad is higher in the small country. Bond and Ladman (1972) allow for the impact of population by using it as a separate explanatory variable. Their study confirmed that population proved to be a significant variable in a number of cases. Laber (1969) estimates a demand model using three variables and then, multiplies each of them by the population figures. Thus, population does not actually appear as a separate explanatory variable in his econometric model.

One would expect terrorist attacks to greatly impact choices made by consumers, as the perceived risk of travelling in a relatively dangerous country would weigh heavily on considerations of utility. Hence, consumers may choose alternative destinations less vulnerable to terrorism. Consequently, some researchers have tried to estimate the likelihood of tourists'attack on tourism. To proxy for health risk, Naudé and Saayman (2004) use the prevalence of malaria as an explanatory variable claiming that it has been identified as a health risk that lowers tourism by Gallup and Sachs (2000).

3.3.4. Empirical modeling and estimation of international tourism demand

Naudé and Saayman (2005) model tourism demand in Africa as a two-level utility function by the following optimisation problem:

Maximise

$$U_i(q_t \mid q_{t-1}) = \prod_{j=1}^{m} (q_{jt} - k_{jt})^{\delta_j}, \sum_{j=1}^{m} \delta_j = 1 \quad (1)$$

Subject to

$$\sum_j p_{jt} q_{jt} = e_t$$

In equation 1, p_j is the price of tourism produced in African country j; $k_{jt} = y_{jt} + \gamma_j q_{jt-1}$; y_{jt} is positive and represents the minimum consumption requirement in period t; $\gamma_j q_{jt-1}$ is the consumption based on past consumption; q_{ij} is demand for international tourism by origin i for African destination j; e_t is past tourism consumption expenditures proxy by incomes.

Tsounta (2008) examines the determinants of tourism demand in the Eastern Caribbean Currency Union by estimating the demand functions in a panel setting using annual data between 1979 and 2005. He modeled tourism demand as follows:

$$\begin{aligned} \ln \mathrm{TD}_{it} = {} & \beta_{0i} + \beta_1 \ln y_{it} + \beta_2 \ln p_{it} + \beta_3 \ln p^*_{it} + \beta_4 \ln \mathrm{FDI}_{it} + \beta_5 \ln \mathrm{OIL}_t + \\ & \beta_6 \ln(\mathrm{airline..s}_{it}) + \sum_{j=1}^{n} \beta_{6+j} d_{ijt} + \sum_{k=-m_i}^{M_i} \beta_k \Delta \ln(y_{it-k}) + \sum_{k=-m_2}^{M_2} \beta_k \Delta \ln(p_{it-k}) + \\ & \sum_{k=-m_3}^{M_3} \beta_k \Delta \ln(p^*_{it-k}) + \sum_{k=-m_4}^{M_4} \beta_k \Delta \ln(FDI_{it-k}) + \sum_{k=-m_5}^{M_5} \beta_k \Delta \ln(OIL_{IT-K}) + v_{it} \end{aligned}$$

(2)

In (2), t=1,..,27 (1979 to 2005) and i=1,...,6; Ms' represent the number of lead and lags; TD_{it} is the number of tourist arrivals in island i at time t; y_{it} is the weighted average of the real GDP per capita of source countries related to country i at time t, with weight being the tourist arrivals shares from each country; p^*_{it} and p_{it} are the customer-based and competitor-based real effective exchange rates, respectively; FDI_{it} is the foreign direct investment inflow to country i at time t (expressed in US dollar terms); OIL_{it} is the average oil price at time t; $\mathrm{airlines}_{it}$ is the number of airlines serving destination i at time t; d_{ijt} is a dummy variable to

capture the wars in Iraq in the early 1990s and 2003, and Afghanistan in 2001; the September 11, 2001 terrorist attack in the United States; and category 3 and above, hurricanes in each country; Δ denotes the first-difference operator; β_{0i} is country fixed effect; v_{it} is an error term.

Habibi, Rahim and Chin (2008) examined the long run demand for tourism in Malaysia from United Kingdom and United States using Error Correction Model and Cointegration Model on time series data from 1972 to 2006. They modelled tourism demand simply as follows:

$$TAi = fi\,(Yi\,,\ TPi,\ TCi\,) \tag{3}$$

In (3), TAi is the measure of tourist arrivals from every origin country i; Y is the real income per capita; TP is the tourism prices adjusted by exchange rate and TC is the travel cost between the origin and destination countries. Another simple formulation of tourism demand is that of Zhou, Bonham and Gangnes (2007) who estimated a Vector Error Correction Model (VECM) of tourism supply and demand in Hawaii tourism. They expressed the Marshallian demand for tourism product as:

$$D_{ij} = F(Y_i, P_i, P_j, P_j^s, Z) \tag{4}$$

In (4), D_{ij} is the tourism product demanded in destination j by consumers from origin country i; Y_i is the income of origin country i; P_i is the price of other goods and services in the origin country i; P_j is the price of tourism product in destination country j; P_j^s is the price of tourism product in competing destinations; and Z is the vector of other factors affecting tourism demand.

Onder, Candemir and Kumral (2009) examined the determinants of international tourism demand in Izmir, Turkey and modelled the international tourism demand as follows:

$$TOUR_t = \alpha + \beta_1 EXCH_t + \beta_2\ GDPOPC_t + \beta_3\, GDPPC_t + \beta_4 TRANSP_t + \varepsilon_t \tag{5}$$

In (5), $TOUR_t$ represents tourist arrivals; $EXCH_t$ is the real exchange rate; $GDPOPC_t$ is per capita GDP of the OECD countries; $GDPPC_t$ represents GDP per capita of the Izmir;

$TRANSP_t$ is the transportation public capital stock; ε_t is error term and t is time. GDP per capita of the region is used as indicators of the level of economic development.

Boopen (2006) examined the determinants of international tourists' arrivals in Mauritius with particular emphasis on the impacts of transports on tourism development. He used cointegration analysis to estimate the following tourism demand function:

TR = f (GDPH, GDPF, ROOM, XRAT, CPI, TRANS, NONTRANS) (6)

In (6), TR is the total number of tourist arrivals per annum in Mauritius; GDPH is the urbanisation and development level of a destination proxied by the income of the destination country; GDPF is the weighted average of real per capita Gross Domestic Product in countries of origin as proxy for total expenditures on tourism; ROOM is the rooms available in the country as a measure for the capacity of the tourism sector; XRAT is the nominal exchange; CPI is the relative price measured by the CPI of a destination country adjusted by the $ exchange rate; TRANS is the stock of transport infrastructure (inclusive of air, land and water transport) constructed using the perpetual inventory methodology; NONTRANS is the Non transport capital and encompasses other public capital such as communication, energy, waste water and defense.

Kareem (2007) examined demand for tourism in Africa using panel regression methods on data from 20 African countries over the period between 1995 and 2003. He modelled tourism demand as follows:

$$InTA_{it} = \alpha_{i0} + \alpha_{i1}InWY_{it} + \alpha_{i2}InCPI_{it} + \alpha_{i3}InEXC_{it} + \alpha_{i4}InCR_{it} + \alpha_{i5}POL_{it} + \alpha_{i6}InTEL_{it} + \alpha_{i7}InTA_{it-1} + \varepsilon_{it} \quad (7)$$

In (7), i = 1---20; TA is the total tourist arrivals in Africa; WY is the real world income; CPI is the exchange rate adjusted to relative prices between Africa and the rest of the world; CR is the crime rate measured by the incidence of recorded crime rate on the continent; POL is the measure of political instability; and Tel is the number of fixed and mobile telecommunication services.

Habibi, Rahim and Ramchandran (2009) examined main determinants of the international tourism flows to Malaysia using dynamic panel regression on annual data set from the 15

most important generating countries between 1995 and 2005. They modelled tourism demand as follows:

$$\ln TA_{i,t} = \beta_0 + \beta_1 \ln TA_{i,t-1} + \beta_2 \ln GDP_{i,t} + \beta_3 \ln TP_{i,t} + \beta_4 \ln TO_{i,t} + \beta_5 D_{1997} + \beta_6 D_{2003} + \lambda_t + \eta_t + \varepsilon_{it} \quad (8)$$

In (8), $TA_{i,t}$ is the number of tourists arrivals in Malaysia from country i during year t; $TA_{i,t-1}$ is the number of tourist arrivals in Malaysia from country i during the previous period; $GDP_{i,t}$ is the Gross Domestic Product in each of the origin country; $TP_{i,t}$ is the relative cost of living of tourists in Malaysia and $TO_{i,t}$ is the trade volume between Malaysia and each of the origin countries. The dependent variable, as well as the lagged dependent and the GDP variables are expressed in per capita terms. The two dummy variables (D_{1997} and D_{2003}) were included to capture the effect of the Asian financial crisis in the year 1997 and the SARS crisis in the year 2003 on tourism. D_{1997} takes the value of 1 in Malaysia for the year 1997 and 0 otherwise. D_{2003} takes the value of 1 in Malaysia for the year 2003 and 0 otherwise. The fixed effects of decomposition of the error term are λ_t , η_t and ε_{it} in which λ_t and η_t are the time and destination-specific effects. The error component ε_{it} was assumed to be serially uncorrelated with zero mean and independently distributed across destinations but heteroskedasticity across time and destinations were allowed for. Moreover, ε_{it} is assumed to be uncorrelated with the initial condition $\ln TA_{i,t}$, for t = 2,…,T, and with the individual effects of η_t for any t.

Walle (2010) examined the determinants of tourist flows in Ethiopia using panel data analysis. He specified the tourism demand model as follows:

$$TA_{it} = \beta_1 TA_{it-1} + \beta_2 PCI_{it} + \beta_3 EXR_{it} + \beta_4 DIST_i + \beta_5 CPI_{it} + \beta_6 Kenya_t + \beta_7 POP_{it} + \beta_8 Urban_t + \beta_9 Road_t + \beta_{10} Internet_t + \beta_{11} Africa + \beta_{12} Year1 + \beta_{13} Year2 + \beta_{14} Year3 + \beta_{15} Year4 + \beta_{16} Year5 + \beta_{16} Year6 + \varepsilon_{it} \quad (9)$$

In (9), TA_{it} is the number of tourist arrivals from country i in year t; TA_{it-1} is the number of tourist arrivals from country i in year t-1; PCI_{it} is the per capita income of the sending country i in year t; EXR_{it} is the exchange rate between the currencies of Ethiopia and origin country i in year t; $DIST_i$ represents air distance from the capital of the origin country i to Addis

Ababa; CPI_{it} stands for the ratio of Consumers' Price Indices (CPIs) of Ethiopia and the origin country i in year t; $Kenya_t$ represents the ratio of CPIs of Ethiopia and Kenya in year t; POP_{it} stands for the total population of the sending country i in year t; $Urban_t$, $Road_t$ and $Internet_t$ represent the urbanisation rate, the length of road network in Kilometres and number of internet users in Ethiopia at time t respectively; Africa and Year denote dummy variables for the sending countries being African and six years respectively and ε_{it} is the error term.

Habibi and Rahim (2009) examined international tourism demand in Malaysia from ten source countries using the ARDL bound test approach to cointegration for quarterly time series data from 1998:Q1 to 2007: Q3. They modelled tourism demand as follows:

$$\ln TA_t = \beta_0 + \beta_1 \ln TA_{t-1} + \beta_2 \ln Y_{i,t} + \beta_3 \ln TP_{i,t} + \beta_4 \ln TC_{i,t} + \beta_5 \ln TPS_{j,t} + \beta_6 \ln TV_{j,t} + \beta_7 D03 + \varepsilon_{it} \quad (10)$$

In (10), $\ln TA_t$ and $\ln TA_{t-1}$ are logarithm of tourists' arrivals from Australia to Malaysia at time t and time t-1 respectively; $\ln Y_{i,t}$ is the logarithm of GDP in country i at time t; $\ln TP_{i,t}$ is the logarithm of tourism prices between Malaysia and country i (relative prices) at time t; $\ln TC_{i,t}$ is the logarithm of travel cost between Malaysia and country i at time t; $\ln TPS_{j,t}$ is the logarithm of tourism price in substitute destination j at time t; $\ln TV_{j,t}$ is the value of trade between Malaysia and origin country i at time t; D03 is the dummy variable with a value of 1 for the SARS crisis in 2003: Q2 and is 0 otherwise.

Garcia-Ferrer and Queralt (1997) estimated international tourism demand for Spain. They modelled the international tourism demand in Spain as follows:

$$X_{ij} = f(U_j(X, Y), Px_{ij}, Py_{ij}, R_j) \quad (11)$$

In (11), Xij is the quantity of the tourism products demanded in destination i by tourists from country j; Uj (X, Y) is the utility or the attractiveness of the tourism products demanded in country i from the other substitute countries by tourists from country j; Px_{ij} is the price of travel services for tourists from country j in destination i; Py_{ij} is the price of travel services for tourists from country j in substitute destination to i; R_j is the discretionary income for tourists from country j. According to the authors, If the absolute value of the price elasticity exceeds unity, the demand for tourism is price elastic and an increase in tourism price will

result in a more than proportionate decrease in quantity demanded, and as a result, total tourism revenue will fall.

Bashagi and Muchapondwa (2009) examined the actions that boost international tourism demand in Tanzania and modelled tourism demand as:

$$\text{Visits} = f(RP_1, RP_2, T, Y, EXR, QF) \quad (12)$$

In (12), Visits is the tourist demand for the destination country; RP_1 is a relative price index between the origin and destination country; RP_2 is a relative price index between the origin and alternative destination countries; T is the transport costs; Y is income per capita of the origin country; EXR is the currency exchange rate, measured as units of destination currency per unit of origin currency; QF are qualitative factors in the destination country. They used monthly data between 1996 and 2006 and used the ARDL approach to estimate the international tourism demand model. They specified the ARDL function as:

$$\ln VISITS_t = f(\ln VISITS_{t-1}, \ln TRP_t, \ln KRP_t, \ln OILPRICE_t, \ln INCOME_t, \ln EXR_t, DUMMY_{1998}, DUMMY_{2001}) \quad (13)$$

And the estimated equations as:

$$\ln VISITS_t = \beta_0 + \beta_1 \ln VISITS_{t-1} + \sum_{\iota=0}^{\iota=q} \beta_2 \ln TRP_{t-\iota} + \sum_{\iota=0}^{\iota=q} \beta_3 \ln KRP_{t-\iota} + \sum_{\iota=0}^{\iota=q} \beta_4 \ln OILPRICE_{t-\iota} + \sum_{\iota=0}^{\iota=q} \beta_5 \ln INCOME_{t-\iota} + \sum_{\iota=0}^{\iota=q} \beta_6 \ln EXR_{t-\iota} + \delta_1 DUMMY_{1998} + \delta_2 DUMMY_{2001} + \varepsilon_t \quad (14)$$

In (13) and (14), $VISITS_t$ and $VISIT_{t-1}$ are the number of international tourist arrivals in Tanzania in period t and period t-1 respectively; TRP is the domestic tourism price proxy by the ratio of the Tanzanian CPI to the United States CPI (US CPI was used to represent the world's cost of living); KRP is the price of tourist goods in alternative destinations (proxy by the ratio of the Kenyan CPI to the United States CPI); OILPRICE is the monthly average of world oil prices (used to proxy transport costs); INCOME is the negative value of the United States monthly unemployment rate (a proxy for international tourist income); EXR is the

exchange rate between the Tanzanian shilling and the United States dollar (a proxy for the exchange rate between Tanzania and the world); $DUMMY_{1998}$ is a dummy variable used for the 1998 United States embassy bombing in Tanzania; $DUMMY_{2001}$ is a dummy variable used for the 2001 terror attack in the United States. The two different treatments of the two dummy variables are used to capture their plausible temporary and permanent effects on international tourism demand. In the treatment that captures permanent effects, the dummy variables take the value of 1 from the period that the associated event occurs onwards while in the treatment that captures temporary effects, the dummy variables take a value of 1 for only a few months following the associated event.

Gormus and Gocer (2010) examined the socio-economic determinants of tourism demand in Turkey using gravity-based two ways random effect panel models for annual time series from 2000 to 2006 for 32 countries. They specified the international tourism demand as follows:

$$\ln TA_{it} = \alpha_i + \beta_1 \ln Y_{it} + \beta_2 \ln TV_{it} + \beta_3 \ln Dis_{it} + \beta_4 \ln AC_{it} + \beta_5 \ln RP_{it} + \beta_6 D01_{it} + \varepsilon_{it} \rightarrow \text{Model 1}$$
$$\ln TA_{it} = \alpha_i + \beta_1 \ln Y_{it} + \beta_2 \ln TV_{it} + \beta_3 \ln Dis_{it} + \beta_4 \ln AC_{it} + \beta_5 \ln RP_{it} + \beta_6 \ln Pop_{it} + \varepsilon_{it} \rightarrow \text{Model 2}$$
$$\ln TA_{it} = \alpha_i + \beta_1 \ln Y_{it} + \beta_2 \ln TV_{it} + \beta_3 \ln Dis_{it} + \beta_4 \ln AC_{it} + \beta_5 \ln RP_{it} + \beta_6 \ln ME_{it} + \varepsilon_{it} \rightarrow \text{Model 3}$$
$$\ln TA_{it} = \alpha_i + \beta_1 \ln Y_{it} + \beta_2 \ln TV_{it} + \beta_3 \ln Dis_{it} + \beta_4 \ln AC_{it} + \beta_5 \ln RP_{it} + \beta_6 \ln CPGRE_{it} + \varepsilon_{it} \rightarrow \text{Model 4}$$
$$\ln TA_{it} = \alpha_i + \beta_1 \ln Y_{it} + \beta_2 \ln TV_{it} + \beta_3 \ln Dis_{it} + \beta_4 \ln AC_{it} + \beta_5 \ln RP_{it} + \beta_6 \ln CPEGP_{it} + \varepsilon_{it} \rightarrow \text{Model 5}$$
$$\ln TA_{it} = \alpha_i + \beta_1 \ln Y_{it} + \beta_2 \ln TV_{it} + \beta_3 \ln Dis_{it} + \beta_4 \ln AC_{it} + \beta_5 \ln RP_{it} + \beta_6 \ln CPSPA_{it} + \varepsilon_{it} \rightarrow \text{Model 6} \quad (15)$$
$$\ln TA_{it} = \alpha_i + \beta_1 \ln Y_{it} + \beta_2 \ln TV_{it} + \beta_3 \ln Dis_{it} + \beta_4 \ln AC_{it} + \beta_5 \ln RP_{it} + \beta_6 \ln REER_{it} + \varepsilon_{it} \rightarrow \text{Model 7}$$
$$\ln TA_{it} = \alpha_i + \beta_1 \ln Y_{it} + \beta_2 \ln TV_{it} + \beta_3 \ln Dis_{it} + \beta_4 \ln AC_{it} + \beta_5 \ln RP_{it} + \beta_6 D02_{it} + \varepsilon_{it} \rightarrow \text{Model 8}$$
$$\ln TA_{it} = \alpha_i + \beta_1 \ln Y_{it} + \beta_2 \ln TV_{it} + \beta_3 \ln Dis_{it} + \beta_4 \ln AC_{it} + \beta_5 \ln RP_{it} + \beta_6 D03_{it} + \varepsilon_{it} \rightarrow \text{Model 9}$$
$$\ln TA_{it} = \alpha_i + \beta_1 \ln Y_{it} + \beta_2 \ln TV_{it} + \beta_3 \ln Dis_{it} + \beta_4 \ln AC_{it} + \beta_5 \ln RP_{it} + \beta_6 D04_{it} + \varepsilon_{it} \rightarrow \text{Model 10}$$
$$\ln TA_{it} = \alpha_i + \beta_1 \ln Y_{it} + \beta_2 \ln TV_{it} + \beta_3 \ln Dis_{it} + \beta_4 \ln AC_{it} + \beta_5 \ln RP_{it} + \beta_6 D05_{it} + \varepsilon_{it} \rightarrow \text{Model 11}$$

In (15), TA_{it} is tourist arrivals (or demand) from country i to Turkey at time t; Y_{it} is real income of sending country at time t; TV_{it} is trade value between sending country and Turkey at time t; Dis_{it} is distance between sending country and Turkey; AC_{it} is accommodation capacity of Turkey at time t; RP_{it} is relative price between sending country and Turkey at time t; Pop_{it} is population of sending country at time t; ME_{it} is marketing expenditure of Turkish Minister of Culture at time t; $CPGRE_{it}$ is competitive price between Turkey and Greece at time t; $CPEGP_{it}$ is competitive price between Turkey and Egypt at time t; $CPSPA_{it}$ is competitive price between Turkey and Spain at time t; $REER_{it}$ is real effective exchange rate at time t; $D01_{it}$ is dummy variable to capture official visit of Turkish President and Prime

Minister to sending country; $D02_{it}$ is dummy variable to capture February 2001 economic crisis; $D03_{it}$ is dummy variable to capture March 2003 Gulf War; $D04_{it}$ is dummy variable to capture EU member countries; $D05_{it}$ is dummy variable to capture 2001 September 11 events; ε_{it} is the error term.

The above review indicates the extent of exploration of the implications of different variables on demand for tourism. It also reveals that panel specification has become popular in recent studies.

3.4. Empirical review

There are various empirical results on the impacts of different independent variables on tourism arrivals. This section contains a discussion of empirical results on the major determinants of international tourism demand.

3.4.1. Heterogeneity of empirical results

The results of the estimated determinants of tourism demand in the empirical literature vary for origin and destinations. Naude and Saayman (2005) posit that the responsiveness of demand for international travel varies, depending upon the nationality of the tourist and the specific destination involved. Thus, demand-elasticity for international tourism varies by country-of-origin and country-of-destination. The demand for tourism is therefore a function of the tourist's country of origin, since cultural difference affect travel behaviour. Using a multilevel constant elasticity of substitution (CES) model, Rosensweig (1988) analysed the elasticities of tourism substitution for four Caribbean destinations (Jamaica, Bahamas, the Netherland Antilles and Puerto Rico) and finds a highly significant cross-price elasticity of substitution of 1.33 for tourism in these markets for US tourists. Further, when total foreign tourism receipts were included in the analysis, the intra-regional elasticity of substitution rose to 2.45. Rosenswzeig (op. cit.) therefore concludes that relative prices, as opposed to source market income, seem to be the main influence in shifting market shares in tourism within the Caribbean. Some authors, however, argue that the income of tourists in the destination's main source market, rather than relative prices, is the main determinant of arrivals to the Caribbean (Archibald, LaCorbinière and Moore, 2008).

3.4.2. Income as a determinant of international tourism demand

Of all the independent variables, income and price coefficients are the main focus of analysis. The income elasticity for example, determines whether tourism products in the destination would be interpreted as luxury goods or otherwise to the country of origin. Income elasticity has often been the most significant variable in many demand models. According to Lim (1997), international tourism should be viewed largely as a luxury good, with the estimated income elasticity ranging from 1 to 2. The appropriate income variable should be the income remaining after the purchase of necessities. In many cases, the income variable is not precisely measurable and most studies use nominal or real (per capita) personal disposable income, national income or GDP. He argues that some recreational travels, for instance overseas travels, are expensive and are generally regarded as a luxury good, in which case the discretionary income, defined as the income remaining after spending on necessities in the origin country, should be used as the appropriate measure of income in the demand model. Notably, this is a subjective variable and the data cannot be easily obtained in practice. Therefore, alternative measures of income must be used like real or per capita GDP, GNP and real disposable income (Kulendran and Witt, 2001). Other possible proxies include real private consumption expenditure (Song *et al*, 2003) and the industrial production index (González and Moral, 1995; Álvarez- Díaz, González-Gómez and Otero-Giráldez, 2012). Although most studies have found that income is the most important factor that influences the demand for international tourism, this finding has not always been conclusive. For example, the income variable was found to be insignificant in Song, Witt and Jensen, (2003) particularly in the demand for international tourism by residents of Japan and Germany.

Gray (1966) finds US and Canadian per capita income elasticities for tourism demand overseas to be 5.13 and 6.6, respectively. Broomfield (1991) finds income elasticities for tourism demand to Fiji range from 0.18 to 8.1, depending on country of origin. For Malaysia, on the other hand, values from a similar analysis only range from .94 to 3.44 (Shamsudding, 1995). Thus, while income elasticities have previously been found to be significant, they can vary immensely depending on the given country of origin or destination. Giacomelli (2006c) used panel data between 1995 and 2004 to estimate total tourism demand in Mediterranean region based on heterogeneity and uncertainty assumption.

Using structural time series models in the state space function estimated by prediction error decomposition, Gonzalez and Moral (1996) observe that sensitivity of Spanish market is low for changes in income. The increase in tourist income is expected to increase international tourism demand. To this end, income for the country of origin is another frequently used variable. For example, 89 per cent of the studies examined by Crouch (1994) used income as an explanatory variable.

Halicioglu (2004) examined an aggregate tourism demand function for Turkey using time series data for the period, 1960 to 2002. The results revealed that total tourist arrivals into Turkey were related to world income, relative prices and transportation cost. Income was the most significant variable in explaining total tourist arrivals in Turkey. As peoples' income increase, they are more willing to travel abroad. Therefore, it is expected that an increase in income may cause an increase in demand for tourism. Tsounta (2008) observes that the income elasticity is above one (1.5), suggesting that tourism is a luxury good. Worrell *et al.* (1997), using a Seemingly Unrelated Regression (SUR) approach, find more explanatory power in incomes. Worrell's results emphasise the role of income in determining demand for tourism, as the coefficients of income elasticities for tourism demand for Barbados from all the markets under examination (UK, the US, Europe and Canada) were high, ranging from 2.6 to 4.6.

Gil-Pareja *et al* (2007) suggest that tourism demand is dynamic and visitors' demand is not solely predicated on the quality of cultural and natural goods but requires complementary infrastructural services. Since these capital and infrastructural systems are assumed to accompany economic growth and development, they assume that countries with high GDP figures will exert a more 'pull' on visitors. Thus they examine income in the destination as a determinant of tourism demand. The coefficient on real GDP in the destination was positive and statistically significant at the 10 per cent level. Bashagi and Muchapondwa (2009) discovered that a 1 per cent increase in tourist income leads to approximately 0.7 per cent increase in tourist arrivals in Tanzania.

Habibi and Rahim (2009) ascertain that income is an important variable in all countries with the exception of Brunei, Australia and UK. The results indicate that the coefficient of income has the correct sign and elasticity except in Singapore, Thailand and Philippines. For

example, a 1 per cent increase in income of Japan would lead to 6 per cent increase in tourists' arrivals from India. Walle (2010) finds per capita income of the sending countries to have positive and statistically significant impact on tourist flows to Ethiopia. However, the magnitude is very small as a 100per cent increase in per capita income of the origin countries leads to only 1.3per cent increase in tourist arrivals. He explained that the result is in line with the reality in SSA where demand for tourism is income inelastic. He made reference to tourist arrivals in SSA in 2009, when the world economy was hit by global depression that grew by 5 per cent while negative growth rates were registered in all other regions of the world. Habibi and Rahim (2009) find that a 1per cent increase in income in origin countries results in a 3.75 per cent and 3.52 per cent increase in tourist arrivals from UK and US respectively.

3.4.3. Price as a determinant of international tourism demand

The own price of tourism is another variable that has been found to have an important role to play in determining the demand for international tourism. In theory this variable should contain the travel cost to the destination, but another important component in selecting destinations is the cost of living for tourists at these destinations. The cost of living for the tourist should be considered as the price of complementary goods. Notably, due to difficulties in obtaining data, travel costs have been omitted in most of the studies, Dritsakis (2004) and Lim and McAleer (2002) are some of the exceptions. International tourism demand tends to follow the law of demand. An increase in tourism prices tends to reduce international tourism demand.

Price elasticities of demand for tourism have been found by a number of scholars to be less than a unit in absolute value and relatively inelastic (Divisekera, 2003; White, 1985). Giacomelli (2006c) points out that demand for Mediterranean tourism has low price elasticity (0.32) while a 1 per cent increase in destination infrastructure would lead to 0.14 per cent increase in tourism arrival. Using structural time series models in the state space function estimated by prediction error decomposition, Gonzalez and Moral (1996) find that sensitivity of Spanish market is high for changes in relative price.

In empirical work, prices of tourist goods can be represented by the tourist price index or Consumer Price Index (CPI). Many scholars for example, Lim, 1997 and Crouch, 1994

support the use of the tourist price index. However, most studies use the CPI since many countries do not compute the tourist price index. Martin and Witt (1988) do not find sufficient differences in the explanatory power of the tourist price index over the CPI. Thus, the tourist price index and CPI can be used interchangeably. As the price of substitute goods, tourism studies have used relative prices between different country destinations. According to Song and Witt (2006) there are two different forms of substitute prices between country destinations that have been used: One allows for the substitution between the destination and a number of competing destinations separately, and the other calculates the cost of tourism in the destination under consideration relative to a weighted average cost of living in various competing destinations, and this index is adjusted by relevant exchange rates. The weight is the relative market share (arrivals or expenditures) of each competing destination.

In the absence of a comprehensive tourism price index, Worrell *et al* (1997) approximate visitor costs by dividing tourism receipts by the number of bed nights. They find that tourism prices in Barbados as well as relative prices had significant impacts. Gil-Pareja *et al* (2007) use the relative purchasing power parity (RPPP) as a proxy for tourism costs that take account of variations in the exchange rates between source and destination, and observe that an increase of 1per cent in the relative prices in the destination decreases tourism demand by 0.36per cent.

Bashagi and Muchapondwa (2009) find that the local tourism price elasticity is -3.7, meaning that a 1 per cent decrease in tourism prices in Tanzania is associated with an increase of more than 3 per cent in international tourist arrivals to the country. The tourism prices of the alternative destination had no significant impact in explaining the international tourism demand in Tanzania. Thus, they recommend that the Tanzanian government must maintain macroeconomic stability, especially low inflation, in order to reap the full economic benefits from international tourism. Narayan (2004) estimated an ARDL model of international tourism demand in Fiji and finds that a 1per cent increase in the cost of a holiday there relative to Bali leads to a decrease in tourists to Fiji by 5.1per cent, 2.5 per cent and 2.4 per cent from the USA, Australia and New Zealand, respectively.

Habibi and Rahim (2009) estimated tourism price elasticity and finds that a 1per cent increase in price of goods and services in Malaysia would lead to 8 per cent decrease in tourist arrivals to Malaysia from China. They also find that tourism price substitute is a negative sign

(complementary destination) in all countries except Singapore, Thailand and UK. For example, a 1per cent increase in price of goods and services in China, Indonesia, Singapore, Thailand and Hong Kong would lead to a 1.03per cent increase of UK tourists. In addition, a 1per cent increase in price of goods and services in Malaysia leads to 0.98per cent and 1.04per cent decrease in tourist arrivals to Malaysia from UK and US respectively. Walle (2010) finds that a 100per cent increase in the Ethiopia's CPI to Kenya's CPI leads to a 44per cent decrease in the number of tourist arrivals in Ethiopia. This is in line with the expectation that as Ethiopia becomes an expensive tourist destination relative to Kenya, many tourists who have decided to visit East Africa would prefer Kenya to Ethiopia.

Some authors adjust the price measure by the exchange rate while some include exchange rate as a separate variable. The exchange rate is defined as the number of units of the local currency which can be exchanged for a unit of the foreign currency. The change in the exchange rate affects the relative values of the currencies in question (Lim, 2004), hence changes in the exchange rate will lead to either an appreciation or depreciation of the tourist's currency. Appreciation of the tourist's currency will encourage more tourists to travel there while depreciation will discourage them from visiting. Another factor that contributes to the cost of living is the exchange rate between the origin country and the destination country currencies. The exchange rate currency has been used in different forms: for instance, Qiu and Zhang (1995) use the exchange rate currency separately from the CPI to account for the cost of tourism. Song and Witt (2006) used the CPI of destination country divided by the CPI in the origin country and adjusted by the appropriate exchange rates.

According to Shamsuddin (1995), for example, exchange rate elasticities only vary between -.78 and 1.27 in Malaysia. In Turkey, they vary from .18 to 4.22 based on dependent variables of expenditure estimates for arriving tourists (Uysal and Crompton, 1985). Some models used the tourist price index (or CPI) adjusted for the exchange rate, while others separated the tourist price index or CPI and exchange rate. The decision to treat the exchange rate separately is based on the assumption that the international tourist has more up-to-date information about the exchange rate than about prices of commodities in the destination country (Webber, 2001). Bashagi and Muchapondwa (2009) observe that the international tourism demand elasticity with respect to the exchange rate is almost 3 per cent, suggesting that a weaker Tanzanian shilling raises international tourism demand for the country, as the country will be seen as a source of cheaper tourism experiences.

Tourism prices also include transport costs, the cost of accessing tourism facilities and the cost of commodities consumed by tourists while on tour. Though theoretically important, the transport cost variable has usually played a minor role in demand models. It has often been omitted from models because previous researchers have found it to be insignificant. Also, there exists no clear and accurate proxy for representing the costs of transport. Jud and Joseph (1974), stress that previous researches have shown a strong negative correlation between the level of income and the cost of travel. As a result, such studies have been unable to separate the independent effects of income and travel costs upon the demand for travel. Gray (1966) finds the transportation cost variable to be statistically insignificant in explaining the travel spending abroad and fare payments to foreign flag carriers by Canadian and US residents. Bankole and Babatunde (2010a, 2010b) conclude that total tourist arrivals into Nigeria are related to transportation cost.

Transport costs usually are treated separately from the price of tourist goods and services. The demand for transportation in international travel is a derived demand, as it is the consumer who has to be transported to the destination (Lim 1997). About 58 per cent of the studies examined by Crouch (1994) used the cost of transportation as an explanatory variable. Transportation costs are measured by either the airfare for air travel, or fuel prices for surface travel. According to Lim (1997), since oil price is the main determinant of road and airfares, oil prices can be used to represent transport costs.

Bashagi and Muchapondwa (2009) posit that in the long run, it is largely the local tourism prices, tourist income, transport cost and the exchange rate that immensely affect international tourist arrivals in Tanzania. One per cent decrease in transport costs increases the number of international tourist arrivals by about 0.3 per cent.

Habibi and Rahim (2009) contend that 1per cent increase in travel cost will lead to decrease in tourist arrivals from China by 0.05per cent and that travel cost is significant in the Indonesia, China, Japan and UK. They also discuss that travel cost is a significant variable affecting tourist arrivals to Malaysia and has a negative sign which indicates that increase in travel cost (increase in crude oil price) results to decrease in tourist arrivals to Malaysia.

Boopen (2006) obserces that transport infrastructure is an important element of the tourism equation. One per cent increase in transport capital will increase the number of tourist arrivals by 0.127per cent in the short run and 0.17 per cent in the long run. He however notes that non-public transportation capital, though having a positive sign, has an insignificant effect in both runs.

3.4.4. Risk factors as determinant of international tourism demand

Enders, Sandler, and Parise (1992) analyse a sample of European nations between 1974 and 1988 using an Autoregressive Integrated Moving Average (ARIMA). They find terrorism to have a significant impact on tourism receipts, implying decrease revenues for affected countries and shifting patterns to other destinations. Drakos and Kutan (2001) employ a slightly different methodology and extend the cross-country analysis to Mediterranean nations. Using an autoregressive and SUR model, they show that some countries exhibit less vulnerability to changes in tourism given a terrorist event. Specifically, they find that tourism in Turkey and Israel are more sensitive to terrorism than in Greece.

Sloboda (2003), on the other hand, use an ARMAX (autoregressive moving average with explanatory variables) model for a short-term assessment of terrorism on US tourism. He observes a discernible impact of terrorism on incoming tourists in the current period. Also, the results implied that the impact of terrorism extends beyond one year but its magnitude diminishes as the initial threat recedes. The significance of these results illustrates tourism's vulnerability to exogenous shocks that might not affect traditional commodities, with possible implications for the volatility of the industry (Savard, 2005a, 2005b). Giacomelli (2006b) find that all destination risk parameters are significant with correct sign. Decrease in state failures and political terror lead to annual growth of 1.93per cent and 0.10per cent respectively. Increase in terrorism intensity reduces annual growth by 4.92per cent.

Dummy variables have been frequently introduced to account for the effect of external shocks that might have a transitory influence on tourism demand. Political instability and social conflict, terrorism, travel restrictions, oil crises, world fairs and sporting events are often included as dummy variables (Tsounta, 2008). Specific events can lead to either positive or negative shocks on international tourism demand. Dummy variables are included in many international tourism demand models with the objective of measuring the effects of

specific events (Salleh *et al* 2008). Gormus and Gocer (2010) are of the view that February 2001 Turkish economic crisis, EU membership of sending countries, Gulf War II in March 2003, the terrorist attacks on the USA in September 11 2001 and official visit of Turkish president and prime minister to sending countries had some effect on Turkish tourism demand. They use dummy variables to capture these effects. For example, the dummy variable takes the value of one if sending countries are EU members and zero otherwise. Also, if Turkish president or prime minister visits to sending countries in the first three months of the year, the dummy variable takes the value of one in same year and zero otherwise; if Turkish president or prime minister visits sending countries in the rest of the year, the dummy variable takes the value of one in the next year and zero otherwise.

Bashagi and Muchapondwa (2009) contend that local tourism prices, tourist income, tourist preference and the 2001 terror attack are the main determinants of international tourism demand for Tanzania between 1996 and 2006. They discussed that the 1998 United States embassy bombing in Tanzania had neither a temporary nor permanent effect on international tourist arrivals. However, the 2001 terror attack in the United States affected the rate of international tourist arrivals in Tanzania. The terror attack had negative temporary and permanent effects on international tourism demand for Tanzania. International tourist arrivals declined by about 35 per cent temporarily and almost 20 per cent permanently.

CHAPTER FOUR

THEORETICAL FRAMEWORK AND METHODOLOGY

The appropriate economic theory for analysing consumer choice of destination is the basic microeconomics theory of consumer which implies that a rational agent will always choose the most preferred bundle (of destinations) from the set of affordable alternatives (defined by consumer's budget constraints) to maximise utility. The monotonicity assumption of this theory, which makes consumers prefer more of any commodity, implies commodities are good and not bad. According to Lancaster (1966), this popular traditional consumer theory fails to incorporate the intrinsic properties of a particular commodity into the theoretical analysis.

In application of this theory, economists' analyses of substitutes and complements suggest the need to recognise intrinsic characteristics of commodities. For example, if the only relevant property is that 'goods are good', then consumer that only (and always) consumes diamonds is as rational as consumer that only (and always) consumes loaves of bread. Then, in elementary economics, why do instructors use 'margarine and butter' as example of substitutes and use 'automobiles and gasoline' as example of compliments? Why not using 'butter and gasoline' as example of substitute? The answer lies in the assumed intrinsic characteristics of commodities. Another limitation of the traditional consumer theory is its inability to explain introduction of new commodities, a fact of the current technology driven world. Under the traditional consumer theory, to add 'm' new commodities to analysis based on 'n' old commodities, we need to start the analysis all over again and expand the dimension of commodity space (and that of consumer preference map) from 'n' to 'n+m'.

This thesis uses the Lancaster's consumer framework to model tourism destination choice because the traditional consumer theory is even more inappropriate for tourists' destination choice than non-tourists commodities.

4.1. Tourism choice in the light of Lancaster's theory

This thesis assumes a multistage budgeting process in which consumers make consumption decisions in four stages. Stage 1 is time allocation decision stage where consumers decide how to share available time between work and leisure. In stage 2, consumers make decision about the utility maximising allocation of resources between tourist and non-tourist commodities. Consumers decide the optimal consumption bundle of non-tourist goods in stage 3 while the optimal consumption bundle of tourist goods is decided in stage 4. This thesis is concerned with the final stage, the tourism-goods allocation stage.

It is assumed that tourism choice is a process of quantitative and qualitative consumption. The quantitative unit of tourism consumption is represented by days of stay while the qualitative unit of this consumption is represented by the characteristics bundle provided by destinations for a single day of stay. In line with Lancaster's theory, it is assumed that different destinations provide different characteristic bundles. That is, destinations represent heterogeneous tourism goods. It also assumed that destinations' characteristics can be grouped into attractions and facilities (Papatheodorou, 2001). Attractions include destinations' natural and historical features while facilities encompass tourism infrastructure. It is also assumed that rational individuals are interested in maximising their tourism utility as constrained by budget considerations, with the utility function defined in the characteristics space.

Assuming a Cobb-Douglas utility function (with $0 < \alpha < 1$), the tourism choice process for an individual coming from a given origin is described as follows:

$$\text{MAX} \quad U = z_1^{\alpha} z_2^{(1-\alpha)} \tag{16}$$

$$\text{Subject to} \quad z = Zx \tag{17a}$$

$$p'x + t = Y \tag{17b}$$

$$\text{with } z=\begin{bmatrix} z_1 \\ z_2 \end{bmatrix}; Z=\begin{bmatrix} z_{11} & z_{12} & \dots & z_{1n} \\ z_{21} & z_{22} & \dots & z_{2n} \end{bmatrix}; x=\begin{bmatrix} x_1 \\ x_2 \\ \vdots \\ x_3 \end{bmatrix}; p=\begin{bmatrix} p_1 \\ p_2 \\ \vdots \\ p_3 \end{bmatrix}; t=\begin{bmatrix} (1-t_1)Y \\ (1-t_2)Y \\ \vdots \\ (1-t_3)Y \end{bmatrix} \quad (18)$$

and where

z_i = total amount of characteristic i, with i=(1,2); 1 indicates attractions, and 2 indicates facilities.

Z_{ij} = consumption technology coefficient, representing the amount of daily characteristic i provided by country j , with j=(1…n).

p_j = tourism price for a single day of stay in country j.

x_j = days of stay in country j.

Y = tourists' disposable income.

$(1+t_j)$ Y = transport costs to reach country j, with $(0 < t_j < 1)$.

For analytical simplicity, three destinations (j=1,2,3) are assumed, and transport costs are temporarily omitted. The constraint equation 2 becomes:

$$\left.\begin{aligned} z_1 &= z_{11}x_1 + z_{12}x_2 + z_{13}x_3 \\ z_2 &= z_{21}x_1 + z_{22}x_2 + z_{23}x_3 \\ p_1x_1 &+ p_2x_2 + p_3x_3 = Y \end{aligned}\right\} \quad (19)$$

Further, daily characteristics are assumed to be positive ($z_{ij}>0$). Moreover, destinations are assumed to provide different tourism products, with country 1 relatively abundant in z_2, country 3 relatively abundant in z_1, and country 2 lying in an intermediate position. These destination characteristics can be stated as:

$$z_{11} < z_{12} < z_{13} \quad \text{and} \quad z_{21} > z_{22} > z_{23} \quad (20)$$

Finally, destinations' technical efficiency is assumed. A given destination is considered to be technically efficient when it provides a 'non-dominated' characteristic bundle. Under the above assumptions, the tourism choice process in the light of Lancaster's theory is clearly illustrated in Figure 3. The characteristics provided by each destination are represented by ''characteristics rays'' (labelled as Countries 1, 2, and 3). Let '*' represents tourists with high preference for attractions and '**' represent tourists with high preference for facilities.

Points 1,2, and 3 are called 'budget vertexes'. They represent the characteristics bundle which is obtainable in each destination, given tourists' budget constraint. The segment in bold, connecting destinations' budget vertexes is called 'efficiency frontier': it represents the place of potential optima available to rational individuals. Potential optima include single-destination trips, and two kinds of multi-destinations trips (linear combinations of countries 1 and 2; linear combinations of countries 2 and 3).

To formally solve the model for x, the coordinates of the budget vertexes are expressed as follows:

$$1=\left[\frac{Y}{P_1}z_{11},\quad \frac{Y}{P_1}z_{21}\right];2=\left[\frac{Y}{P_2}z_{12},\quad \frac{Y}{P_2}z_{22}\right];3=\left[\frac{Y}{P_3}z_{13},\quad \frac{Y}{P_3}z_{23}\right] \tag{21}$$

Using coordinates of budget vertexes as defined in equation 4.6, the equations of the lines passing through the points (1-2), (2-3), and (1-3) are calculated as:

$$\left.\begin{aligned} Line(1-2): z_2 &= Y\left[\frac{z_{21}z_{12}-z_{11}z_{22}}{z_{12}p_1-z_{11}p_2}\right]-z_1\left[\frac{z_{21}p_2-z_{22}p_1}{z_{12}p_1-z_{11}p_2}\right] \\ Line(2-3): z_2 &= Y\left[\frac{z_{13}z_{22}-z_{12}z_{23}}{z_{13}p_2-z_{12}p_3}\right]-z_1\left[\frac{z_{22}p_3-z_{23}p_2}{z_{13}p_2-z_{12}p_3}\right] \\ Line(1-3): z_2 &= Y\left[\frac{z_{21}z_{13}-z_{21}z_{23}}{z_{13}p_1-z_{11}p_3}\right]-z_1\left[\frac{z_{21}p_3-z_{23}p_1}{z_{13}p_1-z_{11}p_3}\right] \end{aligned}\right\} \tag{22}$$

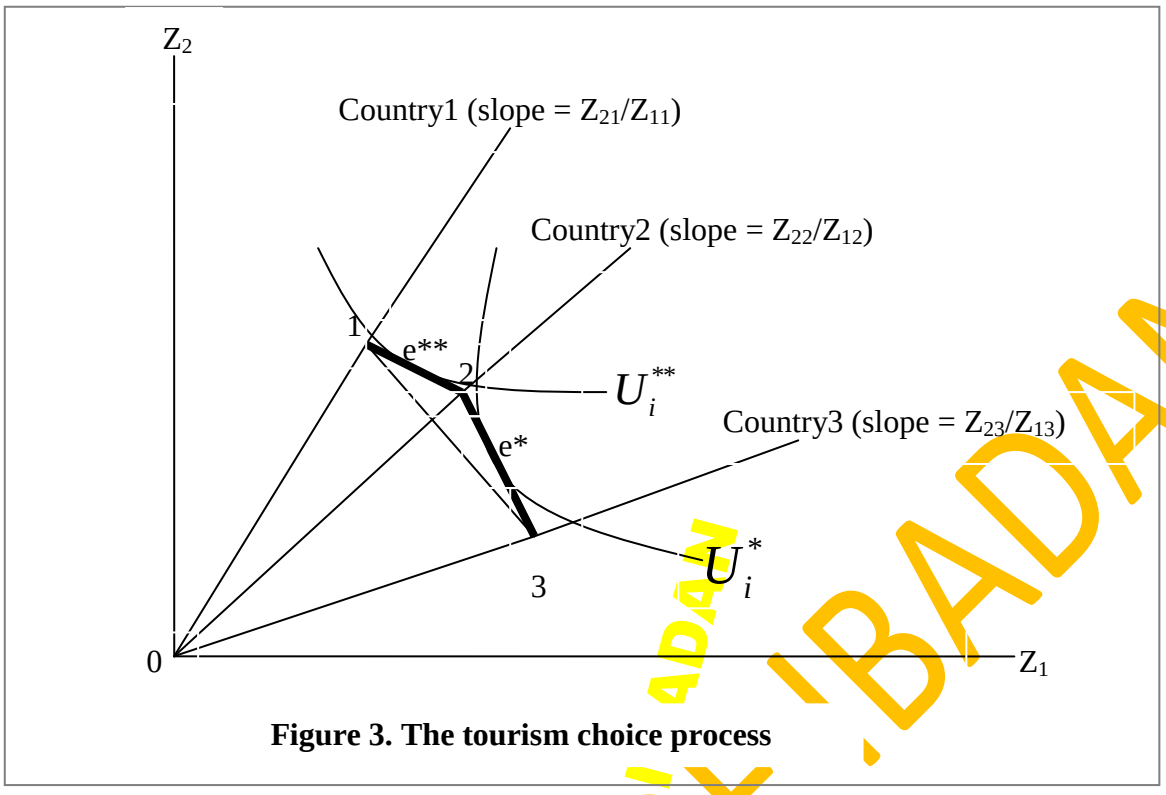


Figure 3. The tourism choice process

Source: Adapted from Giacomelli (2006b)

By imposing technical efficiency, it is now possible to determine the Marshallian demand for both z_1 and z_2. Technical efficiency for country 1 and country 3 required that line (1-2), line (1-3) and line (2-3) have negative slope. For country 3 to be technically efficient, the absolute slope of line (1-2) should be lower that of line (1-3) while that of line (2-3) should be greater than that of line (1-3).

From equation 22, technical efficiency condition for line (1-2) implies that:

$$-\left[\frac{z_{21}p_2 - z_{22}p_1}{z_{12}p_1 - z_{11}p_2}\right] < 0 \Rightarrow z_{22}p_1 - z_{21}p_2 < 0; z_{12}p_1 - z_{11}p_2 > 0$$

$$\Rightarrow \frac{p_1}{p_2} < \frac{z_{21}}{z_{22}}; \frac{p_1}{p_2} > \frac{z_{11}}{z_{12}} \Rightarrow \frac{z_{11}}{z_{12}} < \frac{p_1}{p_2} < \frac{z_{21}}{z_{22}} \quad (23)$$

Similarly, technical efficiency conditions for line (1-3) and line (2-3) are:

$$\frac{z_{11}}{z_{13}} < \frac{p_1}{p_3} < \frac{z_{21}}{z_{23}} \quad (24)$$

$$\frac{z_{12}}{z_{13}} < \frac{p_2}{p_3} < \frac{z_{22}}{z_{23}} \quad (25)$$

The technical efficiency condition that the absolute slope of line (1-2) should be lower than that of line(1-3) which implies that:

$$\frac{z_{21}p_2 - z_{22}p_1}{z_{12}p_1 - z_{11}p_2} < \frac{z_{21}p_3 - z_{23}p_1}{z_{13}p_1 - z_{11}p_3} \Rightarrow \frac{z_{21}p_2 - z_{22}p_1}{z_{12}p_1 - z_{11}p_2} - \frac{z_{21}p_3 - z_{23}p_1}{z_{13}p_1 - z_{11}p_3} < 0$$

$$\Rightarrow (z_{21}p_2 - z_{22}p_1)(z_{13}p_1 - z_{11}p_3) - (z_{21}p_3 - z_{23}p_1)(z_{12}p_1 - z_{11}p_2) < 0$$

$$\Rightarrow p_1(z_{12}z_{23} - z_{13}z_{22}) + p_2(z_{13}z_{21} - z_{23}z_{11}) + p_3(z_{11}z_{22} - z_{12}z_{21}) < 0 \quad (26)$$

Similarly, the technical efficiency condition that the absolute slope of line (2-3) should be greater than that of line(1-3) implies that:

$$p_1(z_{13}z_{22} - z_{12}z_{23}) + p_2(z_{23}z_{11} - z_{13}z_{21}) + p_3(z_{12}z_{21} - z_{11}z_{22}) < 0 \quad (27)$$

With the technical efficiency conditions (equations 23 to 27), the Marshallian demand is obtained by finding the tangential point between the indifference curve and the efficiency frontier. To derive the Marshallian demand for α* (high preference for attraction), the constraint equation 19 can be written as:

$$z_1\left(\frac{z_{22}p_3-z_{23}p_2}{z_{13}z_{22}-z_{12}z_{23}}\right)+z_2\left(\frac{z_{13}p_2-z_{12}p_3}{z_{13}z_{22}-z_{12}z_{23}}\right)-Y=0 \quad (28)$$

The associated Lagrangian function for maximizing 16 subject to 28 is:

$$L=z_1^{\alpha}z_2^{1-\alpha}-\lambda\left[z_1\left(\frac{z_{22}p_3-z_{23}p_2}{z_{13}z_{22}-z_{12}z_{23}}\right)+z_2\left(\frac{z_{13}p_2-z_{12}p_3}{z_{13}z_{22}-z_{12}z_{23}}\right)-Y\right] \quad (29)$$

with the following solutions:

$$z_1=\alpha Y\left(\frac{z_{13}z_{22}-z_{12}z_{23}}{z_{22}p_3-z_{23}p_2}\right) \text{ Marshallian demand for } z_1, \text{ with } \alpha=\alpha^*; \quad (30)$$

$$z_2=(1-\alpha)Y\left(\frac{z_{13}z_{22}-z_{12}z_{23}}{z_{13}p_2-z_{12}p_3}\right) \text{ Marshallian demand for } z_2, \text{with } \alpha=\alpha^* \quad (31)$$

Destination characteristics equation 20 and the five technical efficiency conditions ensure that z_1 and z_2 are positives for all values of α. By using equation 17a, it is possible to map the demand in characteristic space (equations 30 and 31) to the corresponding values in the goods space. This requires finding the inverse of matrix **Z** in 17a**.** Since destinations are more than characteristics, **Z** is singular and cannot be inverted. However, having information on tourists' preferences (α values), squared sub-matrixes of **Z** (**Ž**) can be obtained without losing information. The Marshallian demand for x (when α= α*) can be obtained from:

$$\mathbf{x}=\check{\mathbf{Z}}^{-1}\mathbf{z} \quad (32)$$

where

$$\hat{Z}^{-1} = \begin{pmatrix} \frac{z_{23}}{z_{12}z_{23}-z_{13}z_{22}} & -\frac{z_{13}}{z_{12}z_{23}-z_{13}z_{22}} \\ -\frac{z_{22}}{z_{12}z_{23}-z_{13}z_{22}} & \frac{z_{12}}{z_{12}z_{23}-z_{13}z_{22}} \end{pmatrix} \text{ for } \alpha = \alpha^*; \text{ and} \quad (33)$$

Marshallian demands for x_2 (intermediate destination) are represented by the following equations:

$$x_2 = Y\left(-\alpha^* \frac{z_{23}}{z_{22}p_3 - z_{23}p_2} + (1-\alpha^*)\frac{z_{13}}{z_{13}p_2 - z_{12}p_3}\right) \text{ for } \alpha = \alpha^* \quad (34)$$

Similarly, for consumer with high preference for facilities (α**), we will obtain

$$x_2 = Y\left(\alpha^{**} \frac{z_{21}}{z_{21}p_2 - z_{22}p_1} - (1-\alpha^{**})\frac{z_{11}}{z_{12}p_1 - z_{11}p_2}\right) \text{ for } \alpha = \alpha^{**} \quad (35)$$

Given that z_1 and z_2 are positives, the positive relationship between characteristics and days of stay ensure positive value for x_2. The partial derivatives x_2 with respect to each of the variables on the right hand side can give a priori expectation on each of the variables. For α = α* (equation 34), it can be shown that:

$$\frac{\partial x_2}{\partial Y} > 0; \frac{\partial x_2}{\partial p_3} > 0; \frac{\partial x_2}{\partial z_{12}} > 0; \frac{\partial x_2}{\partial z_{22}} > 0; \frac{\partial x_2}{\partial p_2} < 0; \frac{\partial x_2}{\partial z_{13}} < 0; \frac{\partial x_2}{\partial z_{23}} < 0 \quad (36)$$

Similarly, for α = α** (equation 35) we have the following:

$$\frac{\partial x_2}{\partial Y} > 0; \frac{\partial x_2}{\partial p_1} > 0; \frac{\partial x_2}{\partial z_{22}} > 0; \frac{\partial x_2}{\partial z_{12}} > 0; \frac{\partial x_2}{\partial p_2} < 0; \frac{\partial x_2}{\partial z_{11}} < 0; \frac{\partial x_2}{\partial z_{21}} < 0 \quad (37)$$

Aggregation condition can be introduced into the model if we assume that the budget lines of individual tourists (say A and B) are parallel. With this, we can specify the aggregate demand as a function of aggregate income (MsConell, Whinston and Green, 1995).

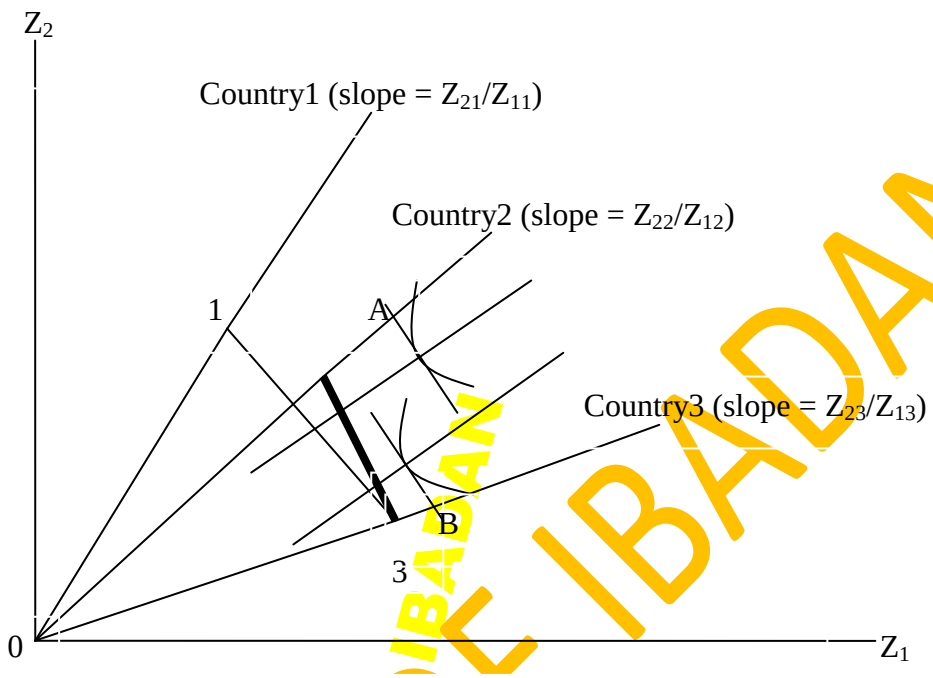


Figure 4. Aggregation condition

Source: Author's modification

4.2. Introducing uncertainty in the light of expected utility theory

The previous analysis assumes certainty; however, uncertainties about destination can result from missing information, destinations' political violence and natural disasters. For example, individuals may be aware of destinations' health risks, but this cannot eliminate the possibility of falling ill during the holiday. Acknowledging tourism uncertainty, individuals are assumed to transform daily characteristics' vectors in 'certainty equivalent vectors' z^c_j. The certainty equivalent (z^c) is the amount of daily characteristic that, if received with certainty, would generate the same expected utility as the uncertain prospect (z_g^o, z_b^o).

Assume individuals can calculate the ''expected daily characteristic'' [E(z)], and the corresponding 'expected utility' [E(U)] as shown in equation 38 below:

$$E(z) = p_b z_b^o + (1-p_b) z_g^o$$
$$E(U) = p_b U(z_b^o) + (1-p_b) U(z_g^o) \qquad (38)$$

In 38, $z_g^o$and z_b^o are daily characteristics associated with uncertain good and bad tourism experience respectively; p_b (1-p_b) is the probability of a bad (good) tourism experience occurring; $U(z_b^o)$ and $U(z_g^o)$ are the utility associated with bad and good tourism experience respectively. The indifference curves [$E(U)_i$] are the places in the (z_g, z_b)space, characterised by a constant expected utility. The slope of the indifference curve can be obtained by totally differentiating the expected utility and making it equal to zero.

$$\partial E(U) = p_b U'(z_b^0)\partial z_b^0 + (1-p_b) U'(z_g^0)\partial z_g^0 = 0$$
$$\Rightarrow \frac{\partial z_b^0}{\partial z_g^0} = -\frac{(1-p_b)}{p_b}\frac{U'(z_g^0)}{U'(z_b^0)} \qquad (39)$$

Equation 39 implies that the slope of the indifference curves depend on the risk level P_b, and the shape of the utility function, U'(z). Within the expected utility framework, each destination is characterised by a certain prospect, P, a vector of daily characteristics associated with each kind of tourism experience. Where $P = (z_g^0, z_b^0)$ is a particular locus in the (z_g z_b) space. The locus of prospect that produces the same expected daily characteristics,

E(z), is referred to as iso-expected daily characteristics line, isoE(z). The slope of the isoE(z) is obtained by totally differentiating the expected daily characteristics [E(z) in 38] and equating it to zero.

$$\partial E(z) = p_b \partial z_b^0 + (1-p_b)\partial z_g^0 = 0 \qquad \Rightarrow \frac{\partial z_b^0}{\partial z_g^0} = -\frac{(1-p_b)}{p_b} \tag{40}$$

The graphical representation of the expected utility theory is shown in Figure 5. For risk averse individuals (RA), indifference curves are convex with $U'(z) > 0$ and $U''(z) < 0$. For risk neutral individuals (RN), the indifference curves are straight lines with the same slope as the isoE(z). Along the certainty line, C, prospect has the same daily characteristic in bad and good states. That is, $z_b = z_g$ along line C. The individual equilibrium, and the certainty equivalent characteristic (zc), are the certain daily characteristics that yield the same expected utility as the uncertain prospect (z_g^0, z_b^0). This is defined by the point where the indifference curve passing through the prospect (z_g^0, z_b^0) crosses the certainty line.

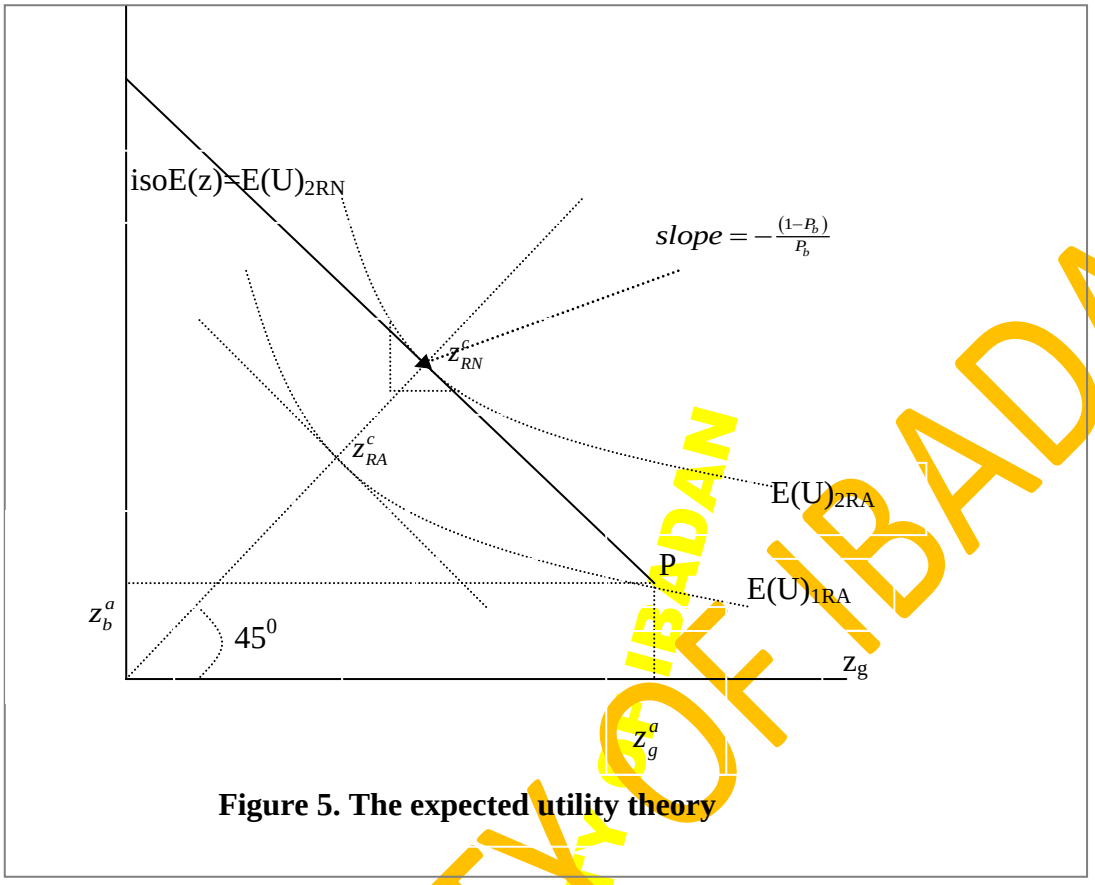


Figure 5. The expected utility theory

Source: Adapted from Giacomelli (2006b)

For prospect P in Figure 5, $(z^c = z^c_{RA})$ for risk averse and $(z^c = z^c_{RN})$ for risk neutral individuals are derived as follows:

$$z^c_{RN} = p_b z^0_b + z^0_g(1-p_b) = z^0_g p_b \frac{1}{\beta} + z^0_g(1-p_b) = z^0_g[p_b \frac{1}{\beta} + (1-p_b)] = z^0_g p_b[\frac{1}{\beta} + \frac{(1-p_b)}{p_b}] \quad (41)$$

where $z^0_b = \frac{1}{\beta} z^0_g; (\beta > 1)$; β is a measure of loss suffered due to bad tourism experience while the monetary value of the loss is expressed as:

$$L = \left(\frac{\beta - 1}{\beta}\right) z^0_g \quad (42)$$

$-\frac{(1-p_b)}{p_b}$ is the slope of indifference curve for risk neutral individuals

$$\Rightarrow z^c_{RN} = z^0_g p_b[\frac{1-\beta}{\beta} + \frac{1}{p_b}] = z^0_g[p_b \frac{1-\beta}{\beta} + 1] \quad (43)$$

$$z^c_{RA} = z^0_g p_b[\frac{1}{\beta} + \frac{(1-p_b)}{p_b}\frac{U'(z^0_g)}{U'(z^0_b)}]$$

where $-\frac{(1-p_b)}{p_b}\frac{U'(z^0_g)}{U'(z^0_b)}$ is the slope of indifference curve for risk averse individuals

$$z^c_{RA} = z^0_g[p_b \frac{1-\beta}{\beta} \frac{U'(z^0_b)}{p_b U'(z^0_b) + (1-p_b)U'(z^0_g)} + 1] \quad (44)$$

Equations 43 and 44 show that, for risk averse and risk neutral individuals:

i. an increase in the probability of a bad tourism experience occurring (P_b) leads to a reduction in z^c. This implies that:

$$\frac{\partial z^c}{\partial p_b} < 0 \Rightarrow \frac{\partial x_2}{\partial p_{b2}} < 0 \text{ and } \frac{\partial x_2}{\partial p_{bk}} > 0 \quad (45)$$

ii. an increase in the loss due to the bad tourism experience (β) leads to a reduction in z^c.

$$\frac{\partial z^c}{\partial \beta} < 0 \Rightarrow \frac{\partial x_2}{\partial \beta_2} < 0 \text{ and } \frac{\partial x_2}{\partial \beta_k} > 0 \quad (46)$$

iii. the greater the risk aversion the smaller is z^c

$$\frac{\partial z^c}{\partial RA} < 0 \Rightarrow \frac{\partial x_2}{\partial RA} < 0 \quad (47)$$

Thus the international tourism demand is a function of four groups of determinants:

- Infrastructure in the destination countries
- Prices in the destination countries
- Risk factors in the destination countries
- Income of the origin countries

4.3. Methodology

The methodologies adopted for realising each of the four objectives are described below.

4.3.1. Computation of the competitive weight

This addresses the first objective of this thesis. The method adopted can be discussed under two broad steps. The first is the computation of the Similarity-Dissimilarity indexes between

Nigeria and the other 15 West African countries and the second is the computation of the competitive weight from the indexes. The steps are discussed below:

Step 1: Computation of similarity-dissimilarity index

This is achieved by computing similarity index in which a low value means close similarity (or low dissimilarity) with Nigeria while high value implies low similarity (or high dissimilarity) with Nigeria. There are three aspects to this similarity-dissimilarity calculation, viz: CS (CS); NS (NS); and Facility similarity (FS). Each of these is explained below:

a. Cultural characteristics similarity

This is computed as the simple average of the standardised score of each of the five CS variables. The CS variables are represented by C_{ik};

where

i = 1-15[11] for each of the West African Countries except Nigeria; K = 1 for contiguity; 2 for official language; 3 for non-official language; 4 for colonial master; 5 for the distance.

These are relevant cultural variables in international trade literature (Ghemawat, 2001; Gallego and Llano, 2013; Christen, 2012).

All the variables are obtained from CEPII GeoDist Database[12] (Mayer and Zignago, 2011) and are defined as follows:

Contiguity is a dummy variable that equals one (1) when Country i and Nigeria are contiguous and equal zero (0) otherwise.

[11] i=1-15: [i=1 for Benin; i=2 for Burkina Faso; =3 for Cape Verde; 4 for Cote d'Ivoire; =5 for Gambia, The; =6 for Ghana; =7 for Guinea; =8 for Guinea-Bissau; =9 for Liberia; =10 for Mali; =11 for Mauritania; =12 for Niger; =13 for Senegal; =14 for Sierra Leone; =15 for Tog]

[12] See (http://www.cepii.fr/anglaisgraph/bdd/distances.htm)

Official language is a dummy variable that equals one (1) when Country i and Nigeria share a common official language and equal zero otherwise.

Non-Official language is a dummy variable that equals one (1) when there is/are common language(s) spoken by at least 9 per cent of the population in Country i and Nigeria and equal zero otherwise.

Colonial master is a dummy variable that equals one (1) when Country i and Nigeria have had a common colonial master after 1945 and equal zero otherwise.

Distance is a measure of bilateral distances between the biggest cities in Country i and that of Nigeria. Those inter-city distances being weighted by the share of the city in the overall country's population[13].

The average and the standard deviation of each variable represented by $\overline{C}_{.k}$ and σ_{C_k} respectively, are used to obtain the standardised values ($\ddot{C}_{ik}$) as follows:

$$\ddot{C}_{ik} = \frac{C_{ik} - \overline{C}_{.k}}{\sigma_{C_k}}, \quad k = 15 \tag{48}$$

To prevent the summation of the standardised values from approaching zero, the highest absolute value of a negative standardised score ($\left|\min \ddot{C}_{ik}\right|$) is doubled ($2\left|\min \ddot{C}_{ik}\right|$) and then

---

[13] The weight is $d_{ij} = \left(\sum_{k \in i} (pop_k / pop_i) \sum_{\ell \in j} (pop_\ell / pop_j) d_{k\ell}^{\theta} \right)^{1/\theta}$

where pop_k designates the population of agglomeration k belonging to country i. The parameter θ measures the sensitivity of trade flows to bilateral distance d_{kl}. The calculation sets θ equal to -1, which corresponds to the usual coefficient estimated from gravity models of bilateral trade flows (CEPII, 2007).

added to each standardised score ($2\left|\min \ddot{C}_{ik}\right| + \ddot{C}_{ik}$). By this transformation, the minimum value for each variable is the absolute value of the highest negative value before adjustment. Note that, the smaller the distance measures, the more similar the destination. The interpretation of the other 4 CS variables requires caution as small values imply high dissimilarity. To account for this, the standardised score of these four variables are inverted such that small value of CS can be interpreted as higher CS with Nigeria.

The CS value is then obtained as the average of the 5 variables as follows:

$$CS_i = \frac{1}{5}\left\{\sum_{k=1}^{4} \frac{1}{2\left|\min \ddot{C}_{ik}\right| + \ddot{C}_{ik}} + (2\left|\min \ddot{C}_{i5}\right| + \ddot{C}_{i5})\right\} \quad (49)$$

b. Natural characteristics similarity

This is obtained by comparing the standardised score of each of the three groups of natural variables for Nigeria with that of the other 15 West African countries. The three groups are: Climatic similarity (CL_i), Elevation similarity (EL_i), and Biomes similarity (BI_i).

i. Climatic similarity

The climate similarity (CL_i) is measured as the average of nine climate characteristic variable presented by CL_{il};

where $i = 1\text{-}16$ for each West African Country, including Nigeria; $l = 1\text{-}9$ for per centage of land area in square kilometre that falls in each of the following nine climatic group. $l = 1$ for tropical with no dry season, over 60mm rain in driest month and animal range temperature of less than 5^0C; $l = 2$ for tropical monsoon type with short dry season and wet ground all year; $l = 3$ for tropical monsoon type with short dry season and wet ground all year annual range temperature less than 5°C; $l = 4$ for tropical distinct dry season with one month of less than 60mm rainfall; $l = 5$ for tropical distinct dry season with one month of less than 60mm rainfall and annual range temperature of below 5^0C; $l = 6$ for temperate winter dry season with at least ten times as much rainfall in

wettest month as driest month; $l = 7$ for temperate winter dry season with at least ten times and average annual temperature of below 22^0C in warmest month; $l = 8$ for dry steppe vegetation type of subtropical desert with average temperature of below 18^0C; and $l = 9$ for desert vegetation type of subtropical desert with any temperature of above 18^0C.

The mean value ($\overline{\overline{\mathrm{CL}}}_{.l}$) and the standard deviation ($\sigma_{\mathrm{CL}_{.l}}$) are used to obtain the standardised values as follows:

$$\mathrm{CL}_{il} = \frac{\mathrm{CL}_{il} - \overline{\overline{\mathrm{CL}}}_{.l}}{\sigma_{\mathrm{CL}_{.l}}} \tag{50}$$

As for the CS computation, the standard values are adjusted by the highest minimum value to prevent zero sum value. The climate similarity score is thus obtained as:

$$\mathrm{CL}_{\mathrm{i}} = \frac{1}{9}\sum_{l=1}^{9}(2\left|\min \ddot{\mathrm{C}}\ddot{\mathrm{L}}_{il}\right| + \ddot{\mathrm{C}}\ddot{\mathrm{L}}_{il}) \tag{51}$$

ii. Elevation similarity

The elevation similarity (EL_{i}) is measured as the average of ten elevation variables represented by EL_{i};

where, i=1-16 for each West African country, including Nigeria; J=1-10 for per centage of land area in square kilometre that falls in each of the following elevation range. $J = 1$ for each elevation of below 5 metres; $J = 2$ for between 5 and 10 metres; $J = 3$ for elevation of between 10 and 25 metres; $J = 4$ for elevation between 25 and 50 metres; $J = 5$ for elevation between 50 and100 metres; $J = 6$ for elevation between 100 and200 metres; $J = 7$ for elevation between 200 and 400 metres; $J = 8$ for elevation between 400 and 800 metres; $J = 9$ for elevation between 800 and 1500 metres; and $J = 10$ for between 1500 and 3000 metres.

The mean value (EL_{i}) and standard deviation ($\sigma_{\mathrm{EL}_{\mathrm{J}}}$) are used to calculate the standardised values as follows:

$$\mathrm{EL_i} = \frac{1}{10}\sum_{J=1}^{10}(2\left|\min \vec{\vec{\mathrm{EL}}}_{iJ}\right| + \vec{\vec{\mathrm{EL}}}_{iJ}) \tag{52}$$

iii. Biomes similarity

This is calculated as the average of 7 biomes variables represented by $\mathrm{B}I_{iL}$:

Where: $i = 1\text{-}16$ for each West African country, including Nigeria; $L = 1\text{-}7$ for per centage land area in each country that falls under the following biome classes: $L = 1$ for tropical and subtropical moist broadleaf forests; $L = 2$ for tropical and subtropical dry broadleaf forests; $L = 3$ for tropical and subtropical grasslands, savannahs and shrublands; $L = 4$ for flooded grasslands and savannahs; $L = 5$ for montane grasslands and shrublands; $L = 6$ for deserts and xeric shrublands; and $L = 7$ for mangroves.

The mean value ($\overline{\mathrm{B}\bar{I}}_{.L}$) and standard deviation ($\sigma_{\mathrm{BI_L}}$) are used to calculate the standardised values as follows:

$$\mathrm{B}I_{\mathrm{i}} = \frac{1}{7}\sum_{L=1}^{7}(2\left|\min \vec{\vec{\mathrm{BI}}}_{iL}\right| + \vec{\vec{\mathrm{BI}}}_{iL}) \tag{53}$$

The average of the above three $\overline{NV}_i$ is calculated as follows:

$$\overline{\mathrm{NV}}_{\mathrm{i}} = (\mathrm{CL_i} + \mathrm{EL_i} + \mathrm{BI_i})/3 \tag{54}$$

The average natural variables ($\overline{NV}_i$) is converted to NS ($\mathrm{NS_i}$) index by finding the absolute deviation of values between Nigeria and each other country as follows:

$$\mathrm{NS_i} = \left|\overline{NV}_i - \overline{NV}_{16}\right|, \mathrm{i} \neq 16 \tag{55}$$

c. Facility similarity

This is calculated as the average of the standardised score of 5 facility variables which are defined as F_{iN};

where $i = 1-16$ for each West African country, including Nigeria and $N = 1-5$ for each measure of tourism facility (UNCTAD, 2007) as follows: $N = 1$ for passenger cars per thousand people; $N = 2$ for motor vehicles per thousand people; $N = 3$ for road paved as a per centage of total road; $N = 4$ for personal computer per hundred people; $N = 5$ for mobile and fixed lines telephone subscribers; $N = 6$ for households with television; and $N = 7$ for population covered by mobile cellular network per centage.

The average $\bar{F}_{.N}$ and standard deviation $\sigma_{F_{.N}}$ of the variables are used to compute the standardised $\ddot{F}_{iN}$ as follows:

$$\ddot{F}_{iN} = \frac{F_{iN} - \bar{F}_{.N}}{\sigma_{F_{.N}}} \tag{56}$$

After adjusting for negative values as earlier explained, the average facility score for each country is obtained as:

$$\bar{\bar{FS}}_i = \frac{1}{7}\sum_{i=1}^{7}\left[2\left|\min \ddot{F}_{iN}\right| + \ddot{F}_{iN}\right] \tag{57}$$

This average facility score is converted to similarity index as follows:

$$\mathrm{FS}_i = \left|\bar{\bar{FS}}_i - \bar{\bar{FS}}_{16}\right|, \mathrm{i} \neq 16 \tag{58}$$

Step 2: **Computation of competitive weight (CW_i)**

This is done by first inverting the three similarity indexes so that high values imply high similarity. The inverted values are labeled as CS_i^*, NS_i^* and FS_i^* for CS, NS and FS respectively. Formally, they can be defined as follows:

$$CS_i^* = \frac{1}{CS_i} \; ; \quad NS_i^* = \frac{1}{NS_i} ; \; FS_i^* = \frac{1}{FS_i} \tag{59}$$

The value is converted to an index that ranges from 0 to 1 by dividing each converted index by its maximum value. It is assumed that Nigeria is a similar country to herself with a similarity index of 0.10 and that the next most similar country has that value of 0.95. Thus, 0.5 is subtracted for the ratio to obtain similar weight as follows:

$$\tilde{\tilde{CS}}_i = \left[\frac{CS_i^*}{\max CS_i^*} - 0.5 \right] ; \tilde{\tilde{NS}}_i = \left[\frac{NS_i^*}{\max NS_i^*} - 0.5 \right] ; \tilde{\tilde{FS}}_i = \left[\frac{FS_i^*}{\max FS_i^*} - 0.5 \right] \tag{60}$$

Where: $\tilde{\tilde{CS}}_i$ = cultural similar weight;
$\tilde{\tilde{NS}}_i$ = natural similar weight; and
$\tilde{\tilde{FS}}_i$ = facility similar weight

The average similarity (AS_i) weight for each country is obtained as a simple average of the above three similarity weight as follows:

$$AS_i = 1/3(\tilde{\tilde{CS}}_i + \tilde{\tilde{NS}}_i + \tilde{\tilde{FS}}_i) \tag{61}$$

The average similar weight is then converted to competitive weight (CW_i) by finding the ratio of the average similarity of each country (AS_i) to the sum of $\sum_{i=1}^{15} AS_i$ such that the sum of the competitive weight is one. That is:

$$CW_i = \frac{AS_i}{\sum_{i=1}^{15} AS_i} \quad , \sum_{i=1}^{15} CW_i = 1 \tag{62}$$

4.3.2. Modelling international demand for Nigeria's tourism

This section discusses the methodology used to address the other objectives of this thesis. Deriving from equations 36, 37 and 46 that $\frac{\partial x_i}{\partial Y_i} > 0$, $\frac{\partial x_i}{\partial p_i} < 0$, $\frac{\partial x_i}{\partial Z_i} > 0$ and $\frac{\partial x_i}{\partial \beta_i} < 0$ in the section on theoretical framework, the basic international demand for tourism in Nigeria can be expressed in panel form as:

$$ID_{i,t} = f\underset{+\quad -\quad +\quad -}{\left(I_{i,t}, P_{i,t}, Z_{i,t}, \beta_{i,t}\right)} = \lambda_0 + \lambda_1 I_{i,t} + \lambda_2 P_{i,t} + \lambda_3 Z_{i,t} + \lambda_4 \beta_{i,t} + \sum_{i=1}^{4} \theta_i D_i + e_{i,t} \tag{63}$$

where $ID_{i,t}$ is the international demand for tourism in Nigeria by people from country i in period t; $I_{i,t}$ is income of the tourists from country i in period t; $P_{i,t}$ is price level in Nigeria facing tourists from country i in period t; $Z_{i,t}$ is tourism facility and attraction in Nigeria enjoyable by tourists from country i in period t, and $\beta_{i,t}$ is risk level in Nigeria facing tourists from country i in period t; D_t is the dummy variable representing the specificity of each origin country. The a priori expectations, as derived in the corresponding section of the theoretical framework are shown below each of the independent variable in the first equality.

Equation 63 can be written in matrix form[14] as:

$$Y = \alpha i_{40} + X_{i,t}^{|}\beta + Z_{\mu}\mu + v = Z\delta + Z_{\mu}\mu + v \tag{64}$$

where

Y is a column vector of order 200 representing the product of the number of origin countries, five (Canada, South Africa, United Kingdom, United States of America, and France), by number periods, 40 quarters (2000:Q1 to 2010:4). The vector contains total international demand for Nigeria's tourism by each origin country over the period.

[14] See Baltagi, 1995 and Hsiao, 2003

α is intercept and i_{40} is a unit vector of dimension 40

$X_{i,t}$ is a matrix order 200 by 4 that contains the values of independent variables, but without provision for intercept which has been taken care of by αi.

$Z_{\mu} = I_5 \otimes i_{40}$, is a selection matrix of ones and zeros; I_5 is an identity matrix of dimension 5.

Z is a matrix of order 200 by 5 that contains the values of independent variables with 1's as the first column, representing the intercept.

α, β, μ and δ are parameters to be estimated.

Equation 64 is estimated using pooled regression, fixed effect and random effect model.

Pooled regression: With the assumption that: $\theta_1 = \theta_2 = \theta_3 = \theta_4 = 0$, applying OLS[15] to equation 64 yields

$$\delta = (Z^{|}Z)^{-1}(Z^{|}Y) \text{ or } \beta_{OLS} = (X^{|}X)^{-1}(X^{|}Y) \tag{65}$$

This involves stacking the 40 quarterly observations for each origin one on top of the other.

Panel fixed effect estimate: The fixed effect model estimators of parameters in 64 can be achieved by making use of two transformation matrixes P and Q such that the sum of the matrixes yield an identity matrix of order 40 (that is, $P+Q=I_{40}$). The fixed effect estimator is derived as[16]:

$$\beta_{FE} = (X^{|}QX)^{-1}(X^{|}QY) \tag{66}$$

***Panel random effect estimate*:** The random effect model is based on application of feasible generalised least square on the transformed model as follows[17]:

[15] See Green,2008, for example, on how to derive pooled least square estimator.
[16] See Davidson and Mackinnon, 2004

[17] See Baltagi, 1995

$$\beta_{RE} = [\mathrm{X}^{|}QX + (\frac{\sigma_v^2}{\sigma_1^2})^2 X^{|}(P - \bar{J}_{200})X]^{-1}[\mathrm{X}^{|}QY + (\frac{\sigma_v^2}{\sigma_1^2})^2 X^{|}(P - \bar{J}_{200})Y] \quad (67)$$

***Individual random coefficient estimates*:** Based on the argument that coefficients of international tourism demand models vary across countries (Witt and Witt, 1995; Kulendran and Witt, 2001), the individual country regression are also obtained for each of the 5 origin countries. This is achieved by using the panel random coefficient model. The panel random coefficient estimator is based on the assumption that the cross-sectional specific coefficient vector β_i is the outcome of a random process with mean vector β and covariance matrix Σ. Equation 64 can be written as follows:

$$\mathrm{Y_i} = \mathrm{X_{i,t}^{|}}\beta_i + \varepsilon_i = \mathrm{X_{i,t}^{|}}(\beta + \nu_i) + \varepsilon = \mathrm{X_{i,t}^{|}}\beta + (\mathrm{X_{i,t}^{|}}\nu_i + \varepsilon) = \mathrm{X_{i,t}^{|}}\beta + \omega_i \quad (68)$$

with $E(\omega_i)=0$ and $E(\omega_i\ \omega_i)=\Pi_i$

The GLS estimate of the mean vector β is as follows[18]:

$$\hat{\beta} = \left(\sum_i X_i^{|}\Pi_i^{-1}X_i\right)^{-1}\sum_i X_i^{|}\Pi_i^{-1}Y_i = \sum_{i=1}^{5} W_i b_i \ ; \ W_i = \left\{\sum_{i=1}^{5}(\Sigma + V_i)^{-1}\right\}^{-1}(\Sigma + V_i)^{-1}$$
$$b_i = (X_i^{|}X)^{-1}X_i^{|}Y \quad ; \quad V_i = \sigma_i^2(X_i^{|}X)^{-1} \quad (69)$$

The feasible best linear predictor of the cross-sectional specific coefficient vector β_i is expressed as[19]:

$$\hat{\beta}_i = \hat{\beta} + \hat{\Sigma}X_i^{|}(X_i\hat{\Sigma}X_i^{|} + \hat{\sigma}_i^2\mathrm{I})^{-1}(Y_i - X_i\hat{\beta}) \quad (70)$$

***International demand for business and holiday tourism in Nigeria*:** To estimate separate demand models for business and holiday tourism, equations 65, 66, 67 and 70 are estimated with vector Y now defined as first, the vector of international demand for Nigeria's business tourism by each origin country over the period and second, the vector of international demand for Nigeria's holiday tourism by each origin country over the period and third. Matrix X and Z retain their definitions.

[18] See Swamy 1970
[19] See Judge *et al*., 1985

Competitors' variables in international demand for Nigeria's tourism: To determine the impact of competitors' variables on total international demand for Nigeria's tourism, equations 65, 66, 67 and 70 are estimated after adding competitors' price, competitors' facility and competitors' risk such that equation 63 becomes:

$$ID_{i,t} = f\left(\underset{+}{I_{i,t}}, \underset{-}{P_{i,t}}, \underset{+}{P_{j,t}}, \underset{+}{Z_{i,t}}, \underset{-}{Z_{j,t}}, \underset{-}{\beta_{i,t}}, \underset{+}{\beta_{j,t}}\right) \quad (71)$$

while vector Y retains its definition in equations 65, 66, 67 and 70; $X_{i,t}$ is now defined as a matrix of order 200 by 7; $Z_{\mu} = I_7 \otimes i_{40}$, is a selection matrix of ones and zeros; Z is a matrix of order 200 by 7 that contains the values of independent variables with 1's as the first column, representing the intercept. Vector Y is redefined as the vector of international demand for Nigeria's business tourism and the vector of international demand for Nigeria's holiday tourism to determine the impact of competitors' variables on International demand for Nigeria's business and holiday tourism.

4.3.3. Measures and description of the variables

Based on the symbols in equation 71 above, each of the variables and its measures are explained below:

$ID_{i,t}$ (International demand for Nigeria's tourism): In line with conventional practice by the tourism scholars (Witt and Witt, 1995; Song and Li, 2008), tourism demand is measured by international tourism arrivals. This series is obtained from Euromonitor International, 2011. The symbols used for this variable in empirical estimation and results are '**lnarrivals**', '**lnbusarrival**' and '**lnholarrivals**' to represent natural logarithm of total, business and holiday tourism arrivals.

$I_{i,t}$ (Income of tourists): Since data on discretionary income of tourists after purchase of necessity is not available, common measures of tourists' income in the literature include nominal or real gross domestic income and nominal or real per capita gross domestic income

(Lim, 1997; Kulendran and Witt, 2001). Because tourism travel decision is made by individuals and not at national level, this thesis makes use of real per capita GDP. The data is obtained from World Bank's World Development Indicator (WDI), 2011. This is represented by ''**gdp''** in the empirical analysis.

$P_{i,t}$ (Price paid by tourists in Nigeria): Measures tourism price which includes exchange rate, travel cost, costs of goods and services in destinations and costs of utilities (Prideaux, 2004; Walle, 2010; Edward 1988; Little, 1980; Loeb, 1982; Witt and Martin, 1987). This thesis computes price as the average of Adjusted Price of Consumer Goods (APCG), Communication Cost Index (CC) and Fuel Price Index (FP), that is:

Price = Average (APCG, CC, FP)
where APCG = CPI/Index of official exchange rate per US$
CC = Index of average price of international call to US per 30 minutes (US$)
FP = Average (Index of pump price for gasoline, Index of pump price for diesel)

Exchange rate, price of international call, price of gasoline and price of diesel are converted to index using the same base year for CPI. All variables are obtained from World Bank's Africa Development Indicators (ADI), 2011. This variable is represented by **'lnpricengr'** to represent natural logarithm of tourism price in Nigeria.

$P_{j,t}$ (Price paid by tourists in competing destinations): This is measured like the tourism price in Nigeria above for each of the other West African countries. The competitive share of each country is then used to obtain the weighted average. This variable is represented by **'lnpricecpt'** to represent natural logarithm of tourism price in competing destinations.

$Z_{i,t}$ (Tourism facilities in Nigeria): This is measured as the average of standardised value of five variables of transport and communication infrastructure in Nigeria. The variables used are the relevant basic and operational facilities for tourism (UNCTAD, 2007). The five variables used are as follows:

- air transport passenger carried;
- registered air transport carrier departures worldwide;
- road to arable land density (road km/1000 ha arable land);
- mobile phone subscribers per 1000 people; and

- passenger cars per 1000 people

All variables are obtained from World Bank's Africa Development Indicators (ADI), 2011. The natural logarithm of tourism facilities in Nigeria is represented by **'lnfactyngr'**.

$Z_{j,t}$ (Tourism facilities in competing destination): This is calculated like the tourism facility in Nigeria for each of the other West African countries. The weighted average of the resulting figures is then calculated using each country's competitor index as the weight. The empirical representation of the natural logarithm of tourism facilities in competing destinations is **'lnfactycpt'.**

$\beta_{i,t}$ (Risk faced by tourists in Nigeria): Tourists are concerned about political and health risks (Giacomelli, 2006a). This thesis proxy risks by a simple average of health risk and political risk as sourced from World Bank's ADI, 2011. The health risk is measured as average for three variables while political risk is measured as a average of five variables of governance. The health risk variables are: incidence of tuberculosis per 100,000 people; total high estimate number of PLWHA and total reported clinical malaria cases. Measures of political risk are as follows:

- corruption perception index score[20];
- political stability/No violence estimate (Goldstone *et al*, 2000);
- combined polity score (Marshall and Jagger, 2002);
- regulatory quality estimates;
- estimate of rule of law; and
- estimate of voice and accountability.

This variable is represented by **'lnriskngr'**, to be interpreted as the natural logarithm of tourism risk in Nigeria.

$\beta_{j,t}$ (Risk faced by tourists in competing destinations): This is computed as the weighted average of tourism risk in each of the other West African countries, using competitor's index (from equation 62) as the weight. Tourism risk in each of these countries is calculated as for

[20] See Transparency International Website http://cpi.transparency.org/cpi2012/

that of Nigeria described earlier. The empirical representation of natural logarithm of tourism risk in competing destinations is **'lnriskcpt'**.

All variables are expressed in logarithm so that the parameter estimates can be interpreted as elasticity (Gormus and Gocer, 2010; Habib and Rahimm 2009). Also, all annual variables are converted to quarterly series using the approach suggested by Chow and Lin, 1991. This is to improve the accuracy of the estimates. The results obtained after estimating equations 65, 66, 67 and 70 using data on each variable as defined earlier are presented and interpreted in the next chapter.

CHAPTER FIVE

PRESENTATION AND INTERPRETATION OF RESULTS

Following the methodology described in the previous chapter, this chapter contains computation of similarity-dissimilarity index and competitor's weights of other West African countries, analysis of international demand for Nigeria's aggregate tourism, analysis of international demand for Nigeria's business and holiday tourism and the impact of competitor's variables on international demand for Nigeria's tourism.

5.1. Similarity-dissimilarity of other West African countries to Nigeria's tourism

As a subregion, West Africa has unique tourism assets compares to other subregions (Tables 2 and 3), in view of this, for any non-West African tourist that visits Nigeria, other West African countries are potential competitors. The strength of their competition depends on the degree of their similarity to Nigeria's tourism-related characteristics that define the preference of such foreign tourist. The tourism-related characteristics can be divided into three, viz: cultural, natural and facilities. The average similarity of each West African country to Nigeria is used to compute competitor's weight used to estimate the competitors' parameters. Each of the three similarity-dissimilarity characteristics is explained in the following subsections.

5.1.1. Cultural similarity of other West African countries to Nigeria's tourism

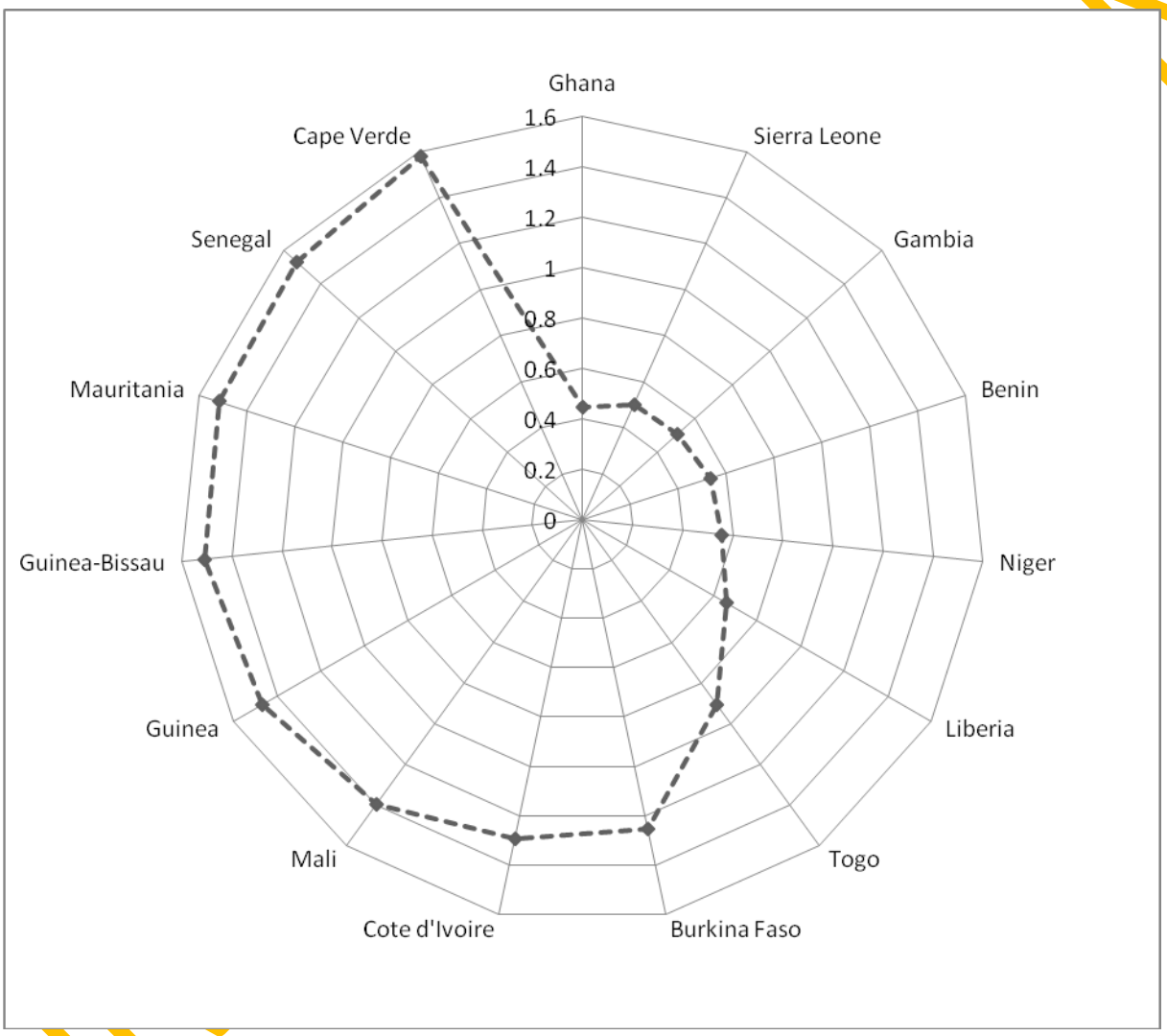
The cultural similarly-dissimilarity of Nigeria with other West African countries is illustrated in Figure 5.1. The spider chat plots the average similarity as defined by equation 49. One of the countries that have similar cultural identity with Nigeria is Ghana with average CS index

of 0.45. Like Nigeria, Ghana's official language is English due to the fact that both countries were colonised by Britian. In addition to the official language, Ghana and Nigeria share some common non–official languages. Due to short distance, many Nigerians with Hausa and Yoruba dialects reside in Ghana, especially in Accra. The actual distance between the two countries is 659.12 km. This affinity facilitates cultural interaction and diffusion between these two countries.

Sierra Leone is the second most culturally related country to Nigeria in West Africa despite the fact that they do not share boundary. The cultural situation of Sierra Leone to Nigeria is similar to that of the Gambia which has the third ranking on CS scale. Despite her contiguity with Nigeria, Benin Republic ranks after Sierra Leone and the Gambia in terms of CS with Nigeria because of language barrier. While Nigeria was colonized by Britain, Benin was colonised by France. This somewhat makes the two countries to have different official languages English and French, for Nigeria and Benin respectively.

Another country that share boundary with Nigeria in West Africa, apart from Benin Republic is Niger. The country is the fifth most culturally-related country with Nigeria, ranking after Benin. Niger had different colonial master and speaks different official language compare to Nigeria. The distance between the major cities in Nigeria and that of Niger is 684.06km, which is longer than that between Nigeria and Ghana, as well as between Togo and Nigeria which are 659.12km and 429.68km respectively. Niger is followed by Liberia on the CS scale with Nigeria, though the country has different colonial master with Nigeria, it has the same official language with Nigeria. There is also significant proportion of population that speaks the same non–official languages in Nigeria and Liberia. The standardised score of the distance between the major cities in the two countries is 0.87.

Figure 5.1. Cultural similarity and dissimilarity of Nigeria with other West African countries



Source: Author's computation

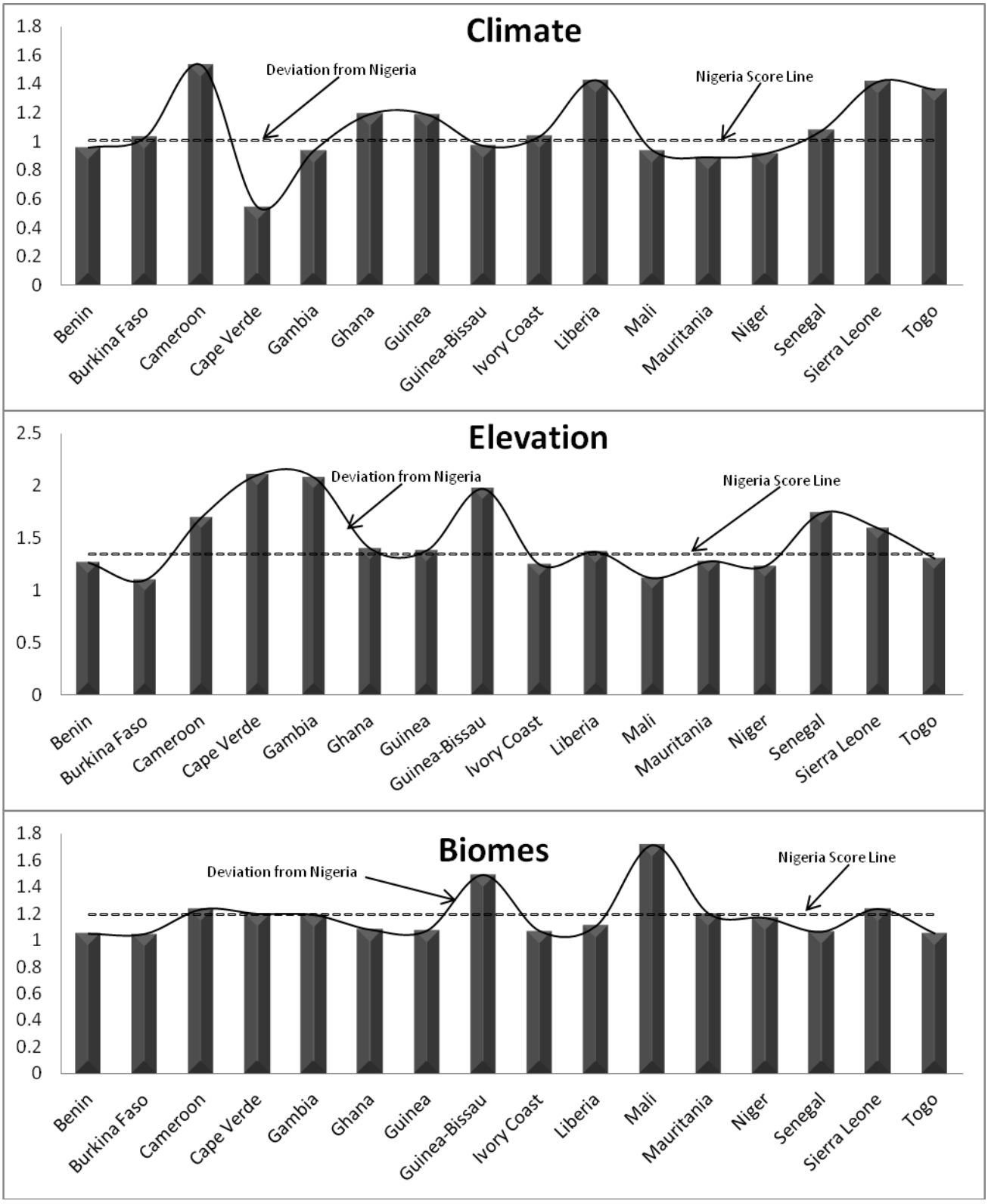
Liberia is followed by Togo, Burkina–Faso, Cote d'lvoire and Mali in order of CS. None of these countries share boundary, official language, non–official language or colonial master with Nigeria. The CS ranking is influenced by the distance between the major cities in Nigeria and in each of the countries which are 429.68km^2, 990.01km, 1,114.62km, and 1,511.51km respectively. Guinea, Guinea–Bissau, Mauritanian, Senegal and Cape Verde have approximately the same standardised cultural similarly score of 1.5. The major city distance between Nigeria and these countries are 2,005.33km 2352.52km 2,476.28km, 2,566.83km^2, and 3,342.48km^2.

5.1.2. Natural similarity of other West African countries to Nigeria's tourism

The NS of Nigeria with other West African countries for climate, elevation and biomass is demonstrated in Figure 5.2. The height of the bar chart represents the average standardised value of the climate condition in each country. The dotted lines represent Nigeria's value while the smooth curve shows the deviation of the score of each of the other 15 countries from Nigeria. The topmost chart is for the climate similarly. The most similar countries in terms of climate are Cote d'lvoire, Guinea-Bissau Benin, Senegal and the Gambia in order of similarity. No part of Nigeria has climatic zone with annual temperature of less than 5^{o}c with more than 60mm rain in the driest month (Appendix IV). This is true for all other West African countries except Liberia in which about 27 per cent of land area falls in this climate category. The prominent climate in Nigeria is the tropical monsoon type with short dry season in which the ground is wet all year. About 56per cent of the land area in Nigeria and Burkina–Faso falls in the same climate category. The equivalent land area in Ghana, Togo, Guinea–Bissau and Guinea are 43 per cent, 61 per cent, 62 per cent and 69 per cent respectively. There is wider coverage of this type of climate in Benin and Gambia. The per centage land area of this climate type in the two countries is 80per cent and 83per cent respectively. On the other hand, Senegal, Cote d'lvoire, Sierra–Leone and Mali, have land areas of 29 per cent, 22 per cent, 16 per cent and 14 per cent respectively in this category. Liberia, Mauritanian and Niger do not experience this type of climate at all.

Sierra–Leone and Guinea have 13 per cent and 9 per cent of land area respectively in the climate type of tropical distinct dry season with one month in which precipitator is less than 60 mm and temperature greater. No other country in West Africa has this type of climate.

Figure 5.2. Natural similarity and dissimilarity of Nigeria with other West African countries



Source: Author's computation

Only 12per cent of the land area in Nigeria belongs to tropical distinct dry season with one month in which precipitation is less than 60mm but temperature less than 5^{o}C. Benin, the Gambia, Sierra– Leone, Guinea and Liberia have 11 %, 14 %, 14 %, 18 % and 20 % land areas of this climate type respectively. This climate type covered 33 %, 38 %, 53 % and 66 % of land area in Togo, Guinea-Bissau, Ghana and Cote d'lvoire respectively. The most dissimilar countries with Nigeria based on precipitation and temperature are Cape Verde, Liberia, Sierra– Leone and Togo in that order of dissimilarity.

The middle chart in Figure 5.2 illustrates the similarity of Nigeria with other West African countries in terms of topography and elevation of the land area. The most similar countries to Nigeria in terms of elevation are Liberia, Togo, Guinea and Ghana in that order of similarity. About 42 % of land area in Nigeria has elevation of between 200 and 400 metres. This is against 95 %, 86 %, 65 %, 65 % and 60 % in Burkina-Faso, Mali, Mauritania, Benin and Ivory Coast respectively. This elevation covers 41per cent of land area in Liberia and Togo and 34 %, 33 %, 21 %, 20 % and 16 % for Ghana, Niger, Guinea, Sierra-Leone and Cape Verde respectively. In Nigeria, about 26per cent of land area has elevation of between 400 and 800 metres and about 16per cent of land area is between 100 and 200 metres. The dissimilar countries in terms of elevation are Cape Verd, The Gambia and Guinea-Bissau in that order of dissimilarity. In these countries, the per centage of land area with elevation of less than 5 metres are 15 per cent, 17 per cent and 9per cent respectively compared to 1 per cent in Nigeria. Similarly, the land area in the elevation between 25 and 50 metres are 9 per cent, 41 per cent and 28 per cent respectively as against 1per cent in Nigeria.

The third chart in figure 5.2 contains the similarity of Nigeria with other West African countries in terms of biomes. The similar countries to Nigeria based on biomes are Cape Verde, Mauritania, The Gambia, Niger, and Sierra-Leone in that order of similarity. About 82per cent of land area belongs to the biomass class of tropical and subtropical grassland, savanna and shrubs lands. The equivalent land areas in the biome class are 100 %, 99 %, 91 %, 90 % and 120% in Burkina–Faso, Benin, Senegal, The Gambia and Togo respectively. Dissimilar countries with Nigeria in terms of biomes class are Mali, Guinea-Bissau, Burkina-Faso, Benin and Togo in that order of dissimilarity while 42 and land area in Mali has become class of desert, and shrub lands, the area of Nigeria in the biome class is 0per cent. Guinea–Bissau has 28 and of land area in biome class of mangroves, while Nigeria has only 2 % land area in this biomes class.

5.1.3. Facility similarity of other West African countries to Nigeria's tourism

Table 11 contains the standardised score of tourism related facility in Nigeria and other West African countries. Similar countries to Nigeria in terms of passenger cars per thousand people are Guinea-Bissau, Ghana, Niger, Benin and Senegal in order of similarity while the standardised score of Nigeria for this variable is 2.70, it is 2.45, 2.09, 1.83, 1.80 and 1.71 for these five countries respectively. The actual number of passenger's cars per thousand people is 30.81 in Nigeria and 26.80 in Guinea–Bissau and 21.05 in Ghana (Appendix III).

For the total number of motor vehicles per thousand people, the similar countries to Nigeria are Guinea-Bissau, Ghana, Mauritania, Benin and Senegal in that order of similarity. The standardised value of motor vehicle per thousand in Nigeria is 2.15 as against 2.24, 2.25, 1.69, 1.68 and 1.66 respectively in these countries. Dissimilar countries with respect to this variable are Cape Verde, Togo, Liberia, Sierra Leone and Guinea in order of dissimilarity with standardised values of 5.07, 0.81, 0.86, 0.96 and 1.00 respectively.

The road paved as a percentage of total roads in Nigeria is 25.57per cent. This value is close to 22.82 per cent, 23.44per cent and 28.69per cent for Ghana, Niger and Senegal respectively. However, the values of 76.51per cent, for Cape Verde is far higher than that of Nigeria while those of 6per cent, 9.18per cent and 9.29per cent for Liberia, Sierra Leone and Ivory Coast respectively are far lower than that of Nigeria.

The number of personal computers per thousand people in Nigeria is 9. This is not significantly different from the values of 8, 7, 6 and 11 for Mali, Benin, Burkina–Faso and Ghana respectively. Similar countries with Nigeria in terms of personal computers per thousand are Cape Verde, Mauritanian, the Gambia and Togo with values of 142, 45, 35 and 31 respectively.

Table 11. Facility similarity - dissimilarity of Nigeria with other West African countries

	pcptp	Mvptpp	rpptroad	pctp	mnflts	pcmcnp
Benin	1.80	1.68	1.73	0.90	0.67	5.13
Burkina Faso	1.17	1.22	1.53	0.88	0.61	4.27
Cameroon	1.38	1.29	1.26	1.03	0.86	4.13
Cape Verde	5.01	5.07	5.27	4.98	0.46	5.85
Cote d'Ivoire	1.28	1.25	1.14	1.19	1.15	4.17
Gambia, The	1.08	1.06	2.54	1.75	0.51	5.35
Ghana	2.09	2.25	1.97	1.01	1.21	4.81
Guinea	1.33	1.00	1.53	0.84	0.69	5.13
Guinea-Bissau	2.45	2.24	1.27	0.75	0.47	4.45
Liberia	0.89	0.86	0.94	1.59	0.48	2.24
Mali	1.20	1.15	1.32	0.93	0.67	2.47
Mauritania	1.52	1.69	1.42	2.06	0.58	4.31
Niger	1.83	1.37	2.01	0.71	0.56	3.54
Nigeria	2.70	2.15	2.14	0.94	4.69	5.26
Senegal	1.71	1.66	2.33	1.36	0.81	5.35
Sierra Leone	0.94	0.96	1.13	1.59	0.50	4.67
Togo	0.86	0.81	2.40	1.62	0.55	5.35

pcptp-- passenger cars per thousand people

mvptpp -- motor vehicles per thousand people

rpptroad -- road paved as a per centage of total road

pctp -- personal computer per thousand people

mnflts -- mobile and fixed lines per telephone subscribers

pcmcnp -- population covered by mobile cellular network per centage

Source: Author's Computation (underlying data from ADI, 2011)

The number of mobile and fixed lines telephone subscribers is about 64.3million in Nigeria, followed by Ghana with 4.7million people. The dissimilar countries to Nigeria in terms of number of telephone subscriber are Cape Verde, Guinea-Bissau, Liberia, Sierra Leone and the Gambia. The percentage of population covered by mobile cellular network in Nigeria is 83 per cent. Countries with similar mobile coverage are The Gambia, Senegal, Togo and Benin with 85per cent, 85per cent, 85per cent and 80per cent coverage respectively. The dissimilar countries to Nigeria in terms of mobile coverage are Liberia, Mali and Niger with coverage of 16 per cent, 22 per cent and 45 per cent coverage respectively.

Considering all the facility measures, similar countries to Nigeria are Ghana, Cape Verde, Senegal, Benin and The Gambia in that order of similarity. On the other hand, the dissimilar countries to Nigeria in terms of facility are Liberia, Mali, Niger, Burkina Faso and Guinea, in that order of dissimilarity.

5.1.4. Computation of competitive weights for other West African countries

Table 12 contains the competitive weights as derived from the adjusted natural, cultural and facility similarity-dissimilarity indices. With the assumption that the similarity of Nigeria to itself is one, the similarity of each other country is measured by closeness of their index to one. Similar countries in terms of natural characteristic are Benin, Togo, Burkina–Faso, Guinea and Ghana in that order of similarity; with NS index of 0.96, 0.94, 0.91, 0.91 and 0.80 respectively. Naturally dissimilar countries to Nigeria are Cape Verde, Liberia, Mauritania, Niger and Sierra Leone with NS index of 0.01, 0.24, 0.35, 0.42 and 0.45 respectively.

Table 12. Competitive weights of other West African countries

Countries	NS Index	CS Index	Facility Similarity Index	Average Similarity Index	Competitive Weights
Benin	0.95	0.79	0.69	0.81	0.09
Burkina Faso	0.91	0.33	0.47	0.57	0.06
Cape Verde	0.01	0.26	0.76	0.34	0.04
Cote d'Ivoire	0.71	0.32	0.66	0.56	0.06
Gambia	0.78	0.82	0.67	0.76	0.08
Ghana	0.8	0.93	0.93	0.89	0.09
Guinea	0.91	0.28	0.51	0.57	0.06
Guinea-Bissau	0.73	0.28	0.59	0.53	0.06
Liberia	0.24	0.63	0.36	0.41	0.04
Mali	0.6	0.3	0.43	0.44	0.05
Mauritania	0.35	0.27	0.65	0.42	0.04
Niger	0.42	0.75	0.46	0.54	0.06
Senegal	0.75	0.27	0.74	0.59	0.06
Sierra Leone	0.45	0.83	0.66	0.65	0.07
Togo	0.94	0.46	0.59	0.66	0.07
TOTAL				9.45	1.00

Source: Author's Computation

In terms of Cultural Similarity, similar countries to Nigeria are Ghana, Sierra–Leone, The Gambia, Benin and Niger with CS index of 0.93, 0.83, 0.82, 0.79 and 0.75 respectively. On the other hand, the culturally dissimilar countries are Cape Verde, Mauritanian, Senegal, Guinea and Guinea Bissau with culturally dissimilarity indexes or indices of 0.26, 0.27, 0.27, 0.28 and 0.28 respectively. Concerning the similarity of facility in other West African countries to that of Nigeria, Ghana has the highest similarity index of 0.93. This is followed by Cape Verde, Senegal, Benin and the Gambia with indexes of 0.76, 0.74, 0.69 and 0.67 respectively.

Considering the three categories of similarity indexes, the average similarity score for Ghana is 0.89 making Ghana the most similar, from international tourism perspective, to Nigeria, followed by Benin, The Gambia and Togo with average similarity index of 0.81, 0.76 and 0.66 respectively. The least similar countries are Cape Verde, Liberia and Mauritania with average similarity indexes of 0.34, 0.41 and 0.42 respectively. Based on the average similarity index, the competitive share of each country is shown in the last column of Table 12. The values reveal that Ghana, Benin, The Gambia and Togo are the main competitors of Nigeria in the international tourism market with competitor's share of 0.10, 0.09 and 0.09 respectively. This is followed by Burkina Faso, Senegal and Sierra Leone with share of 0.07 each. The weakest competitor is Cape Verde with competitive share of 0.04, followed by Mali, Liberia and Mauritania with share of 0.05 each.

5.2. International demand for Nigeria's tourism

This subsection contains estimates of the international demand models for Nigeria's tourism in aggregate and for specific origins countries.

5.2.1. Panel results

Table 13 presents the parameter of model of international tourists' arrivals in Nigeria using pooled regression, fixed effects and random effects estimation. The coefficient of pooled model is the lowest for tourist's income, risk, and price but highest for facility and the constant term. The F–score and its P–value of 3196.62 and 0.0000 respectively for poolability test suggest that the pooled regression cannot be better than the panel regression.

Table 13. Panel results of international demand for Nigeria's tourism

lnarrivals=f(lngdp, lnrisksngr, lnpricengr, lnfactyngr)[+]			
	Pooled Estimates	**Panel Fixed Effect**	**Panel Random Effect**
lngdp	0.1267	0.1497	0.1496
	0.0068***	0.0217***	0.0217***
lnrisksngr	-0.004	-0.0063	-0.0063
	0.1027	0.0168	0.0168
lnpricengr	-0.0283	-0.0314	-0.0314
	0.0501	0.0068**	0.0067***
lnfactyngr	0.0473	0.0428	0.0422
	0.0241*	0.0106**	0.0106***
Constant	0.0910	0.0427	0.0431
	0.1934	0.0731	0.0769
R^2	0.3605	0.9019	0.9019
F-value/	96.91	439.14	1766.46
Wald Chi-square	(0.0000)	(0.0000)	(0.0000)
Model selection Test	3196.62[(1)]	0.03[(2)]	3779.78[(3)]
	(0.0000)	(0.9883)	(0.0000)
Number of Observations (N)	200	200	200

+ see section 4.3.3. for full description of variables

*significant at 10per cent, ** significant at 5per cent, *** significant at 1per cent

( ) – robust standard error

[(1)]– F-value for poolability test

[(2)]– Hausman chi-square

[3]– Breusch-Pagan chi-square

The coefficient of the multiple determination (R^2) of about 36 per cent also support the poor fit of the pooled estimate. For the panel estimates, the results of fixed effect and random effect are of the model similar. To make a choice between the fixed effect model and the random effect model, the Hausman chi-square of almost unit probability fails to support the superiority of fixed effect model. The Breach–Pagan LM test significant at 1 per cent indicates that neither the pooled model nor the fixed effect model is better than the random effect model. All partial slope coefficients have expected signs while the intercepts is positive. Thus, the remaining part of the analysis is based on the random effect model.

Tourist's income and facility have positive impacts on international tourists' arrivals while risk and price have negative impacts on arrivals. The income elasticity of 0.15 implies that 1per cent increase in per capita income of tourists, on average, is associated with 0.15per cent increase in tourism arrivals in Nigeria. Thus international demand for Nigeria's tourism is income inelastic. This income elasticity is lower than many estimates report in empirical tourism literature. Three reasons are discernible for this result. First, significant proportion of tourists that visit Nigeria during the period would increase their visit to more luxurious destinations rather than increasing their visit to Nigeria. Second, Nigeria do not enjoy significant repeated visitation from tourists such that additional income do not induce them to increase their frequency of travel to Nigeria. Third, increase in income leads to higher expenditure per visits rather than increasing number of visits.

Concerning the risk parameter which is not significant, this suggests a drag on the international tourists' arrival in Nigeria as a result of risk factors like insecurity, violence or health hazard is negligible. One plausible explanation for this is that foreign tourists do not get scared of Nigeria because of this imminent risk. This could be because they are well informed about the nature and scope of any crisis. A well informed tourist will only adjust the timing and places to visits in order to minimise risk exposure in Nigeria. It is also possible that the high risk averse foreign tourists do not include Nigeria in their itineraries and that those that visit Nigeria are comfortable with the risk level in Nigeria.

The own price elasticity of international tourism demand in Nigeria is -0.03. This indicates that international demand for Nigeria tourism is price inelastic. Though, this value is lower than most of the tourism price elasticities reported in the literature, it is consistent with the

argument of Walle (2010) that tourism in SSA is price inelastic. A plausible explanation for this is exchange rate effect of devalued naira. This reduces the impact of exposure of foreign tourists to rise in price level in Nigeria.

On the other hand, it is also possible for foreign tourists with interest in visiting Nigeria to reduce consumption of other goods to make room for higher budget allocation to tourism in Nigeria, thus, leading to low response to rise in price level in Nigeria. This will mean international tourism is more or less a necessity and tourists demand inelastic.

The coefficient of the facility variable of 0.04, indicates that the own facility elasticity of international demand for Nigeria's tourism is 0.04. This means a 100 per cent increase in tourism related facility and infrastructure in Nigeria will only increase international tourists' arrivals by just 4per cent. A plausible explanation for this is that tourism related facility in Nigeria is currently below the necessary threshold that can generate significant pull of international tourists. When tourist infrastructure reach a significant level, the international tourism demand model will demonstrate structural break and response of international arrivals to change in facility can then improve significantly. The intercept term is not significant, indicating that when none of these factors is considered, international arrivals in Nigeria will be negligible.

5.2.2. Individual country results

Table 14 contains the aggregate tourism demand model for each of the five origin countries. The high value of the coefficient of multiple determinations implies that the parameters jointly explained more than 90 per cent of the variation in international tourists' arrivals from each of the five origin countries. All the chi–square values for testing joint significant of the model are significant at 1per cent for all origins. In addition, the root mean square error (Root MSE) is lower than 0.01 for all origins. These suggest that the model has good fit for the data used. In terms of sign of the parameters, individual estimates are similar to joint model in Table 13 except that risk parameter is significant for South Africa and UK. while intercept is negative for Canada and USA.

Table 14. Individual international demand model for Nigeria's tourism

lnarrivals=f(lngdp, lnrisksngr, lnpricengr, lnfactyngr)[+]					
	Canada	**South Africa**	**UK**	**USA**	**France**
lngdp	0.1531	0.1165	0.1856	0.3275	0.1444
	0.0121***	0.0089***	0.0073***	0.0229***	0.0141***
lnrisksngr	0.0099	-0.0495	-0.0414	0.0114	0.0328
	0.0169	0.0196**	0.0119***	0.0156	0.0230
lnpricengr	-0.0528	-0.0216	-0.0143	-0.0400	-0.0252
	0.0081***	0.0098**	0.0056**	0.0074***	0.0108**
lnfactyngr	0.0529	0.0202	0.0160	0.0456	0.0515
	0.0051***	0.0049***	0.0032***	0.0047***	0.0060***
Constant	-0.0706	0.2242	0.0826	-0.5004	0.0303
	0.0411	0.0387***	0.0265***	0.0626***	0.0505
R^2	0.9675	0.9324	0.9748	0.9671	0.9381
Chi-square	1395.39	607.42	2013.24	1498.94	683.82
	[0.0000]	[0.0000]	[0.0000]	[0.0000]	[0.0000]
Root SME	0.0032	0.0035	0.0022	0.0031	0.0042
N	40	40	40	40	40

+ see section 4.3.3 for full description of variables

*significant at 10per cent, ** significant at 5per cent, *** significant at 1per cent

[ ] – p-value for Chi-square of overall significant

Concerning the income parameter, the value ranges from 0.12 for South Africa to 0.33 for USA, while the values confirm that the international demand for Nigeria's tourism is income inelastic, the actual values of elasticity varies across the countries of origin. A per centage increase in income of tourists will increase international tourists' arrivals in Nigeria by 12per cent for tourists from South Africa, but by 14 per cent, 15 per cent, 19 per cent and 33 per cent for tourists from France, Canada, UK, and USA respectively.

The fact that risk parameter is significant for South Africa and UK implies that these two countries are more wary of their safety issues in Nigeria. Though significant, the elasticities are low. They are -0.05 and -0.04 respectively. Thus, the explanation given in the previous section for the attitude of foreign tourists to risk in Nigeria still holds.

For price, the own price elasticity of international demand for Nigeria's tourism is lowest for UK, followed by South Africa and France. The absolute values of elasticities for these countries are 0.01, 0.02, and 0.03 respectively. USA and Canada have higher corresponding values of -0.04 and -0.05 respectively. As discussed earlier, this confirms that international demand for Nigeria tourism over the study period was price inelastic.

Concerning the response of international tourists' arrivals in Nigeria to changes in the level of tourism related facility in Nigeria; the results vary across countries of origin. A 10per cent increase in tourism related infrastructure in Nigeria is associated with rise of 0.16per cent, 0.20 per cent, 0.46 per cent, 0.52 per cent and 0.53 per cent for tourists from UK, South Africa, USA, France and Canada respectively. Though the magnitude varies, international tourists' arrivals in Nigeria are facility inelastic.

Though the intercept values do not always have economic meaning, it is possible to infer interpretation based on the functional forms of the model. For Canada, the intercept value is -0.07. This implies that if all variables in the model are removed, natural log of international arrivals will be this value, taking the exponential yield 0.932 which implies that about 932 Canadians will still visit Nigeria. While it is plausible to imagine a tourist that does not bother about risk, price and facility in Nigeria, it is more difficult to imagine a foreign tourist that makes travel decision without making references to his/her income. However, this is not as odd as it sounds when considering possibility of sponsored trips. Following this line of

argument, the autonomous tourism arrivals from South Africa, UK and USA are 1,251, 1,086, and 606 people respectively. The intercept is not significant for France.

5.3. Business and holiday tourism

This subsection contains estimates of the international demand for Nigeria's business and holiday tourism in aggregate and for specific origin countries.

5.3.1. Panel results

Table 15 contains the pooled and panel results for business and holiday tourism in Nigeria. As for Table 13, the poolability test, the Hausanan test and the Breuseh-Pagan test support the preference for the random effects estimates. The F-test and the Wald Chi-square test of overall fitness are all significant at 1per cent. The R^2 value indicates that the proportion of variations in international tourists' arrivals jointly explained by the determinants is 89per cent for business tourism and 84per cent for holiday tourism. The income elasticity of international tourism arrival in Nigeria is 0.35 and 0.25 for business and holiday tourism respectively. Thus business tourists are more sensitive to income than holiday tourists.

For price, the parameter of holiday tourism is not significant while the own price elasticity of international business tourists' arrivals in Nigeria is -0.05. As shown in Table 13, risk parameter is not significant. The parameter of facility is also higher for business than holiday tourism; while it is 0.08 for business tourism, it is 0.07 for holiday tourism. In general, business tourists are more sensitive to changes in price than holiday tourists. A plausible reason for this is the importance of cost benefit reasoning in travel decision process of business tourists. This is not of much importance to holiday tourists who are more concerned about relaxation and esthetic satisfaction.

Table 15. Panel international demand for Nigeria's business and holiday tourism

lnarrivals=f(lngdp, lnrisksngr, lnpricengr, lnfactyngr)[+]						
	Business			**Holiday**		
	Pooled Estimates	**Panel Fixed Effect**	**Panel Random Effect**	**Pooled Estimates**	**Panel Fixed Effect**	**Panel Random Effect**
lnpricengr	-0.0405 (0.1206)	-0.0475 (0.0159)**	-0.0475 (0.0158)***	-0.0189 (0.1171)	-0.0131 (0.0167)	0.0131 (0.0166)
lngdp	0.2976 (0.0162)***	0.3494 (0.0490)***	0.3490 (0.0490)***	0.2912 (0.0158)***	0.2480 (0.0326)***	0.2480 (0.0324)***
lnrisksngr	-0.0422 (0.2477)	-0.0461 (0.0386)	-0.0461 (0.0386)	0.0112 (0.2401)	0.0144 (0.0327)	0.0144 (0.0328)
lnfactyngr	0.0899 (0.0580)	0.0783 (0.0243)**	0.0784 (0.0244)***	0.0593 (0.0564)	0.0690 (0.0228)**	0.0689 (0.0229)***
Constant	0.4438 (0.4664)	0.3350 (0.1664)	0.3359 (0.1762)*	0.3141 (0.4521)	0.4047 (0.1231)**	0.4040 (0.1324)***
R^2	0.3436	0.8909	0.8907	0.3309	0.8363	0.8363
F-value/ Wald Chi-square	92.28 (0.0000)	389.10 (0.0000)	1565.32 (0.0000)	91.22 (0.0000)	243.97 (0.0000)	982.04 (0.0000)
Model selection test	3306.25[(1)] (0.0000)	0.02[(2)] (0.9999)	3784.00[(3)] (0.0000)	3242.63[(1)] (0.0000)	0.02[(2)] (0.9998)	3782.61[(3)] (0.0000)
N	200	200	200	200	200	200

+ see section 4.3.3 for full description of variables
*significant at 10per cent, ** significant at 5per cent, *** significant at 1per cent
( ) – robust standard error
[(1)]– F-value for poolability test
[(2)]– Hausman chi-square
[(3)]– Breusch-Pagan chi-square

5.3.2. Individual country results

Table 16 contains the individual country's results for both business and holiday tourism. As shown in panels A and B, both models have good fit considering the values of R^2, the overall Chi-square and the Root MSE. Notably, the variations in arrivals as explained by all determinants are higher for business tourism than holiday tourism. For business tourism, the variations explained are 96 per cent, 93 per cent, 96 per cent, 96 per cent and 92 per cent for Canada, South Africa, UK, USA and France respectively. The corresponding figures for holiday tourism are 92 per cent, 89 per cent, 91 per cent, 89 per cent and 86 per cent respectively. Also, the Chi-square values of overall significance are higher for business tourism compared to holiday tourism. The response of each origin to changes in parameters varies. Income variable is significant at 1 per cent for all origins in both business and holiday tourism, though with the former having higher elasticity coefficient. The income elasticity for business and holiday tourisms are 0.35 and 0.21 respectively for Canada, 0.27 and 0.20 respectively for South Africa, 0.41 and 0.28 respectively for UK, 0.73 and 0.41 respectively for USA, and 0.31 and 0.20 respectively for France. As discussed earlier, this suggests that income is more important in international tourism decision process for business tourists than holiday tourists.

Considering the risk parameters, it is not significant for business and holiday tourists from Canada, USA and France. However it is significant for business and holiday tourists from South Africa, at 1% and 10% level of significant respectively, with the elasticity coefficient of -0.14 and -0.07 respectively. For UK, risk variable is significant for business tourists with elasticity coefficient of -0.12 but not significant for holiday tourists. This result indicates that business tourists respond more to risk level in Nigeria than holiday tourism.

As for the price variable, it is significant for business tourists from Canada and USA, and for holiday tourists from Canada with elasticity coefficient of -0.10, -0.07 and -0.06 respectively. Thus, business tourists responded more to price than holiday tourists. And for facility, it is significant for business and holiday tourists from all origins except for holiday tourism from South Africa. The elasticity coefficients are 0.11, 0.02, 0.10 and 0.09 for Canada, UK, USA and France respectively. As discussed earlier, infrastructure elasticity is low for international demand for Nigeria's tourism.

Table 16. Individual international demand for Nigeria's business and holiday tourism

	lnarrivals=f(lngdp, lnriskngr, lnpricengr, lnfactyngr)[+]				
	Canada	South Africa	UK	USA	France
Panel A: Business tourism					
lngdp	0.3450	0.2659	0.4126	0.7265	0.3064
	(.0278)***	(.0196)***	(.0193)***	(.0568)***	(.0338)***
lnriskngr	-0.0974	-0.1438	-0.1230	-0.0035	0.0373
	(.0393)	(.0445)***	(.0322)***	(.0393)	(.0576)
lnpricengr	-0.0957	-0.0239	-0.0067	-0.0663	-0.0287
	(.0189)***	(.0221)	(.0152)	(.0186)***	(.0272)
lnfactyngr	0.1065	0.0298	0.0231	0.0914	0.1051
	(.0117)***	(.0111)***	(.0086)***	(.0118)***	(.0149)***
Constant	0.0954	0.7613	0.4606	-0.8441	.4034
	(.0951)	(.0875)***	(.0711)***	(.1560)***	(.1392)***
R2	0.9626	0.9292	0.9630	0.9560	0.9197
Chi-square	1279.73 [0.0000]	602.84 [0.0000]	1377.32 [0.0000]	1160.03 [0.0000]	531.35 [0.0000]
Root MSE	0.0076	0.0082	0.0061	0.0079	0.0107
N	40	40	40	40	40
Panel B: Holiday tourism					
lngdp	0.2092	0.2013	0.2828	0.4133	0.1966
	(.0256)***	(.0145)***	(.0186)***	(.0637)***	(.0270)**
lnriskngr	0.0513	-0.0746	-0.0452	0.0587	0.0752
	(.0475)	(.0432)*	(.0408)	(.0531)	(.0633)
lnpricengr	-0.0583	0.0198	0.0246	-0.0358	0.0017
	(.0227)**	(.0210)	(.0193)	(.0251)	(.0299)***
lnfactyngr	0.1126	0.0143	0.0233	0.1026	0.0944
	(.0129)***	(.0104)***	(.0103)**	(.0148)***	(.0155)***
Constant	0.2474	0.7096	0.5738	-0.2279	0.5347
	(.1051)**	(.0835)***	(.0848)***	(.1834)	(.1381)***
R2	0.9236	0.8919	0.9080	0.8883	0.8592
Chi-square	584.96 [0.0000]	444.86 [0.0000]	562.19 [0.0000]	402.69 [0.0000]	283.25 [0.0000]
Root MSE	0.0090	0.0078	0.0074	0.0104	0.0113
N	40	40	40	40	40

+ see section 4.3.3 for full description of variables

*significant at 10per cent, ** significant at 5per cent, *** significant at 1per cent

[ ] – p-value for Chi-square for overall significant

5.4. Impact of competitors' variables

This subsection contains estimates of the impact of competitors' variables on aggregate international demand for Nigeria's tourism as well as on business and holiday tourism both for combined and specific origin countries.

5.4.1. Panel results

a. Panel results for the impact of competitors variables on total international demand for Nigeria's tourism

Table 17 contains the aggregate panel results that incorporate competitors' variables. With respect to the model without competitors' variables in Table 13, the poolability test, the Hausman test and the Breuseh-Pagan test support the superiority of the random effect model. Thus the remaining part of this discussion is based on the random effect model. The multiple coefficient of determination indicates that the model explains about 96 per cent of the variation in international tourists' arrival in Nigeria. The Wald Chi-square of overall significance of 4086.95 is significant at 1%. The inclusion of competitors has increased the overall significance of the model. The R^2 and the Wald Chi-square values were previously 90% and 463.20 respectively. All variables are significant except competitors' price. Income and facility in Nigeria are significant at 5% while all other determinants are significant at 1%.

The income elasticity of international tourists' arrivals is 0.05 which suggests that 100per cent increase in tourists' income will only lead to 5% increase in international arrivals in Nigeria. This is lower than the 15% increase when competitors' variables are not included. The own price elasticity of international tourists' arrivals in Nigeria is -0.02 compared to -0.003 in the model without competitors' variables. The risk variable which is not significant in the model without competitors' variables is now significant at 1% with elasticity value of -0.77 which suggests that 10% increase in risk level in Nigeria is associated with 7.7% decrease in international tourists' arrivals in Nigeria. The own facility elasticity of international tourism arrival is 0.02 as against the 0.04 in the model without competitors' variables. The major interest in Table 17 is on the parameter estimates of the competitors' variables. They are the competitors' price, competitors' risk, and competitors' facility.

Table 17. Impact of competitors' variables on international demand for Nigeria's tourism (panel results)

lnarrivals=f(lngdp, lnrisknger, lnriskcpt, lnpricengr, lnpricecpt, lnfactyngr, lnfactycpt)[+]			
	OLS	Panel Fixed Effect	Panel Random Effect
lngdp	0.1253 (0.0067)***	0.0523 (0.0243)*	0.0530 (0.0241)**
lnriskngr	-0.6601 (0.7218)	-0.7663 (0.0976)***	-0.7651 (0.0980)
lnriskcpt	1.0243 (0.9843)	1.2446 (0.1602)***	1.2422 (0.1610)***
lnpricengr	-0.0053 (0.1030)	-0.0208 (0.0030)***	-0.0206 (0.0032)***
lnpricecpt	-0.0160 (0.0959)	0.0174 (0.0116)	0.01171 (0.0113)
lnfactyngr	0.0235 (0.0350)	0.0221 (0.0103)*	0.0222 (0.0103)**
lnfactycpt	-0.0316 (0.0549)	-0.0508 (0.0078)***	-0.0506 (0.0077)**
Constant	-0.3590 (0.5177)	-0.3485 (0.0567)***	-0.3486 (0.0774)***
R^2	0.3650	0.9559	0.9559
F-value/ Wald Chi-square	56.71 (0.0000)	582.03 (0.0000)	4086.95 (0.0000)
Model selection tests	7003.02[(1)] (0.0000)	0.35[(2)] (0.9998)	3835.22[(3)] (0.0000)
N	200	200	200

+ see section 4.3.3. for full description of variables
*significant at 10per cent, ** significant at 5per cent, *** significant at 1per cent
( ) – robust standard error
[(1)]– F-value for poolability test
[(2)]– Hausman chi-square
[(3)]– Breusch-Pagan chi-square

Of all the three, competitors' prices are not significant. This is due to the dominance effect of price variable in the holiday tourism in the aggregate model, as shown in the next sub-section. Both competitors' risks and competitors' facilities are significant at 1per cent. The cross risk elasticity of international tourism arrival in Nigeria is 1.24 which indicates that 10per cent increase in risk levels in other competing West Africa destination is associated with 12.4per cent increase in tourism arrivals in Nigeria. One plausible explanation is that the highly risk averse tourists that come to West Africa have preference for countries that are perceived to have lower risk level than Nigeria. However, whenever there is increase in risk level in those countries, Nigeria becomes attractive and they choose Nigeria over those competing destinations.

Considering the competitors facility, the result indicates that the absolute value of cross facility elasticity of international tourists' arrivals in Nigeria is -0.05 which suggests that a rise of 10% in facility of other competing West Africa destinations is associated with a fall of 0.5% in international tourism arrival in Nigeria. Though, tourism facility in Nigeria is poor and could not generate enough pull of foreign tourist, significant improvement in tourism facility in other competing West African countries that have similar facility with Nigeria will push some of the tourists to those competing countries.

b. Panel results for the impact of competitors' variables on international demand for Nigeria's business and holiday tourism

Table 18 contains the impact of competitors' variables on international business and holiday tourisms in Nigeria. All panel models have better fit than the pooled model. As evidenced by the coefficient of multiple determination and the F/Wald values. There is no sufficient evidence for choosing either the pooled regression or the fixed effect model over the random effect model. Thus, the remaining discussion is based on the random effect model as before. All parameters are significant except the competitors' prices for holiday tourism. The income elasticity is 0.12 for business tourism while it is 0.11 for holiday tourism. This implies that 10per cent increase in tourist income is associated with an increase of 1.2% in international business tourism arrivals in Nigeria and an increase of 1.1% in international holiday tourism arrivals in Nigeria. The impacts are lower than those obtained when competitors' variables are not included. This suggests that omission of competitors' variables lead to overestimation of some of the included parameters.

Table 18. Impact of competitors' variables on international demand for Nigeria's business and holiday tourism (panel results)

lnarrivals=f(lngdp, lnriskngr, lnriskcpt, lnpricengr, lnpricecpt, lnfactyngr, lnfactycpt)[+]						
	Business Tourism			**Holiday Tourism**		
	Pooled Estimates	**Panel Fixed Effect**	**Panel Random Effect**	**Pooled Estimates**	**Panel Fixed Effect**	**Panel Random Effect**
lngdp	0.2942	0.1160	0.1175	0.2906	0.1077	0.1094
	(0.0159)***	(0.0527)*	(0.0525)**	(0.0155)***	(0.0512)	(0.0509)**
lnriskngr	-1.8292	-2.0884	-2.0862	-1.8708	-2.1367	-2.1342
	(1.7378)	(0.2270)***	(0.2279)***	(1.6913)	(0.2350)***	(0.2329***
lnriskcpt	2.6883	3.2258	3.2211	2.6461	3.1996	3.1925
	(2.3684)	(0.3706)***	(0.3723)***	(2.3079)	(0.3784)***	(0.3803)***
lnpricengr	0.0047	-0.0331	-0.0327	0.0780	-0.0393	-0.0396
	(0.2482)	(0.0061)***	(0.0064)***	(0.2414)	(0.052)***	(0.0056)***
lnpricecpt	0.0295	0.0522	0.0515	0.0984	0.0164	0.0415
	(0.2312)	(0.0256)	(0.0250)**	(0.2251)	(0.0253)	(0.0247)
lnfactyngr	0.0319	0.0285	0.0285	0.0330	0.0295	0.0295
	(0.0841)	(0.0238)	(0.0238)	(0.0817)	(0.0240)	(0.0239)
lnfactycpt	-0.0622	-0.1090	-0.1086	-0.0160	-0.0640	-0.0636
	(0.1322)	(0.0172)***	(0.0179)***	(0.1285)	(0.0169)**	(0.0167)***
Constant	-0.6051	-0.5793	-0.5795	-0.5075	-0.4811	-0.4813
	(1.2452)	(0.1285)**	(0.1300)***	(1.2122)	(0.1239)**	(0.1273)
R^2	0.3484	0.9586	0.9586	0.3358	0.9346	0.9346
F-value/ Wald Chi-square	54.15 [0.0000]	621.24 [0.0000]	4361.84 [0.0000]	54.22 [0.0000]	384.03 [0.0000]	2695.91 [0.0000]
Model selection tests	8593.57[(1)] (0.0000)	0.34[(2)] (0.9998)	3844.64[(3)] (0.0000)	8003.86[(1)] (0.0000)	0.40[(2)] (0.9997)	3840.13[(3)] (0.9997)
N	200	200	200	200	200	200

+ see section 4.3.3. for full description of variables

*significant at 10per cent, ** significant at 5per cent, *** significant at 1per cent

( ) – robust standard error

[(1)]– F-value for poolability test

[(2)]– Hausman chi-square

[(3)]– Breusch-Pagan chi-square

The risk parameters are significant at 1per cent with the value of -2.09 and -2.13 for business and holiday tourisms respectively. This suggests that 10% increase in risk level in Nigeria is associated with a decrease of 20.9% and 21.3% in business and holiday tourism respectively. This result makes more rational sense than the non significance of risk parameter obtained in the model without competitors variables. The own price elasticity of international tourists' arrivals in Nigeria are -0.03 and -0.04 for business and holiday tourism arrivals respectively. The elasticity is lower (higher) than the values of -0.05 (-0.01) obtained respectively for model without competitors' variables. The own facility elasticity of about 3per cent is about 4per cent lower than those obtained for both tourism types in models without competitors' variables. All competitors' variables are significant for business tourism while competitors risk and competitors' facilities are significant for holiday tourism. The cross price elasticity for business tourism is 0.05, approximately the same as the own price elasticity, for this type of tourism. This suggests that business tourists place comparable importance on price levels in Nigeria as well as in other competing countries in West Africa.

For competitors' risk, the cross risk elasticity of international tourism arrival in Nigeria is 3.22 for business tourism and 3.19 for holiday tourism. Thus, while 10% increase in risk level in Nigeria will reduce international business tourism arrivals in Nigeria by 20.9%, equivalent increase in risk level in other competing West African countries will increase this type of international arrivals by 32.2per cent. Similarly, 10per cent decrease in risk level in Nigeria will generate increase of about 21.3per cent in international holiday tourism; an equivalent decrease in other competing destinations in West Africa will generate a decrease of 31.9per cent in this tourism type. These results suggest that an improvement in the risk rating of West Africa as a region will lead to net push of international tourists from Nigeria to other West African countries, while a worsen risk rating will lead to net push of international tourists from other competing West African countries to Nigeria. For the impact of competitors' facilities on international business and holiday tourism arrivals in Nigeria, the cross facility elasticities are -0.11 and -0.06 respectively. With these values, the own facility elasticity is lower than the cross facility elasticity. These results indicate that a general increase in tourism related facility in West Africa will push tourists from Nigeria to other similar West African countries while if the facility should worsen the rating of West Africa region will push business and holiday tourists from similar West African countries to Nigeria.

5.4.2 Individual countries

a. Individual country results for the impact of competitors' variables total on international demand for Nigeria's tourism

Table 19 contains the impact of competitors' variables on international tourists' arrivals from each of the five origin countries. The variation in international arrivals as explained by all the variables in the model increased from 97% to 98%, 93% to 98%, 97% to 99%, 97% to 99% and 94% to 99% for Canada, South Africa, UK, USA and France respectively. The RootMSE also reduced from 0.0032 to 0.0020, 0.0035 to 0.0017, 0.0022 to 0.0010, 0.0031 to 0.0015 and 0.0042 to 0.0019 respectively. Further, the Chi-square values for the overall significance of the model increased from 1395.39 to 2980.41, 607.2 to 2567.05, 2013.24 to 9256.87, 1498.94 to 5279.94 and 683.82 to 3595.63 respectively. Thus the model with competitors' variables performs better than the one without competitors' variables.

For the income elasticity of international tourism arrival in Nigeria, it is significant at 1per cent for all origin. Apart from the USA, income elasticity values are lower in models with competitors' variables than in the models without it. The elasticity is such that 10per cent increase in tourist income will increase international tourists' arrivals by 1.2per cent, 0.3per cent, 1.8per cent, 3.5per cent and 0.8per cent for tourists from Canada, South Africa, UK, USA, and France respectively. This means international demand for Nigeria tourism from South Africa and France are income inelastic.

Risk in Nigeria is now significant for all the five origins. This is against the results in models without competitors' variables where risk is significant for only South Africa and UK. The own risk elasticity of international tourists' arrivals is -0.58 for Canada, -0.62 for South Africa, -0.49 for UK, -0.54 for USA and -0.84 for France.

Concerning the parameter of own price, the own price elasticity of international tourism arrival in Nigeria is -0.03 for Canada, -0.02 for South Africa, -0.01 for UK, -0.02 for USA and -0.02 for France. This is against the value of -0.05, -0.02, -0.01, -0.04 and -0.03 respectively for model without competitors' variables.

Table 19. Impact of competitors variables on international demand for Nigeria's tourism (individual country results)

lnarrivals=f(lngdp, lnriskngr, lnriskcpt, lnpricengr, lnpricecpt, lnfactyngr, lnfactycpt)[+]					
	Canada	**South Africa**	**UK**	**USA**	**France**
lngdp	0.1201	0.0262	0.1771	0.3483	0.0783
	(0.0208)***	(0.0090)***	(0.0100)***	(0.0359)***	(0.0158)***
lnriskngr	0.05825	- 0.6215	- 0.4897	- 0.5420	- 0.8424
	(0.0903)***	(0.0660)***	(0.0378)***	(0.0799)***	(0.0698)***
lnriskcpt	0.9121	1.0593	0.6754	0.8025	1.3603
	(0.1331)***	(0.0925)***	(0.0573)***	(0.1230)***	(0.0981)***
lnpricengr	-0.0282	- 0.0233	0.0147	-0.0231	-0.0190
	(0.116)**	(0.0099)**	(0.0056)	(0.0083)	(0.0110)
lnpricecpt	-0.0152	0.0559	0.0156	0.0381	0.0009
	(0.0128)	(0.0119)***	(0.0063)**	(0.0086)	(0.0121)
lnfactyngr	0.0410	0.0099	0.0055	0.0349	0.0275
	(0.0039)***	(0.0033)	(0.0017)***	(0.0028)***	(0.0033)***
lnfactycpt	0.0247	0.0648	0.0147	0.0098	0.0459
	(0.0079)***	(0.0057)***	(0.0041)***	(0.0064)	(0.0070)***
Constant	-0.3832	-0.2560	-0.1669	-0.8350	-0.4060
	(0.0559)	(0.0468)***	(0.0258)	(0.0555)***	(0.0490)***
R2	0.9864	0.9839	0.9947	0.9922	0.9870
Root MSE	0.0020	0.0017	0.0010	0.0015	0.0019
	2980.41	2567.05	9256.87	5279.94	3595.63
Chi – square	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
N	40	40	40	40	40

+ see section 4.3.3 for full description of variables

*significant at 10per cent, ** significant at 5per cent, *** significant at 1per cent

[ ] – p-value for Chi-square for overall significant

For the facility parameter, the elasticity values are lower for models with competitors' variables. While the own facility elasticity are 0.04, 0.01, 0.01, 0.03 and 0.03 for Canada, South Africa, UK, USA, and France respectively when competitors' variables are included; they are 0.05, 0.02, 0.05 and 0.05 respectively in the model without competitors' variables. Considering the specific effects of competitors' variables, competitors' risks are not significant for UK, USA and France; competitors' prices are not significant for tourist from Canada and France while competitors' facility is not significant for tourist from France.

For the risk variable, cross risk elasticity is higher than own price risk elasticity for all origin countries. While a 10% increase in the risk level in Nigeria is associated with a decrease of 5.83% in international tourists' arrivals from Canada in Nigeria, a 10% decrease in risk level in other similar countries in West Africa is associated with a decrease of 9.12% in international tourists' arrivals from Canada to Nigeria. For South Africa, 10% increase in risk level in other competing West African countries is associated with a rise of 10.59% in their international tourists' arrivals in Nigeria which the same quantum of increase in risk level in Nigeria is associated with a decrease of just 6.22% in international arrivals from South Africa. In the same vein, 10% fall in risk level in Nigeria will increase international arrival from UK, USA and France in Nigeria by 4.90%, 5.42% and 8.42% respectively. While the same percentage fall in risk level in other similar West African countries will lead to increase in international arrivals in Nigeria by 6.75%, 8.03% and 13.60% respectively. Thus general improvement in the risk rating of West Africa as a region will reduce international tourists' arrivals in Nigeria from all the five origin countries.

For competitors' price, the cross price elasticity of international tourism demand in Nigeria is significant for South Africa, UK and USA, but not significant for Canada and France. The result indicates that only price level in Nigeria is important for international tourists from Canada while those from UK and USA are concerned mainly with the price levels in other similar West African countries. Only tourists from South Africa are concerned with price level in Nigeria as well as in other competing West African destination. An increase of 10per cent in price level in other competing West African countries is associated with increase in international tourism arrivals in Nigeria by 0.6%, 0.2% and 0.4% for tourists from South Africa, UK and USA respectively. For tourist from South Africa, a general increase in the price level in West Africa region will lead to increase in arrival in Nigeria while decrease in

price level in West Africa region will pull tourists away from Nigeria to other similar destinations in West Africa, thereby reducing international tourism from South Africa in Nigeria.

For competitors' facility, cross facility elasticity is not significant for tourists from USA. The cross facility elasticity are -0.02, -0.06, -0.01 and -0.05 for Canada, South Africa, UK and France respectively. Concerning the tourists from Canada, 10% increase in relevant facility and infrastructure in Nigeria is associated with increase of 0.41per cent in arrivals in Nigeria while the same level of increase in other similar countries in West Africa is associated with decrease of 0.25%. Thus, a general increase in facility level in West Africa region will lead to a net increase in international arrivals from Canada in Nigeria. On the contrary, 10per cent increase in facility level in West Africa region will pull tourists from other similar West African countries to Nigeria by 0.10% and 0.28% for South Africa and France respectively, and also push tourists away from Nigeria to other similar West African countries by 0.6% and 0.5% respectively. The net effect is a decrease in international tourists' arrivals from South Africa and France in Nigeria following general improvement in tourism infrastructure in West Africa region. For UK, the net effect is nil as 10% increase in tourism facility in Nigeria and other similar West African countries is associated simultaneous with pull and push of tourists into and away from Nigeria by 0.1%.

b. Individual country results for the impact of competitors variables on international demand for Nigeria's business tourism

Table 20 contains the impact of competitor's variables on International business tourism arrivals from each of the five countries of origin. The overall significance of the models is better than those without competitors' variables. The coefficient of multiple determinations is about 99per cent for all the five origin countries compared to 96.8%, 93%, 96% and 92% obtained for Canada, South Africa, UK, USA and France respectively in models without competitors' variables. The inclusion of competitors' variables also reduces the root mean square errors from 0.0076, 0.0082, 0.0061, 0.0079 and 0.0107 to 0.0040, 0.0030, 0.0021, 0.0033, and 0.0039 respectively. The overall Chi-square values also increased from 127.73, 602.84, 1377.32, 116.03 and 531.35 to 4402.40, 4419.63, 10790.82, 5799.05 and 4389.07 for each origin listed above respectively**.**

Table 20. Impact of competitors variables on international demand for Nigeria's business tourism (individual country results)

lnarrivals=f(lngdp, lnriskngr, lnriskcpt, lnpricengr, lnpricecpt, lnfactyngr, lnfactycpt)[+]					
	Canada	**South Africa**	**UK**	**USA**	**France**
lngdp	0.2013	0.0821	0.3255	0.5048	0.1366
	(0.0492)***	(0.0169)***	(0.0219)***	(0.0868)***	(0.0311)***
lnriskngr	-1.8169	- 1.7128	- 1.5370	- 2.0283	- 2.3241
	(0.1794)***	(0.1145)***	(0.0787)***	(0.1819)***	(0.1415)***
lnriskcpt	2.7375	2.7079	2.1465	2.9853	3.5996
	(0.2749)***	(0.1613)***	(0.1204)***	(0.2842)***	(0.1985)***
lnpricengr	-0.0592	- 0.0301	0.0087	-0.0027	-0.0174
	(0.0217)***	(0.0173)*	(0.0117)	(0.0177)	(0.0222)
lnpricecpt	0.0016	0.1188	0.0079	0.0437	0.0351
	(0.0260)	(0.0214)***	(0.0134)	(0.0189)**	(0.0243)
lnfactyngr	0.0781	0.0421	0.0099	0.0644	0.0376
	(0.0073)***	(0.0058)***	(0.0036)***	(0.0061)***	(0.0068)***
lnfactycpt	-0.0669	-0.1333	-0.0504	-0.0529	-0.1091
	(0.0165)***	(0.0101)***	(0.0088)***	(0.1468)	(0.0140)***
Constant	-0.6673	-0.3569	-0.1924	-1.3928	-0.6649
	(0.1028)***	(0.0810)***	(0.0535)	(0.1259)***	(0.1013)***
R^2	0.9896	0.9902	0.9955	0.9922	0.9895
Root MSE	0.0040	0.0030	0.0021	0.0033	0.0039
Chi - square	4402.40	4419.63	10790.82	5799.05	4389.07
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
N	40	40	40	40	40

+ see section 4.3.3 for full description of variables
*significant at 10per cent, ** significant at 5per cent, *** significant at 1per cent
[ ] – p-value for Chi-square for overall significant

All the income variables are significant at 1per cent with income elasticity of international business tourism values of 0.20, 0.80, 0.33, 0.50 and 0.14 for Canada, South Africa, UK, USA and France respectively. The inclusions of competitors' variables reduce the income elasticity. The values are 0.35, 0.27, 0.41, 0.73 and 0.31 respectively when competitors' variables are not included. However, international business tourism is still income inelastic. For the own risk elasticity, the variable is significant for all origin countries at 1per cent as against the model without competitors variables in which own risk parameter is significant for only South Africa and UK. The parameter values indicate that 10per cent increase in risk level in Nigeria is associated with a decrease of 18.2per cent, 17.1per cent, 15.4per cent, 20.3per cent and 23.2per cent in business tourism arrivals in Nigeria from Canada, South Africa, UK, USA and France respectively. This means the international business tourism in Nigeria is own risk elastic.

For the own price parameter, the variable is significant for only Canada and South Africa with elasticity values of -0.06 and -0.03 respectively. The inclusion of the competitors' variables have reduced magnitude of own price elasticity of international business tourism arrivals. The own price elasticity parameter is significant at 1per cent for all origins. The coefficients of elasticities are 0.08, 0.04, 0.01, 0.06 and 0.04 for Canada, South Africa, UK, USA and France respectively. These elasticities are lowered than those obtained when competitors variable are not included for Canada and USA, but increased the values obtained for the remaining three origins.

The impact of the competitors' variable, competitors risk and competitors facility are significant at 1per cent for all origin countries while competitors price is only significant for South Africa and USA at 1% and 5% respectively . The magnitude of parameter of competitors risk is higher than that of Nigeria risk for all the five origins. The cross risk elasticity of international business tourism arrival in Nigeria indicates that 10% increase in risk level in competing West African destination will increase international business tourism arrivals from Canada, South Africa, UK, USA and France in Nigeria by 27.4%, 27.1%, 21.5%, 29.9% and 36.0% respectively. Since these values are higher than the associated decrease in international business tourism arrivals in Nigeria following the same percentage increase in the risk level in Nigeria, improved risk rating of West Africa region in the global business tourism market will be associated with net increase in international business tourism

arrivals in Nigeria. Similarly, if risk rating of West African region should worsen in the global business tourism market will lead to net fall in international business tourism arrivals in Nigeria.

For the competitor's price parameter, the cross price elasticity of international business tourism arrivals from South Africa and USA in Nigeria are 0.12 and 0.04 respectively. Out of these two countries only South Africa has significant own price elasticity of 0.03 lower than the corresponding cross price elasticity value. Thus, a general increase in the price level in West Africa region will lead to net income in international business tourism arrivals from South Africa while a general decrease in price level will lead to net decrease. For competitor facility parameter, the cross elasticity of international business tourism demand in Nigeria are -0.07, -0.13, -0.05, -0.05 and -0.11 for Canada, South Africa, UK, USA and France respectively. This suggests that 10% improvement in the level of tourism related facility and infrastructure in the competing West African countries will lead to a decrease of 0.67%, 1.33%, 0.50%, 0.53% and 1.09% respectively in international business tourism arrivals in Nigeria compared to the own price elasticity; these impact are lower for Canada and USA but high for all other origin countries. Thus, a general improvement in tourism facilities in West Africa region will lead to net increase in international business tourism arrivals from Canada and USA in Nigeria but net decrease in those from the other three origins.

c. Individual country results for the impact of competitors variables on international demand for Nigeria's holiday tourism

Table 21 contains the extended model of international holiday tourism arrivals in Nigeria, when compared to the equivalent model without competitors' variables, the coefficient of determination increased for all origin countries. For the extended models, the R^2 is approximately 99per cent for Canada and 98per cent for the remaining four origins. The R^2 in the model without competitors' variables are 92per cent, 89per cent, 91per cent, 89per cent and 86per cent for Canada, South Africa, UK, USA and France respectively. Also the RootMSE reduced from 0.0090, 0.0078, 0.0074, 0.0104 and 0.0113 respectively in the base model to 0.0036, 0.0033, 0.0030, 0.0035 and 0.0043 respectively in the extended model. Similarly, the overall chi-square values increases from 584.96, 444.86, 562.19, 402.69 and 283.25 to 3737.32, 2287.29, 2638.44, 3486.85 and 1892.68 respectively. In general, inclusion of competitor's variable increases the overall fit of the model.

Table 21. Impact of competitors variables on international demand for Nigeria's holiday tourism (individual country results)

lnarrivals=f(lngdp, lnriskngr, lnriskcpt, lnpricengr, lnpricecpt, lnfactyngr, lnfactycpt)[+]					
	Canada	**South Africa**	**UK**	**USA**	**France**
lngdp	0.2831	0.0898	0.0516	0.5040	0.1411
	(0.0455)***	(0.0168)***	(0.0266)***	(0.9612)	(0.0316)***
lnrisknger	-1.6738	-1.7370	-1.6623	-2.0651	-2.3588
	(0.1623)***	(0.1217)***	(0.1203)	(0.1978)***	(0.1701)***
lnriskcpt	2.3622	2.6309	2.3195	2.7352	3.5326
	(0.2499)***	(0.1707)***	(0.1766)***	(0.3104)***	(0.2362)***
lnpricengr	-0.0241	-0.0453	-0.0656	-0.0699	-0.0639
	(0.0195)	(0.0183)**	(0.0177)***	(0.0188)***	(0.02612)***
lnpricecpt	0.0968	0.0427	0.0308	0.1128	0.0433
	(0.0236)***	(0.0220)*	(0.0190)	(0.0204)***	(0.0275)
lnfactyngr	0.0756	0.0400	0.0091	0.0656	0.0390
	(0.0065)***	(0.0061)***	(0.0056)	(0.0065)***	(0.0082)***
lnfactycpt	-0.0002	-0.0846	-0.0269	-0.0067	-0.0569
	(0.0150)***	(0.0106)***	(0.0121)**	(0.0160)	(0.0158)***
Constant	-0.5690	-0.2566	-0.1208	-1.2968	-0.5635
	(0.0919)***	(0.0863)***	(0.0834)	(0.1367)***	(0.1217)***
R^2	0.9876	0.9807	0.9844	0.9872	0.9791
Root MSE	0.0036	0.0033	0.0030	0.0035	0.0043
Chi-Square	3737.32	2287.29	2638.44	3486.85	1892.68
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
N	40	40	40	40	40

+ see section 4.3.3 for full description of variables

*significant at 10per cent, ** significant at 5per cent, *** significant at 1per cent

[ ] – p-value for Chi-square for overall significant

The income variable is significant at 1per cent for all origins. The income elasticity of international holiday tourism arrivals in Nigeria ranges from 0.09 for South Africa to 0.50 for USA. Thus, the international demand for Nigeria international business tourism is income inelastic. The risk parameter is also significant at 1per cent for all origins. The own risk elasticity coefficient are -1.67, -1.74, and -1.66 for Canada, South Africa and UK respectively. The corresponding values for US and France are -2.07 and -2.36 respectively.

When compared with international business tourism, international holiday tourism has higher own risk elasticity for all origins except South Africa. The price elasticity of international holiday tourism is significant at 1per cent for all origin except Canada. Increase of 10per cent in price level in Nigeria is associated with a decrease of 0.5per cent, 0.7per cent, 0.7per cent and 0.6per cent in international holiday tourism arrivals from South Africa, UK, USA and France respectively. This implies that the international demand for Nigeria holiday tourism is highly own price inelastic.

The own facility elasticity is significant at 1% for all origins except UK. An increase of 10% in tourism related facility and infrastructure is associated with increase of 0.8%, 0.4% 0.7% and 0.4% in international business tourism arrivals in Canada, South Africa, UK, USA and France respectively. Concerning the competitors' variables, competitors risk is significant at 1per cent for all origins. The cross risk elasticity of international holiday tourism arrivals is 2.4, 2.6 and 2.3 for Canada, South Africa and UK respectively. The corresponding figures for USA and France are 2.9 and 3.5 respectively. The absolute value of competitors' risk coefficient is higher than that of Nigeria risk coefficient for all origins. These suggest that a general increase in risk level in all West African countries will lead to net increase in international business tourism arrivals in Nigeria from the five origin countries.

Coefficient of competitors' price variable is significant at 1per cent for Canada and USA and significant at 10% for holiday tourism from South Africa. It is not significant for the other two countries. A 10per cent increase in price level in similar West Africa destination is associated with increase of 1.0%, 0.4%, and 1.1% for holiday tourist arrivals from Canada, South Africa, and USA respectively. The competitors' facility variables indicate that the cross facility elasticity of international holiday tourism demand in Nigeria is 0.08, 0.03 and 0.06 respectively for tourists from South Africa, UK and France respectively. The competitor's facility is not significant for Canada and USA. These results indicate that the

international business tourism demand is more sensitive to competitors' variable than the international holiday tourism demand.

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATION

6.1. Summary

This thesis examined the determinants of international demand for Nigeria's tourism in order to realise the objective of making the tourism sector a significant source of foreign exchange and means of diversifying the oil dominated economy. Tourism industry is currently the world's fastest growing international service trade with great developmental potential. Given that tourism is consumed at the point of production, it encourages the development of different local businesses that generate employment and income for local communities. To achieve sustainable tourism development, demand analysis is critical (Pearce, 1989) as the destination must be able to find enough tourists to fill capacities. The poor performance of the Nigerian tourism sector among other West African countries, despite series of efforts (institutional framework, investment incentives, development of the Tourism Development Master Plan), suggests there is something fundamental Nigeria needs to know about the international demand for her tourism.

To partially fill this gap, this thesis computed competitive weight of other West African destinations to Nigeria tourism and used the result to determine the main competitors of Nigeria's international tourism among the other West African countries. The thesis also modelled and estimated the international demand for Nigeria's tourism and examined differences between international business and holiday tourism demand for Nigeria. The thesis also went further to assess the impacts of competitors' variables, based on the computed competitive weight, on the international demand for Nigeria's tourism. This study may not be the first on international tourism demand, it is justified based on the need for country specific study for Nigeria as empirical results vary across countries (Witt and Witt, 1995; Kulendran and Witt, 2001). It is also the first to consider the impact of competitor variables on international demand for Nigeria's tourism to the best of the Researcher's knowledge. Most of the existing studies on Nigeria's tourism are merely descriptive

(Bankole, 2005; Bankole and Odularu, 2006). The thesis is premised on Lancaster's demand theory which enables inclusion of non-price variables like facilities, risk and competitors' parameters in the tourism demand model.

The background section, chapter two, reveals the general characteristics of tourism sector as well as the specific characteristics in Nigeria and in West Africa. Tourism infrastructure requirements include primary infrastructure such as hotels, restaurants and recreational facilities as well as supportive physical infrastructure and basic services like transportation, telecommunications, energy, water and waste management facilities and services (UNCTAD, 2007). There is clearly a geographic pattern to tourism resources in, and tourism flows, to Africa. West and Central Africa have the least number of arrivals on the continent (Gauci *et al*., 2002). In West Africa, tourism is an increasingly crucial activity in terms of contribution to economic growth and social development as the tourism industry has grown considerably in the last few years (Ige and Odularu, 2008). West Africa is blessed with enormous ethnic diversity and a multifarious natural and cultural heritage characterized by deep-rooted traditions and generally harmonious cultural interaction.

Institutional structure for Nigeria tourism can be traced back to 1976 when the government established the Nigeria Tourism Board (NTB). Tourism management is under the Ministry of Culture and Tourism and its eight parastatals. Unlike crude oil, Nigeria's tourism assets are scattered across the country. The cultural elements of Nigerian tourism include: cultural events, religious activities, collection of arts and artifacts (in museums), ancient walls and buildings, and other historic sites.

The literature review section examined conceptual, theoretical and empirical issues. There is a conceptual problem with tourism as definition depends on purpose. However, the most relevant definition of tourism for this thesis is that of the United Nations World Tourism Organisation (UNWTO). International tourism encompasses the activities of visitors who make temporary visits across international borders, outside their usual place of work and residence and stayed for more than 24 hours. The primary purposes of travel can be holiday, visiting friends and relatives, business, convention or meetings, health, education, religion or sport. Tourism thus involves: short-term travel, at least for one day and not more than one year and expenditure on transport, accommodation, purchases and services, from when the visitor leaves home, until he/she returns.

Theoretical explanation of tourism demand, like demand for all other goods and services, has long been based on the neoclassical demand theory. This has been criticised to be inadequate in analysing quality-based goods, like tourism, in which consumer demand depends on the characteristics of the goods. Alternative theories that have been developed in an attempt to analyse quality-based goods include hedonic model, Rosen's model, Houthakker-Thiel approach, Ladd-Zober model, Becker's household production approach, Dixit-Stiglitz model, Chamberlin's monopolistic model, and Lancaster's model. The Lancaster's model has been recommended for tourism demand studies (Papatheodorou, 2001; Giacomelli, 2006a).

The most common measure of international tourism demand has been international tourist arrivals; other measures include: international tourist expenditures/receipts, international tourist arrivals/departures, travel export/import, the number of international tourist-nights spent at tourist accommodation and average length of stay (Witt and Witt, 1995; Song and Li, 2008). For the independent variables, main factors affecting tourism demand in recent empirical studies include: income of tourist, relative tourism price between destination and origin country, substitute tourism price in competing destinations and exchange rates as well as political and health risk.

This study makes use panel regression models to obtain parameter estimates of the model derived based on Lancaster framework. The main findings are summarised according to the specific objectives as follows:

Computation of competitive indices and competitive weight

The most culturally similar country to Nigeria in West Africa is Ghana, followed by Sierra Leone, The Gambia and Benin Republic. The Natural Similarity is divided into climate, elevation and biomes. The most similar countries in terms of climate are Cote d'lvoire, Guinea-Bissau Benin, Senegal and The Gambia in that order of similarity. In terms of elevation, the similar country to Nigeria is Liberia, Togo, Guinea and Ghana in order of similarity, while similar countries to Nigeria based on biomes are Cape Verd, Mauritania, The Gambia, Niger, and Sierra-Leone in that order of similarity. The similar countries in terms of natural characteristics are Benin, Togo, Burkina–Faso, Guinea and Ghana. Considering all the facility measures, the similar countries to Nigeria are Ghana, Cape Verde, Senegal, Benin and The Gambia in that order of similarity. Ghana, Benin, the Gambia and Togo are the main competitors of Nigeria in the international tourism market with

competitor's share of 0.10, 0.09 and 0.09 respectively, followed by Burkina Faso, Senegal and Sierra Leone with share of 0.07 each. The weakest competitor is Cape Verde with a competitor's share of 0.04, followed by Mali, Liberia and Mauritania with a share of 0.05 each.

International demand for Nigeria's tourism

The aggregate results indicate that 1per cent increase in per capita income of tourists on average is associated with 0.15% increase in tourism arrivals in Nigeria. The own price elasticity of international tourism demand in Nigeria is -0.03. The own facility elasticity of international tourism demand in Nigeria is 0.04. The individual origin result indicates that the income parameters are 0.12, 0.14, 0.15, 0.19 and 0.33 for tourists from South Africa, France, Canada, UK, and USA respectively. The risk parameter is significant only for South Africa and UK with elasticity values of -0.05 and -0.04 respectively. The own price elasticity of international tourism demand in Nigeria are -0.01, -0.02 and -0.03 for UK, South Africa and France respectively. The corresponding values are -0.04 and -0.05 for USA and Canada respectively. Increase of 10% in tourism related infrastructure in Nigeria is associated with rise of 0.16%, 0.20%, 0.46%, 0.52% and 0.53% for tourist for UK, South Africa, USA, France and Canada respectively.

International business and holiday tourism demand for Nigeria

For the aggregate model, the income elasticity of international business tourism arrivals in Nigeria is 0.35 while it is 0.25 for holiday tourism respectively. For price, the parameter of holiday tourism is not significant while the own price elasticity of international business tourism in Nigeria is -0.05. The parameter of facility is 0.08 for business tourism and 0.07 for holiday tourism.

For the individual country results, the income elasticity for business is 0.35, 0.27, 0.41, 0.73 and 0.31 for Canada, South Africa, UK, USA and France respectively. The equivalent figures for holiday tourism are 0.21, 0.20, 0.28, 0.41 and 0.20 respectively. The risk variable is significant for business and holiday tourism from South Africa with the elasticity coefficient of -0.14 and -0.07 respectively. For UK, risk variable is significant only for business tourism with elasticity coefficient of -0.12.

Impact of competitors' variables on international demand for Nigeria's tourism

For the aggregate model, the cross risk elasticity of international tourists' arrivals in Nigeria is 1.24. The coefficient of competitors' facility indicates that a rise of 10per cent in facility of other competing West Africa destination is associated with a fall of 0.5per cent in international tourism arrival in Nigeria. The cross price elasticity is only significant for business tourism, with the value of 0.05.

For the individual country results, 10per cent increase in risk level in competing West African destination will increase international business tourism arrivals from Canada, South Africa, UK, USA and France respectively in Nigeria by 27.4per cent, 27.1per cent, 21.5per cent, 29.9per cent and 36.0per cent respectively. The cross price elasticity of international business tourism arrivals from South Africa and USA in Nigeria are 0.12 and 0.04 respectively. For competitors' facility parameter, 10per cent improvement in the level of tourism related facility and infrastructure in the competing West African countries will lead to a decrease of 0.67per cent, 1.33per cent, 0.50per cent, 0.53per cent and 1.09per cent for tourists from Canada, South Africa, UK, USA and France respectively.

6.2. Conclusion

This thesis concludes that the main competitors of Nigeria in the international tourism market in West Africa are Ghana, Benin, the Gambia and Togo while the least competing countries are Cape Verde, Mali, Liberia and Mauritania.

International demand for Nigeria's tourism is income, own facility and own price inelastic; and the response of the international tourists' arrivals in Nigeria to changes in determinants varies across tourism types and across countries of origins. The international business tourism demand is more sensitive to competitors' variables than the international holiday tourism demand.

Competing West Africa destinations have significant influence on international demand for tourism in Nigeria. A general increase in the price level in West Africa region will lead to net increase in international business tourists' arrivals from South Africa. A general improvement in tourism facilities in West Africa region will lead to net increase in international business tourists' arrivals from Canada and USA in Nigeria but lead to net decrease in those from the South Africa, UK and France.

Thus, to have net increase in arrivals, every 1per cent increase in tourism facility in the main competing West African countries need to be matched by increase of at least 2.5per cent in Nigeria. Similarly, every 1per cent decrease in prices in competitor's countries required decrease of at least 1.61per cent in Nigeria. Also, every 1per cent decrease in risks in competitor's countries required decrease of at least 1.67per cent in Nigeria

6.3. Recommendations

In line with the conclusions of this thesis, the recommendations made are as follows:

- Given the results that prices, facilities and tourist income are the main determinants of international demand for tourism in Nigeria, tourism development planning and policies in Nigeria should emphasise these factors in the planning tools.

- Based on the results that Ghana, Benin, The Gambia and Togo are competitors to tourism in Nigeria, Tourism planning authourities in Nigeria need to monitor tourism related policies of these competitors and act as appropriate to prevent those countries from puling tourists from Nigeria to them.

- Given the results that Cape Verde, Mali, Liberia and Mauritania are not competing with Nigeria tourism, tourism in Nigeria should be promoted as a complementary tourism package to these destinations.

- Since Nigeria tourism is income inelastic, effort should continue to market Nigeria tourism in all the main tourists' origin countries despite the current economic crises in some of those countries.

- Tourism policy and development programmes and targets should be directed at specific components like business and holiday for each group of the origin countries rather than using the same approach for all tourism types in all origins.

6.4 Limitations of the study and areas for further research

The first limitation of this thesis is that it emphasises the issue of competing destinations, not giving detail attention to the issue of complementary destinations. Clear modelling and identification of complementary destinations in Africa will identify another opportunity for promoting Nigeria tourism. Research in this direction may require a survey of foreign tourists that enter Nigeria from another tourism destination(s) or that go to other destinations from Nigeria.

The second is the neglect of domestic as well as international tourism from other West African destinations. While the emphasis is on the international tourists' arrivals because of foreign currency generation, domestic tourism can be an important complement by reducing leakage caused by Nigerians demand for tourism in other countries. Also, intra West African tourism can provide additional information on demand for Nigeria's tourism.

The third relates to the neglect of tourism supply. In the same way as many other tourism literatures, the existence of a flat tourism supply curve is implicitly assumed in this thesis. This assumption that allows modeling of tourism choices without considering the supply side, rules out potential identification problems. However, with an upward sloped tourism supply, coefficients for destinations' tourism price would possibly be biased downward as destinations' tourism price would become an endogenous variable. To analyse this point, future research may consider a simultaneous equation model. To build such a model, an appropriate study on the determinants of tourism supply would be required.

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APPENDIX

Appendix I: Key initiative and activities for implementing vision 2020 on culture and tourism

Key initiative	Activities (Required action)	Time -line	Implementing [Collabouration] Agencies	Fund Sources
To achieve annual growth rate of between 60per cent and 100per cent in the next Ten years.	Revise and update the recommendations contained in the Tourism Master plan.	From Jan 2010	MC&T	FMC&T
	Implementing the relevant and acceptable sections of the Tourism Master plan.		FMC&T, States[UNWTO]	AfDB
	Increase human capacity development in Nigeria		NTDC,NIHOTOUR [UNWTO, ILO]	UNIDO
	Develop world class Tourism and products and facilities		Public/ Private sectors, States	CBN, Banks
	Initiate/support funding for tourism development		CBN,FMC&T	TDF
	Support the development of common Regional entry visa for West Africa and relax visa rules.		Ministry of Foreign affairs, Immigration [ECOWAS]	World Bank
Support the use of film, visual arts, movies and music as a tool for tourism promotion.	Increase marketing and promotion of Nigeria as a destination worldwide	June 2011	MC&T [UNICEF, FF, NFVCB]	Grants
	Initiate and support funding for tourism development		Tourism Boards, NTDC.	
	Develop world class tourism and products and facilities			
Develop a linkage between the promotion of Tourism and Cultural events.	Promote Cultural festivals.	June, 2011	FMCT [UNICEF,CNN]	FGN
	Organise Tourism/Cultural fairs, exhibition and Seminars		National and State Tourism Boards	
	Undertake exchanges between tourism, Cultural Experts and Institutions with other countries.		NTDC, NIHOTOURS	
Promote the development and conservation of museums and monuments as tourism products	Rehabilitation of existing museums and building of new world class of museums.	June, 2010	FMCT. [ICOMOS, UNICEF]	Grants
	Capacity building initiatives.		Tourism Board.	
	Providing code of conduct on International best practices.		NTDC, IHOTOUR, NCMM	
Hosting major sporting events and International conferences	Bidding for the hosting	Jan.2012	Ministry of Sport [PCT, NSC]	Sponsors
	Provide funding/Donors Conference		MCT	
	Provide standard venues and infrastructures		NTDC/Ministry of Sports [NPC]	FGN
Development of products.	Develop parks.	From June, 2011.	National Parks Board [FME]	Concessionaires
	Provide infrastructure for survival of wildlife		MCT [FME]	
Develop clusters of resorts along our beaches.	Develop world class Tourism and products and facilities	Jan. 2011	MCT [FME]	Concessionaires
	Initiate and support funding for Tourism		NTDC.	

	development.			
	Enhance the capacity and effectiveness of Regulatory agencies in a areas of data collection and standardization of products		National and State Tourism Board	States
	Increase marketing and production of Nigeria as a destination worldwide.			
Achieve an annual growth rate of between 60per cent and 100per cent throughout the next Ten years.	Implement the relevant and acceptable sections of the Tourism Master plans.	From 2013	MCT	
	Revise and update the recommendations contained in the Tourism Master plan.		NTDC.	
	Develop world class Tourism and products and facilities.		National and State Tourism Boards.	
	Increase human capacity development in Nigeria		FAAN [FMA]	
	Initiate and support funding for tourism development			
	Support the development of common Regulatory entry visa for West Africa and relax visa rules.			
	Enhance the capacity and effectiveness of Regulatory agencies in areas of data collection and standardization of products			
To receive between 15 million and 20 million visitors annually by 2020	Implement the relevant and acceptable sections of the Tourism Master plans	From 2015	Ministry of sports	
	Revise and update the recommendations contained in the Tourism Master plan		MCT	
	Develop world class Tourism and products and facilities.		NTDC.	
	Increase human capacity development in Nigeria		National and State Tourism Boards	
	Initiate and support funding for tourism development.		FAAN [Federal, Ministry of Aviation]	
	Support the development of common Regional entry visa for West Africa and relax visa rules effectiveness of Regulatory agencies in a areas of data collection and standardization of products			
	Increase marketing and promotion of Nigeria as a destination worldwide.			
To contribute a minimum of 10per cent to the national GDP by generating an annual Tourism receipts of between $15 billion and $30 billion.	Implementing the relevant and acceptable sections of the Tourism Master plan.	From 2016	Min. of Information. [CBN,NPC,NBS]	
	Revise and update the recommendations contained in the Tourism Master plan.		MCT	
	Develop world class Tourism products and facilities.		Ministry of Justice	
	Increase human capacity development in Nigeria.		Ministry of Finance.	
	Initiate and support funding for tourism development.		NTDC	

	Support the development of common Regional entry visa for West Africa and relax visa rules.		NIHOTOURS	
	Enhance the capacity and effectiveness of Regulatory agencies in a areas of data collection and standardization of products.			
	Increase marketing and promotion of Nigeria as a destination worldwide.			

Source: Vision 2020, 2010

Appendix II: Other thematic areas relevant for tourism development

Thematic Area	Relationship	Implications	Question
Transport	Tourists need the means of transport to get to their destination. Tourism flies on the wings of the national carrier. Need for an international hub and regional hubs in domestic source areas.	If there is no provision of transport means, there will be no tourism. Without a national carrier it will be difficult to promote igerian tourism globally. The absence of a hub will rub us of the benefits of international travel business	Can our airport handle 20 million visitors a year by 2020. Can we depend on our existing domestic private airlines to promote the Nigerian Tourism brand globally? Can our existing airports seamlessly connect traffic from source areas to the hub?
Sport Develop-ment	Sports and Tourism are the largest space adjusters in the world moving people around the world. Sport and tourism are the biggest drivers of modern interaction today and they are linked. Hosting of events have become the biggest agent of tourism growth e.g. in South Africa, Dubai, Monaco, Australia etc.	The late bidding, absence of time to market ,the absence of linkages with tourism and bad organisation robs us of benefit of hosting The hosting of big tickets event with huge TV audience will help national image. Lesser known events have better tourism pull effect and can be marketed to niche audience.	How can tourism personnel market and prepare if they do not have enough time to market and are not involved in the bidding ? Attempting to host only big ticket football event creates more problems than benefit now until we improve our internal processes. Can we do any better?
Environ-ment	Ecotourism is the driving force of tourism in Africa and South America. Ecotourism projects along beaches [eco -lodges and resorts] bring in the most money in Africa supported by wildlife safaris Concessions are made to private developers to build lodges and resorts in National parks and reserves and this is the key drivers of tourism. Our national animals and plants are used for tourism marketing purposes	Nigeria has not harnessed ecotourism Potentials abundant in its borders as Tanzania National parks earned $75million from tourism last year and Egypt earned $8billion from Water related tourism. If there is no concessions to tourism development there will be no appreciable income from wildlife The lack of exact description of our national images robs us of marketing potentials.	Should we continue to ignore assessing our national and natural assets? Should the private sectors who are the drivers of tourism be left out of developing safaris and lodges for profit and income? Should Nigerians not know what its national icons are?
Foreign Affairs	Visas are the prerequisite for tourism visits worldwide	The current visa situation is an impediment to mass tourism	Should we not liberalise our visa regime as is the practice worldwide?

Education	People need to be educated on a new concept of Nigeria in terms of building this into the curriculum of civic studies at the primary level. Retraining of teachers is apposite.	Morality will be commonplace corruption will be reduced business environment will be predictable. Confidence of competence will enhance productivity	Foreign investors discouraged wrong imported values imbibed by our children and our educational values externally focused. Lack of re training will reduce motivation.
SMES	The SMEs is the hub of the creative industries and provide jobs for the teaming population of the unemployed youths and people who are in the industrial sector.	If SME fails, the Visual Arts of Fine arts and Design, arts and crafts which are the hall mark of this sector of Cultural product will fail. Funding must come from the financial sector of SME.	How can the Cultural sector perform in the face of non-availability of funds from SME for individual or small scale entrepreneur such as craftsmen, artists, designers, potters, weavers, painters, etc
Agricul-ture	Television and broadcasting helps to promote agriculture practices and products by factoring them into television programs.	If there is no effective television programming, critical agricultural innovations and information cannot effectively be disseminated to a large Nigerian population.	Can local programmes be effectively produced to international standards? Can television programmes reach a wide Nigerian public considering the cost owning and running television sets?

Source: Vision 2020, 2010

Appendix III: Actual values of facility in West African countries

	pcptp	mvptpp	rpptroad	pctp	mnflts	pcmcnp
Benin	16.54	20.62	18.95	7.1	3.59	80
Burkina Faso	6.57	10.76	15.67	6.3	2.7	61.1
Cape Verde	67.4	93.96	76.51	142.4	0.35	96
Cote d'Ivoire	8.18	11.41	9.29	16.8	10.81	59
Gambia, The	5.16	7.28	32.11	35.3	1.22	85
Ghana	21.05	32.96	22.82	10.7	11.71	73
Guinea	9	6	15.54	4.9	3.86	80
Guinea-Bissau	26.8	32.9	11.43	2.2	0.5	65
Liberia	2	2.87	6	30	0.73	16.35
Mali	7.05	9.22	12.26	8.1	3.52	21.5
Mauritania	12	21	13.85	45.4	2.17	62
Niger	17	14	23.44	0.8	1.96	45
Nigeria	30.81	30.81	25.57	8.5	64.3	83
Senegal	15.15	20.35	28.69	22.2	5.63	85
Sierra Leone	2.8	5.21	9.18	30	1.04	70
Togo	1.61	1.98	29.85	30.9	1.69	85

Appendix IV: Natural characteristics of West African countries

Variable	Benin	Burkina Faso	Cameroon	Cape Verde	Gambia	Ghana	Guinea	Guinea-Bissau	Ivory Coast	Liberia	Mali	Mauritania	Niger	Nigeria	Senegal	Sierra Leone	Togo
EL1	1	0	0	15	17	1	1	9	0	0	0	1	0	1	4	3	1
EL2	1	0	0	2	13	0	1	11	0	1	0	1	0	1	3	4	0
EL3	2	0	1	5	27	1	1	21	1	4	0	2	0	3	12	7	1
EL4	2	0	1	9	41	3	2	28	3	5	0	5	0	3	37	8	2
EL5	4	0	2	13	2	10	5	27	7	12	1	8	0	5	34	25	5
EL6	17	2	3	12	0	49	7	3	18	25	2	11	0	16	9	15	33
EL7	65	95	15	16	0	34	21	0	60	41	86	65	33	42	1	20	41
EL8	9	3	54	15	0	2	56	0	11	12	11	8	63	26	0	19	15
EL9	0	0	23	10	0	0	7	0	0	0	0	0	4	3	0	1	0
EL10	0	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0
CL1	0	0	2	0	0	0	0	0	0	27	0	0	0	0	0	0	0
CL2	80	56	21	0	83	43	69	62	22	0	14	0	0	56	29	16	61
CL3	11	0	55	0	14	53	18	38	66	20	0	0	0	12	0	14	33
CL4	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	13	0
CL5	0	0	18	0	0	1	4	0	12	53	0	0	0	6	0	58	0
CL6	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CL7	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	6
CL8	9	42	4	0	2	0	0	0	0	0	18	4	12	24	61	0	0
CL9	0	2	0	0	0	0	0	0	0	0	68	96	88	2	10	0	0
BI1	1	0	53	0	0	34	20	0	47	99	0	0	0	14	0	65	10
BI2	0	0	0	98	0	0	0	0	0	0	0	0	0	0	0	0	0
BI3	99	100	46	0	91	65	79	72	53	0	55	36	46	82	99	25	90
BI4	0	0	1	0	0	0	0	0	0	0	4	0	0	0	0	0	0
BI5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
BI6	0	0	0	0	0	0	0	0	0	0	42	64	53	0	0	0	0
BI7	0	0	1	0	9	1	1	28	0	1	0	0	0	2	1	10	0

Source: CEPII GeoDist Database (http://www.cepii.fr/anglaisgraph/bdd/distances.htm)