Tourism as a Liquid Gold for all Generations: A Perspective from the Nigerian Economy

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Abstract

ourism is one economic activity that has enhanced the revenue and foreign exchange bases of many countries in the contemporary human society. This sector holds out great potentials with the growing global populations and also to generations yet unborn. This study examined the extent to which tourism can enhance the economic fortunes of Nigeria in terms of revenue generation and foreign exchange earnings both now and in the future. Data was obtained from secondary materials such as books, periodicals, journals, magazines, the internet, etc. The Economic Model (Solow, 1993) was adopted as its theoretical framework while the mode of analysis was content analysis. Results from the investigation showed that with the increase in the growth of population, there is the tendency of greater number of people to embrace travelling as a leisure which would constitute higher revenue generating channels for future economies. Hence, the study recommended greater investment in tourism.

Keywords: Tourism, Liquid gold, Future generations, Foreign exchange earnings, Revenue

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Background to the Study

Recent developments in international tourism show that tourism activities are still concentrated in the industrialized nations of Europe and the Americas. This trend notwithstanding, there has been a substantial proliferation of new tourist generating and tourist-receiving markets in emerging economies as well. The growth patterns of some tourist destinations in East Asia, and the pacific south Asia, Africa and the Middle East are generally very dynamic, with some countries in those regions witnessing high rates of increase over successive years. Thus, the tourism industry has in recent decades, shown sustained growth in both revenues and number of tourists, and has left broad economic, social, cultural and environmental footprints reaching almost every part of the world. Activities in tourism tend to generate significant economic benefits to both host and tourists' home countries alike. Once primary motivation for the promotion as a tourist destination particularly in the developing countries is the expected economic improvement particularly in the areas of foreign exchange earnings, contributions to government revenues, as well as the generation of employment and business opportunities.

Tourism comprises those activities of persons travelling to and staying in places outside their usual places of residence for not more than one consecutive year for leisure, business and other purposes (WTO, n.d). Following the above conception to tourism, the industry comprises all socio-economic activities which are directly or indirectly involved in providing services to tourists. The world tourism organization standard classification of tourist activities lists over 185 supply-side activities that have significant connections to tourism to include, among others, the services of the following sectors: transportation, hotels and logging, food and beverage, cultural and entertainment, banking and finance, and promotion and publicity services. According to World Bank (2002), "tourism was called upon by the World Bank and United Nations World Tourism Organization (UNWTO) to take its place in national development of developing countries". In addition to this clarion call, the importance and relevance of tourism has led to a situation where, "most developing countries are now promoting some brand of tourism tied to its development" (Marafa, 2006; Yunis, 2004). As would be expected, Nigeria has keyed into this trend. Though an oil rich country, the nation is also richly endowed with abundant tourism resources. There are reasons to believe that every LGA in Nigeria has at least one tourism resource. Based on this notion, it can be extrapolated that the nation can boast of nothing less than 776 tourism potential sites and attractions given the present geographical structure.

A state like Cross River for instance, boasts of about 85 tourist sites/attractions. Out of this number, 16 the sites are nature-based, 42 are historical and cultural, 16 recreational while 11 other sites are industrial, educational, religious-based, etc. (Cross River Tourism Bureau, 2012, in Esu, 2013).

Hence, experts believe that tourism can trigger the much-needed socio-economic development in any country, Nigeria inclusive. When developed, the sector has the potential to constitute the mainstay of the nation's economy now and in the future.

Statement of the Problem

Tourism has become "a major source of economic growth, employment, earnings and foreign exchange for many countries" (Vaugeois, 2000; Basu, 2003) and considered by developing countries as "a main source of development and growth" (Hodur, Leistrestz, and Wolfe; 2005; Haller, 2012). This is a manifestation of the rapid growth in tourism following improvement in the global economy. However, while the growth in tourism owes itself to global economic growth, it is also a fact that tourism has contributed immensely to the growth of the global economy. As Nigeria looks up to tourism as a possible alternative income earner (Uduma-Olugu & Onukwube, 2012), there is every reason to believe that, "given the ever-increasing global population and the increasing desire for people to seek leisure, the sector has what it takes to sustain even the future generations and their populations. This is to say that the potentials in the sector if properly harnessed, could constitute a liquid sold for future generations. This study seeks to assess the extent to which tourism could be used to provide for the needs and desires of future Nigerians.

Objectives of the Study

The broad objectives of this study are to assess the extent to which tourism in Nigeria can sustain the future of Nigerian generation. Specifically, the study seeks to:

- 1. To examine the potentials of Nigerian tourism industry in employment generation.
- 2. Ascertain the extent to which the leisure of the future generation can be guaranteed through tourism.

Research Questions

The study will provide answers to two questions which include:

- 1. Can tourism as an industry guarantee the employment opportunities for the future generation of Nigerians?
- 2. To what extent can the tourism industry guarantee leisure of Nigeria's future generations.

Literature Review

Conceptual Clarification

Tourism: World Tourism Organization (WTO) (n.d), defines tourism as "an activity involving the travels of persons to places outside their usual environment for not more than once for leisure". Tourism has a growing number of definitions as, "it is practically connected to nearly all the sectors of the human social activity" (Beni; 2005). From a conceptual perspective, some definitions emphasize economic, social and cultural features, others anthropological elements, while others concentrate on geographical aspects-thus, "tourism can be stretched to encompass a wide range of phenomena" (Tribe, 2006).

Foreign exchange: According to O'Sullivan, et al (2003), "exchange rate is the rate at which one currency will be exchanged for another. It is also regarded as the value of one

country's currency in relation to another". For instance, an interbank exchange rate of 114 Japanese yen to the United states dollar means that Y114 will be exchanged for each uss\$1 or that US & 1 will be exchanged for each Y114. "Exchange rates are determined in the foreign exchange market" (The Economist, n.d).

Future generations: The future generation is usually contrasted with past generations or generations past. The term refers to the generation or generations to come in the future, after the currently living generations of human. It began to be used in reference to the pact the currently living generations have on the world future generations will live in the world they will inherit from humans living today. Current generations have a moral obligation to provide for sustainable living conditions not just to the future of their own children but indirectly also to the future of their children's children. This gave rise to the concept of sustainability usually incorporated in the concept of sustainable development which is referred to as, "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (United Nations, 1987).

Liquid Gold: This is a thematic unit that is linked to the years 5/6 ICL, <u>The Blue Planet</u>. Water is often referred to as liquid gold. In this thematic unit, children develop an understanding of the value of water and why they must not take these precious resources for granted. Thus, 'liquid gold' connotes treasure, value, and how precious an object, activity, or an economic sector is.

Mechifor (2014) conducted a study on tourism and sustainable development: implications at local community level. The objective of the paper was to outline a series of implications at communities' level which the relationship between tourism and sustainable development may generate, focusing on one of the most representative and important components of sustainable tourism, respectively ecotourism and its particular forms of rural and agro-tourism. Andreea and Andreii (2015), conducted a study titled, "towards sustainable tourism development in urban areas: case study on Bucharest as tourist destinations. The study explored how sustainable tourism development in urban areas can be basically achieved and managed. The paper disclosed some success factors for managing sustainable tourism development in urban areas and emphasizes a case study regarding Bucharest, the capital of Romania, as a tourist destination. The study was a survey.

Theoretical Framework Solow Economic Model (1993)

The economic sustainability element is based on Solow's (1974, 1986, 1993) amplified theory of capital convertibility and Hicks-Lindahl concept of income, which can be acquired by saving essential wealth (capital) resources for the benefit of future generations, (implementing the principle of fair distribution among generations). "Economic sustainability seeks to maximize the flow of income and consumption that could be generated while at least maintaining the stock of assets (or capital), which yield

beneficial outputs" (Hicks, 1946; Maler, 1990). The main goal of implementation of sustainability principles is safeguarding of an optimal amount of general capital (or sum of different kinds of capital) for future generations. Already in 1974, Solow analyzed the problem of an optimal distribution of capital accumulation among generations. In the framework of neoclassical theory of economic growth, allowance is made for the discussing criterion of 'Hicks-Solow sustainability" (Pierantoni, 2004, van den Bergh, 2007; Toman, Pezzey, and Krautkraemer, 1995). However, Ciegis (2005), observed that "some issues related to capital, which should be preserved, identification of types, convertibility, as well as other types of wealth, together with evaluation of ecological resources pose serious challenges"

Methodology

Adopting the methodology of content analysis, this study analyzed data obtained from secondary materials in the following sequence:

Research Question one (1): can the tourism industry guarantee the employment of future Nigerians?

According to Budeanu (2013), "the term 'largest industry in the world' is commonly used with reference to tourism following its recognition as the largest generator of wealth (over 11.7% of the total gross domestic product and employment (7% of the world's jobs)". Thus, no country of the world (industrialized or not industrialized) can afford to ignore the importance of tourism to its economic, social and cultural development on realizing the enormous benefits derivable from tourism. Even in Africa, countries like Kenya, Ghana, Tanzania, the sector contributes over 5% of the foreign exchange earnings. "Kenya in particular earns about US \$128 million annually from its tourist potentials" (Oyakilome, 2005). This is because tourism is essentially the industry that specializes in providing tour-related services to tourists. Annually, millions of people travel to various parts of the globe experiencing and enjoying nature's splendor, cultural glamour and man's creativity. This implies that Tourism holds enormous potentials for the socioeconomic development of any nation because the benefits derived from the sector exceed that of oil. Hence, "its activity has grown by around 25 per cent in the past 10 years" (UNWTO, 2012). Mannion (1995), stated that, "where tourism is important, it is a source of employment as well as wealth generation". According to the World Travel and Tourism Council (WTTC, 1993) in cooperation with Whaton Economic Forecasting Association (WEFA) group reported that, "Tourism provides direct and indirect employment for more than 200 million people one in every nine worker globally". In his view, Holloway (1998), affirmed that, "tourism enterprise accounts for at least 6 percent of World's Gross Domestic Product (GDP) and employs 127 million people around the world (one in every fifteen)".

Most scholars (Sadler and Archer, 1974) asserted that, 'the tourism industry is labour intensive which implies that the industry has a higher capacity of labour employment". Tourism creates jobs for the population of the destination both directly and indirectly and although statistics on employment in the sector in Nigeria are not easy to come by, it is

believed, Elechukwu (2010), that, "tourism is known to create jobs at various levels that are essential to the growth of the rural and national economy of a country". This position is strongly buttressed by the empirical study conducted by Ezenagu (2016), which posited that, "tourism resources are inexhaustible unlike crude oil". The implication is that it guarantees employment and income generation for the present and future generations which is the essence of sustainable development.

Table 1: Indicators of the contribution of tourism to national economy: 2000-2014

Period	Total	% share	Total	% share of	Total	% share of
	contribution	of GDP	visitor	total	contribution to	total
	to GDP		exports	export	employment	employment
2000	209.09	4.40	18.92	0.70	1643.70	3.80
2001	219.56	4.40	18.69	0.80	1700.40	3.90
2002	356.95	5.00	30.87	1.20	1960.90	4.30
2003	379.48	4.30	7.50	0.20	1773.60	3.70
2004	652.96	5.50	6.51	0.10	2349.60	4.80
2005	832.69	5.60	18.25	0.30	2445.60	4.90
2006	494.11	2.60	26.89	0.30	1209.00	2.30
2007	879.4	4.10	42.40	0.60	1988.80	3.60
2008	1870.4	5.40	159.0	1.10	2616.40	4.40
2009	1686.9	4.40	172.2	1.50	2266.60	3.80
2010	1315.8	2.90	149.8	0.80	1583.20	2.40
2011	1291.2	2.80	129.8	0.60	1595.10	2.50
2012	1460.0	2.90	109.0	0.60	1779.50	2.50
2013	1559.5	3.10	107.1	0.70	1836.80	2.70
2014	1589.6	3.10	106.2	0.70	1811.00	2.70

Source: World Tourism Council data base online

The table above shows that inspite of the fluctuation in the contribution of tourism to Nigerian economy, the sector still has great potentials for employment now and in the future. Hence, in the views of Rewane cited in Ajibola (2013), "Nigeria still remains one of the countries yet to begin nurturing its historical and anthropological assets to position them to become attractive".

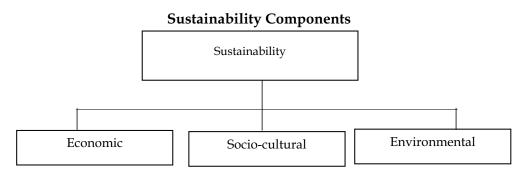
Research Question two (2): To what extent can the tourism industry guarantee the leisure of future Nigerian generation?

The study by Yusuf and Akande (2015), puts, "the number of tourist centres in Nigeria at well over seven thousand". Also, the World Travel and Tourism council (WTTC, 2014), envisaged a growth rate of 6 percent per annum for a period of ten years for the Nigerian Tourist industry. According to Ashikodi (2010), "in sub-Saharan Africa, particularly in Nigeria organized tourism dates back to 1962 with the creation of Nigeria Tourist Association by group of tourism practitioners in the country". Also, there is no doubt that many nations including Nigeria, have turned out to tap from the tremendous growth in

tourism. Such nations are taking steps to partake in the sharing of the ever-increasing global tourism market.

More so, many developing nations have also joined the race. Foreign exchange earnings, employment opportunity, economic diversification, economic growth, broader economic and social development policy, and other factors are the fundamental justification for the establishment and development of tourism (Sharply and Telfer, 2012)

The concept of sustainable development makes it clear that environment should not be destroyed with policy designed for improvement in economic and social well-being of the people (UNECE, 2004-0.5). Thus, sustenance of environmental development in the community's immediate environment becomes undisputed and vital in the minds of the local people. "Sustainability encompasses three components, namely economic sustainability, sociocultural sustainability and environmental sustainability as illustrated below" (Richards and Hall, 2000).



Source: Ekandayo, 2014

Many analyst of tourism sector in Nigeria argue that the sector has potential of not only contributing to foreign exchange earnings but also can aid the reduction of the concentration of foreign exchange sources. According to the Nigeria Embassy (n.d),

Nigeria is a potential tourist paradise which boasts of good tropical weather, variety of wildlife, awe-inspiring waterfalls, historical relics, captivating beaches, and rolling hills, coupled with warm-hearted and culturally active populace. The weather, vegetation, and climate render Nigeria a tourism destination of variety and contrast. The climate and weather include the semi-temperate climate of Jos Plateau, the harmattan haze of the north, and the humid weather of the south. The country's vegetation ranges from the light shrubs of the arid north to the thick mangrove swamps of the south.

All the above resources and features, which are not likely to be destroyed given the spirit and quest for sustainable development, constitute great potentials for the current and future generations. Presently, the sector provides the demands of the current generations (local communities and foreigners). Table 2 below leads credence to the fact.

Nigeria Tourism Sector: contribution, constraints and opportunities.

Table 2: Domestic demand for tourism: Percentage distribution of household visiting tourism centers in the last 6 months in 1996/97

Household	%	Destination	%	Type of ownership	%	Purpose of visit	%
characteristics		of visit		of Tourist Attraction			
Male	1.8	Museum	10.6	Federal Govt.	12.7	Business only	7.2
Female	1.5	Zoo	20.5	State	31.7	Sight-seeing only	45.0
Below 30 years	2.1	Dams	6.3	Local Govt.	12.5	Business/sight seeing	14.0
Above 30 years	1.2	Festival	38.4	Private	09.9	Leisure	30.3
No schooling	0.9	Games	7.7	Federal/State	7.2	Others	3.5
		Reserve					
Below primary	0.1	Warm	2.3	Federal/Private	0.6	-	-
		Spring					
Secondary	1.0	Monument	3.7	State/Private	1.1	-	-
Post-secondary	0.4	Others	10.9	Others	4.5	-	-

Source: Federal office of Statistics, Statistical Bulletin

Findings

The result of this investigation reveals the following:

- 1. Tourism is the largest industry in the world and is recognized as the largest creator of wealth as it offers the world over 11.7% of the total gross domestic product as well as 7% of jobs.
- 2. No nation can afford to ignore this sector following its enormous benefits. This informs the decision of some developing African countries like Kenya, Tanzania and Ghana to embrace the sector for purposes of foreign exchange, revenue and job creation.
- 3. The benefits of tourism are in excess of that of the oil sector.
- 4. The WTTC (1993) reveals that over 200 million people (one in every nine) are offered direct or indirect jobs in tourism.
- 5. The tourism industry in Nigeria is yet to be nurtured to optimal performance.
- 6. The numerous tourist sites in Nigeria, numbering over a thousand (1000) offer great potentials for leisure and employment, revenue for all generations (present and future).
- 7. As the sector stimulates and enhances, economic, social and cultural development, it also encourages people (present and future Nigerians) to seek recreation and leisure.
- 8. The sector also provides the sensitization of local populations on the need to protect the natural environment and its biodiversity which are vital components of sustainable development.
- 9. Nigeria is a potential tourist paradise as it boasts of good tropical weather, variety of wildlife, awe-inspiring beaches, and rolling hills coupled with warm-hearted and culturally active populace.

Conclusion

The Brundth Commission defines sustainable development as that development which meets the needs of the present and future generations. Meeting such needs depends on the ability of the global population to protect and preserve the environment. Tourism is one sector that derives its relevance in the scheme of development through such environmental protection, preservation and sustainability. This has enhanced the potentials of the sector in attaining the status of the 'largest industry' on the globe, providing foreign exchange, revenues to governments, job creation, and leisure for the present and future generations. Countries across the globe have realized the importance of this sector which has stimulated even the developing nations in Africa (Nigeria, Kenya, Ghana, Tanzania, etc.) to embark upon policies to enhance the performance capacity and its relevance in the sustainable development agenda. Nigeria with its abundant natural endowments, has great potentials as its numerous tourist sites, when nurtured could ensure the much-needed turnaround in the living standards of its citizenry. Thus, the industry holds great prospects for the employment, leisure, income, revenue and wellbeing of Nigerians even in the distant future.

Suggestions

- The world has recorded the trend whereby tourism has turned the liquid gold for all generations by providing a platform in which the industry constitutes the largest employer of labour, largest wealth creator for nations (foreign exchange and revenue). Nigeria should formulate policies to enable it key into this global trend.
- 2. The tourism industry should always be made a front burner issue in the growth plan of this nation. The industry should be nurtured to take its place in the scheme of things.
- 3. The numerous tourist sites in Nigeria should be turned into a beehive of activities to enable the sector attain optimal performance.
- 4. Nigerians should be encouraged to seek leisure as a way of boosting local patronage of its tourism facilities.
- 5. Protection and preservation of potential and actual tourist sites should constitute a matter for orientation for the local communities organized the federal authorities.
- 6. The Nigerian populace should be encouraged to sustain the warm-hearted and culturally active tendency for which they are known.

References

- Ajibola, A. (2013). Tourism as revenue driver: How committed is Nigerian Government? 3Invest online, from http://www.3investonline.com/tourism-as-revenue-driver-how-committed-is Nigeria.
- Ashikodi, T. I. (2010). Tourism development in the coastal region of Nigeria: Economics of Tourism development a shift from oil dependence. Retrieved from http://www.worldculturelink.org/fileuploads/Tourism%20development%20in%the%20coastal%20region%20of%20Niger-1300917459-2.pdf
- Basu, P. (2003). Is sustainable tourism development Possible? Broad issues concerning Australia and Papua Guinea. In R.N. Gosh, M.A.B Saddique and B. Gabby (Eds). *Tourism and Economic Development:* Case study from Indian Region. Hampshire, England.
- Budeanu, A. (2013). Impacts of responsible sustainable tourism: A tour operator's perspective. *Journal of Cleaner Production*. Available online @ www.sciencedirect.com
- Ciegis, R. (2009). Darnausvystymosivertinimastaikomojiekonomika: sisteminiaityrimai
- Ekechukwu, L. C. (2010). Pathways for harnessing the potentials of natural and cultural site and features on the Nsukka-Okigwe Cuesta. *International Journal of Research in Arts and Social Sciences*, 2, 1-11.
- Esu, B. B (2013). Strategies for harnessing investment opportunities through tourism in Nigeria. *Journal of Resource, Hospitality, Tourism Culture*. 1(1), 1-14.
- Ezeike, I. (2010). NTDC has contributed to the National Economy-Runsewe, accessed online @ Tourism-News-Nigeria
- Federal office of Statistics (1998). Annual abstract of statistics.
- Federal office of Statistics, Abuja, National Accounts.
- Haller, A. (2012). Growth and development through tourism in conditions of liberalization: Theme and Concepts. *Paper presented at the 14th International Conference. Romanian Tourism in Context of Sustainable Development, Present and Prospect* Vantra Dornei, Romania.
- Hicks, J. (1946). Value and capital. UK: Oxford
- Hodur, N. M., Leistristz, F. L., & Wolfe, K. L. (2005). Assessing the economic development of Nature. *Natural and Social Sciences*, 15(Fall), 279-296.

- Maler, K.G. (1990). Economic theory and environmental degradation: A survey of some problems. *Revista de Analisis Economico*, (5), 7-17.
- Mannion, A. M. (1995). Global environmental change: A natural and cultural environment history. New York: Longman.
- Marafa, L. M. (2006). Achieving the millennium development goals through tourism. *Ecoclub*, (19).
- Nechifor, I. C. (2014). Tourism and sustainable development: Implications at local community level. *Economica*, 10 (5).
- O' Sullivan, A., & Sheffirin, M. S. (2003). *Economic: Principles in action*. New Jersey 07458: Upper Saddle River, Pearson Prentice Hall. ISBN 0-13-063085-3.
- Oyakhilome, F. O. (2005). Jumpstarting hospitality and tourism development. *A paper delivered tothe intra-African Trade/Tourism Workshop*. NEPAD Business group, International Forum, Abuja
- Pierantoni, I. A. (2004). Few remarks on methodological aspects related to sustainable development. *Measuring Sustainable Development: Integrated Economic, Environmental and Social Frameworks*, OECD.
- Proceedings of a seminar held in the centre for African studies, University of Edinburgh, New Nigeria Newspaper, August 16, 2006, p.3.
- Richards G. & Hall, D.R. (2000). *Tourism and sustainable community development*. Routledge, GER.
- Sadler, G. & Archer, H. (1974). The economic impact of tourism in developing countries.
- Sharply, R. & Telfer, D. J. (2002). Aspects of tourism; Tourism and development: Concepts and issues. Channel view Publications: Great Britain.
- Solow, R. M. (1974). The economics of resources and the resources of economics. *American Economics Review*, (64), 1-14.
- Solow, R. M. (1986). On the intergenerational allocation of exhaustible resources. *Scandinavian Journal of Economics*, 88(2), 141-156.
- Solow, R.M. (1993). An almost practical step towards sustainability. *Resources Policy* (19), 162-172.
- The Economist-Guide to the Financial Markets.

- Toman, M. A., Pezzey, J., & Krautkraemer, J. (1995). Neoclassical economic growth theory and sustainability. Ed Bromley, D.W. *Handbook of Environmental Economics*. Oxford.
- Uduma-Olugu, N., & Onukwube, H. N. (2012). Exploring the Coastal Tourism Potentials of Lagos. *Sustainable Development*, 5(7), 156-165.
- United Nations Economic Commission for Europe (2004-05). Sustainable development concept and action. Accessed online @http://www.unece.org/oes/nutshell//2004-2005/focussustainable.development.htm/
- United Nations General Assembly (1987). *Report of the World Commission on Environment and Development: Our common Future*. Translated to the General Assembly as an Annex to document A/42/27.
- United Nations World Tourism Organization (2006). *Nigerian Tourism Development Master Plan*, Madrid: UNWTO.
- UWNTO (United Nations World Tourism Organization) (2012). Tourism Highlight. Available from mkt.unwto.org/en/publication/unwto-tourism-highlights-2012-edition.
- Van den Bergh., J. C. (2007). Sustainable development in ecological economics. Eds. Atkinson, G., Dietz, S., and Neumayer, E. *Handbook of sustainable development*. Cheltahem, 63-77
- Vaugeois, N. (2000). Tourism in developing countries: Reforming a useful tool for Economic Development. *Paper presented at the 6th World Leisure Congress*, Bilbao, Spain.
- World Bank (2002). Millennium development goals: Eradicated extreme poverty and hunger. Retrieved on September 20, 2012 from http://www.development.goals.org/poverty.htm
- World Tourism Organization (n.d). "Recommendations on tourism statistics and concepts, definitions and classification for tourism statistics". Spain, Madrid. http://www.world-tourism.org.
- Yunis, E. (2004). Sustainable tourism and poverty alleviation. *Paper presented at the World Bank ABCDE Conference*-Europe: Brussels.
- Yusuf, M. A & Akinde, M. A. (2015). Tourism development and Economic growth nexus: Nigeria's Experience. *European Journal of Hospitality and Tourism Research*, 3(4), 1-10.

Zamfir, A., & Razvan-Andrei, (2015). Towards sustainable tourism development in urban areas: Case study on Bucharest as tourist destination *Sustainability*, ISSN 2011-1050 www.mdpi.com/journal/sustainability.