IMPACT OF TOURISM SECTOR ON ECONOMIC GROWTH IN TANZANIA: A CASE STUDY OF RUBONDO NATIONAL PARK AT GEITA REGION

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CERTIFICATION

The undersigned certifies that he has read and hereby recommends for acceptance by the Open University of Tanzania a research Proposal entitled; "**Impact of Tourism Sector to Economic Growth of Tanzania: A Case Study of Rubondo National Park at Geita Region"** in partial fulfillment for the requirements of the Degree of Master in Economics of Open University of Tanzania.

……..

Dr. Timothy Lyanga

(Supervisor)

…….

Date

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DECLARATION

I, **Erick Nyamohanga,** declare that the work presented in this dissertation is original and mine. It has never been presented to any other university or institution. Where other people's work have been used, references have been provided. It is presented in partial fulfillment of the requirement for the Degree of Master of Science in Economics of the Open University of Tanzania.

…….

Signature

22/08/2023

…….

Date

DEDICATION

This thesis is dedicated to my parents my late father Zakaria Nyamohanga and my mum Eunice Nyamohanga for their support and encouragement that geared me towards completion of this dissertation.

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I would like to thank the Almighty God and his son Jesus Christ for the gift of life and his protection, guidance and for the strength and encouragement words that I can do everything though him who strength me.

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ABSTRACT

The study assesses the impact of tourism sector on economic growth in Tanzania specifically of Rubondo Island national park in Geita region and their relative importance. Annual time series data were employed for the period 2000-2020.Both descriptive statistics and multivariate regression analysis were utilized. Johansen cointegration test revealed that long run relationship exists among the variables and vector error correction mechanism results revealed short-run and long-run causality exists among the variables. The economic growth in Tanzania has increased a great with tourism sector, as a result of which Tanzania employment rate and tax collection rate in tourism sector has increased. The study further showed that; hunting, hotels, animals, horticultural, business around national park, tour guides, petty business, hunting companies, foreign exchange had an impact on the economy. The study concluded that Tanzania economic growth has been contributed by availability of tourists who leads to income generation and provision of employment. It was recommended to harmonise fiscal policy with monetary policy first before effectively linking them to tourism policy.

Keywords: *Tourism sector, Economic growth, Employment creation, Tax collection*

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LIST OF ABBREVIATIONS AND ACRONYMS

ADF	Augmented Dickey-Fuller
ANOVA	Analysis of variance
ECM	Error Correction Mechanism
GDP	Gross domestic product
GNP	Gross National Product
ITR	International Tourism Receipts
LDCs	Least Developed Countries
NCAA	Ngorongoro Conservation Area Authority
ML	Maximum Likelihood Method
MM	Method of Moments
NBS	National Bureau of Statistics of Tanzania
OECD	Organization for Economic Cooperation and Development
OLS	Ordinary Least Squares
SADC	Southern African Development Community
SDGs	Sustainable development goals
SMEs	Small Medium-Term Enterprises
SPSS	Statistical Package for the Social Sciences, 2020 version)
TANAPA	Tanzania National parks
TTB	Tanzania Tourist Board
UNDP	United Nation Development Programme
UNWTO	United Nations World Travel Organization

URT	United Republic of Tanzania
WB	World Bank
WTTC	World Travel and Tourism Council

CHAPTER ONE

INTRODUCTION

1.1 Overview

In this chapter represents background of the study, statement of the problem, objectives of the study, research questions, significance of the study, scope of the study, justification of the study and limitation of the study.

1.2 Background of the Study

As per the World Bank Report (2019), Economic Growth is the most influential tool for reducing poverty and improving the quality of life in developing countries. Both cross-country study and country case studies provide devastating evidence that rapid and sustained growth is critical to making faster progress towards the Sustainable Development Goals (SDGs) and not just the first goal of halving the global proportion of people living on less than USD 1 a day (Mladen, 2015).

Tourism is typically regarded as having a positive impact on host societies primarily due to the fact that money generated from tourism is derived from the tourist's home rather than from the destination; in other words, it is new money coming into the local economy (Cohen, 1974). However, there are many different approaches that must be considered when weighing the positive impacts against the negative. As of 2015, the global tourism industry was worth US $1.26 trillion, with a total of 1.186 billion international tourist arrivals, making it one of the largest industries in the world (UNWTO, 2016). International Tourism Receipts (ITR) within developed countries account for the majority of economic impact.

However, African and Middle Eastern countries produce about 7% of the global ITRs which constitutes about US $87 billion (UNWTO, 2016). Although this may not seem substantial when compared to the total global economic contribution of tourism, it is a significant number when considering what large part tourism plays in these countries 'gross domestic products (GDP) and how much it has increased in only the last few decades. In 1990, the number of visitors to Africa was 14.7 million. There was a considerable increase, however, with 56 million visitors in 2014 (UNWTO, 2015).

Most of the developing countries are endowed with significant tourist attractions; tourism has emerged as a new drive for economic growth given its ability to generate foreign exchange and employment. Tourism development is increasingly as an important tool in promoting economic growth, alleviating poverty, and advancing food security (Richardson, 2012). A number of studies including United Nations World Travel Organization (UNWTO, 2002) have shown that tourism play a significant role towards balanced sustainable development in the world, and is effectively harnessed to generate net benefits for the poor.

The potential of the tourism sector as a development tool which positively contribute to economic growth and poverty reduction emanates from its several peculiar characteristics (UNWTO, 2002) including; industry as an opportunity for economic diversification, tourism is the export sector whereby consumer travels to the exporting country which consequently providing opportunities for the poor to become exporters through the sale of goods and services to the tourists, the sector is labour intensive and supports a diverse and versatile labour market and there are

numerous trickledown benefits of tourism for the poor people. The overall statistical from the World Council of Travel and Tourism (WTTC) database shows that on the average contribution of tourism sector to gross domestic product (GDP) of the Southern African Development Community (SADC) at regional level is around eight percent annual, with the contribution rising to 50% and 30% in the case of Seychelles, and Mauritius respectively. The same shares (50% and 30%) are also accounted by the sector in terms of formal and informal employment in the latter two countries.

Tanzania has protected more than 25 per cent of its landmass as conservation areas. The country is endowed with world class tourism assets i.e., natural, cultural, historic and archeo-logical those are in high demand in national and international tourism markets including Ngorongoro conservation area authority (NCAA), national park i.e., Rubondo, Lakes e.g. Babati, game reserves e.g., Selous, Mt. Kilimanjaro and its national park and beaches i.e. Zanzibar. Tanzania has 22 national parks, 17 game reserves, and 50 game-controlled areas and marine parks (URT, 2012). Tourism sector is important and contributes a major part of the economy, where the tourism business makes up 11.4 percent of GDP and directly employs about 300,000 people with an average growth rate of 20 percent per year (WTTC, 2013). The number of tourists visited Tanzania in 2011 increased from 867,994 the same year to 1,077, 058-year 2012, a significant rise of 24 percent and in between 2011 to 2015 the number was 1,113,000 (WB, 2016).

Rubondo Island National Park is a fascinating island park offering the best of both land and water-based safari experiences. Tucked away in the southwest part of Lake

Victoria, common inhabitants of the island include the wild chimpanzees governing the evergreen and semi deciduous forest framing the shores of the lake, also within the lake hippo, elephants, giraffe, sitatunga, bush back, pythons, velvet monkeys, African fish eagle, butterflies and crocodile are part of tourist attractive. In the year 2012 Rubondo national park contribute 0.08 per cent of the total visitors visiting Tanzania national parks. According to Economists at Large (2013) the tourism industry contribution to the Tanzania's GDP is 6.1% figure 1.1show that Rubondo Island National Park contribution to the tourism revenues is stated to be TZS millions 91.9 in 2016 to 373.1millions in the year 2020 as GDP tourism contribution revenues.

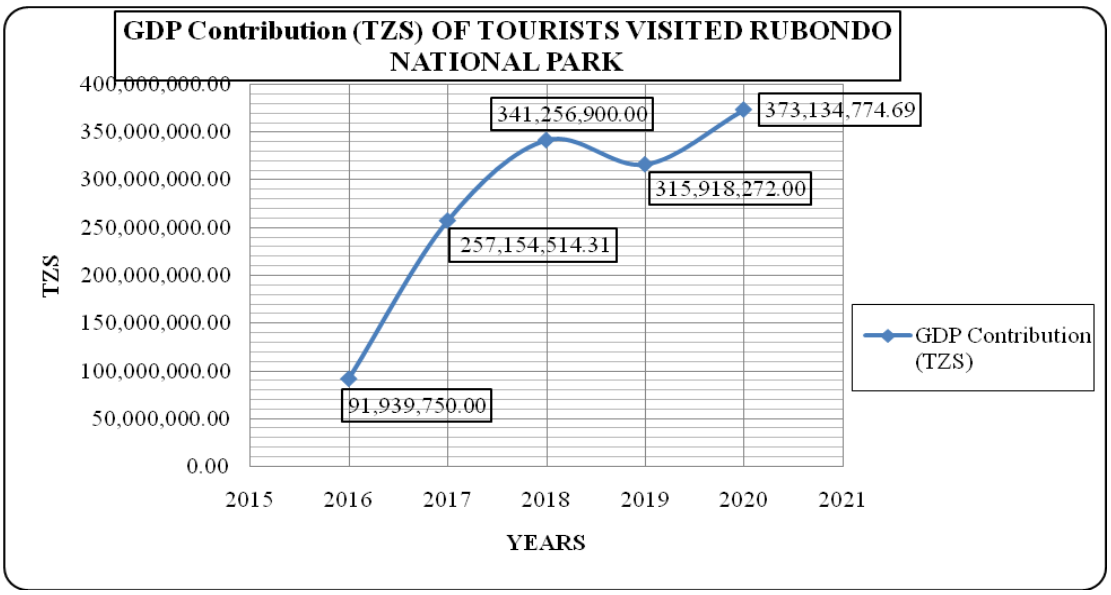

Figure 1.1: Rubondo National Park Contribution to GDP

Source: Tanzania's Tourism Future, (2021).

1.3 Statement of the Problem

Tourism is the most important sector for economic growth and job creation all over the world (URT, 2010), indirectly it generates a demand for transport, telecommunication and financial services (WB, 2011). Tanzania is endowed with a

rich storehouse of nature-based tourist attractions and tourism industry has emerged as a robust source of growth and an economic stabilizer. Moreover, tourism have been among the fastest growing sectors in Tanzania with an average growth rate of 5.5 per cent between 2011 and 2012 (UNDP, 2013) and the country earning foreigner exchange value US $ 746 million in 2009 (URT, 2010). The sector generates the bulk of export revenues for the country and is a reliable source of revenue to the government and provides well remunerated direct employment to the people. Statistics showed that Gross Domestic Product (GDP) in 2013 tourism accounted for about 9.9 percent of GDP (equivalent to an amount of US$4 billion in direct and indirect contributions) (Tanzania's Tourism Future, 2015).

Economic at Large (2013) and IUCN (2009) report that hunting tourism contributes insignificantly to national economy and community development in Tanzania using comparative advantage between hunting tourism and other form of tourism as well as hunting tourism visa agriculture correspondingly. Contrary, Lindsey e*t al.* (2007); Kibebe (2005); Fred (2004) and Baldus and Cauldwell (2004) reported that contribution of hunting tourism is beneficial to Tanzania economy specifically in raising GDP and community development. Besides, authors such as Ndoinyo (2002); Tomlinson (2002), Sachedina (2008) and Packer *et al*. (2010) argued that the industry is more destructive than beneficial to Tanzania and according to them, it should be stopped.

1.4 General objective

The general objective of this research is to assess the impact of tourism sector to economic growth in Tanzania.

1.5 Specific Objective

i. To assess the revenue contribution of Rubondo Island national park tourism to economic growth of Tanzania
ii. To examine contribution of foreigners and citizen visitors to revenue of Rubondo Island National park
iii. To determine the relationship between tourism growth and revenue collection in Rubondo Island National Park

1.6 Research Hypothesis

H_1: Tourism has a negative effect in Tanzania economic growth

H_2: Foreigners and citizen revenue have no influence on economic growth of Tanzania

1.7 Scope of the Study

This study is justified by the need to examine and make a comprehensive document to the impact of tourism industry to economic growth in Tanzania on Rubondo Island national park in Geita region. The study involved data from Rubondo Island national park staffs that monitors the implementation of tourism activities. The study focused on tourism sector to economic growth and its impact in the economy of Tanzania between 2000 up to 2020. It was in 2007 when Tanzania embarked on the Wildlife Policy of Tanzania of the Ministry of Natural Resources and Tourism.

1.8 Significance of the Study

Development of tourism sector would lead to economic growth and development through different directions. The study involved both empirical and managerial

significance implications. The empirical significance helped to seal the information gap concerning the contribution of Rubondo National park to the tourism industry and the national economy growth in general, moreover, the findings contributes greatly to the body of knowledge to be used as a bottom base for the other scholars about the importance and role of Rubondo national park to the national economy. On managerial implications findings gives focus to Rubondo managerial board and other stakeholders on the impacts of tourism on the national economy growth, thus improving the revenue performance of Rubondo national park.

Moreover, the findings facilitates and formulate an effective new reforms and policy geared towards better performance and assist policy makers to formulate appropriate policy and bylaws which increases efficiency and effectiveness of the tourism actors. Therefore, the result of this study helps policy makers understand the relationship between the tourism industry and economic growth in Tanzania. Moreover, this study can supplement the limited empirical evidence on the link between tourism sector and economic growth in Africa particularly to Tanzania.

1.9 Limitation of the Study

This study encountered some limitations like challenges in acquiring data needed by the study on time, this was due to bureaucracy to some institution. Furthermore, the involvement of large sample has attributed to the different unobserved budget constraints in data searching, analysis and report writing on time.

1.10 Organization of the Study

This research report is categorized into five chapters, namely, chapter one which

gives the general introduction, background of the study, statement of the problem, research objectives which are general objective and specific objectives, research hypothesis. Scope of the study, significance of the study and limitation of the study. Chapter two presents the review of literature both theoretical and empirical, chapter three illustrates research methodology, data types & its sources, and the variables used in the study. Also chapter three deals with the data source and specification of the econometric model employed for the empirical analysis and the theories used as the function. Chapter four discusses the data analysis and estimations. Lastly, chapter five presents summary of the study includes conclusion, and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section reviews the tourism concepts, theoretical literature, empirical literature, and conceptual framework on the impact of tourism sector on economic growth in Tanzania. The chapter describes the theoretical and empirical background where relevant theories related to the contribution of tourism industry to the global, national and individual economy have been cited and discussed. Furthermore, matters relating to the general and specific research objectives are discussed alongside relevant supporting studies. This includes understanding of the concept and some aspects that may result into acquisition of the tourism experiences in the revenue contribution. The chapter further discusses some theories and models used by the study to inform and reveal some existing features and relationships in respect of the study main objective. Some empirical review further presents in the effort to address the study's hypothesis and the conceptual framework will finally develop in this section. The chapter includes the following heading:

2.2 Definitions of the Concepts

2.2.1 Tourism

The World Tourism Organization defines tourists as people travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes. According to Malleo and Mtengwa (2018) tourism is a social, cultural and economic phenomenon which entails the movement of people to countries or places outside their common environment for private or

business purposes. This study adopts the definition by Macintosh and Goeldner (1986) which defines tourism as the sum of the phenomena and relationships arising from the interaction of tourists, business suppliers, host governments and communities in the process of attracting and hosting tourists/visitors (Theobald, 1998).

According to Macintosh and Goeldner (1986) tourism is a collection of activities, services and industries which deliver a travel experience comprising transportation, accommodation, eating and drinking establishments, retail shops, entertainment businesses and othe hospitality services provided for individuals or groups traveling away from home. Based on the definitions from several experts above, it can be concluded tourism is the activities of people traveling to and staying in places outside their usual environment for leisure, business or other purposes for not more than one consecutive year. Wickets (1994) refer economic growth as an increase in a country's production capacity. Growth stimulated by an increase in the quantity or quality of the factors of production such as labor and capital, Moreover, the theory of economic growth general deals with economics long run trend or potential growth parts.

2.2.2 Economic Growth

Economic growth is defined by Samuelson and Nordhaus (2001) as an increase in total output of nation over a time. It is measured by Gross Domestic Products (GDP). According to Jhingan (2007) GDP is defined as 'the total value of goods and services produced within the country during a year'. Gross Domestic Product can be measured by income, production or expenditure methods. Different variables are

used to determine economic growth. According to Baro and Sala- i-Martin (2004) mentioned them as fertility rate, life expectancy, education attainment, consumption ration, inflation rate, international openness, terms of trade, investment ration and real gross domestic investment ratio to real GDP.

2.3 Theories of Economic Growth

2.3.1 Neo-Classical Theory

In the 19th to 20th century the group of economists who revised the classical economic theories/principles emerged. This group championed by Alfred Marshall (1842 -1924) and Leon Walras (1834 -1910) who known as the founders of the neo-classical economics (Pressman, 2016). Marshall is greatly contributed to development of microeconomic theory. Studied the individual markets by using demand and supply analysis, hence developed the demand and supply laws (Marshall, 1890; 1879). On the other hand, Walras discovered marginal utility and emphasized methodological individualism, which is believed that all explanations of economic phenomena should be based upon individual acts of choice (Pressman, 2016). Other contributions on the neo-classical economics are Carl Menger (1840-1921) and William Stanley Jehons (1835-1882).

The Neo-classical theory were used to guide this study, the contribution of theory of this work to the empirical literature is that it will provide evidence of the extent to which the tourism industry can spur economic growth while accounting for the conventional sources of economic growth using theory. The empirical results shows the tourism industry significantly contribute both to the current level of gross domestic product and the economic growth rate of Tanzania as do investments in

physical and human capital. The theory shows the relationship between effects of a tourism expenditure tax, employment creation and economic growth by strengthening their tourism industries.

2.3.2 Domar's (1946) Multiplier-Effect Economic Growth Model

The exogenous economic growth models compose various developed empirical models on neoclassical economics. The first neoclassical mathematical proposition on the process of economic growth was propounded by Evsey Domar in his 1946 paper on capital expansion, rate of growth and employment (Chirwa and Odhiambo, 2018; Chukwuemeka, 2015). Domar (1946) looked at the relationship between capital accumulation and full employment (Chirwa and Odhiambo, 2018). Domar (1946) model's assumption was that an economy will be in equilibrium when its productive capacity is equals to its national income. Domar adopted a classical doctrine where the labour force and its productivity were the key to the economic growth paradigm (Chirwa and Odhiambo, 2018).

Domar assumed that growth rate of the national income was a combined effect of the growth of labour and its productivity. Domar adopted the general equilibrium theory where the demand meets supply (Chukwuemeka, 2015). Domar developed his model in a closed economy setting disregarded the possibility of having external economies or diseconomies. From the supply side, the rate of growth of the production function was a function of productive capacity –capital ratio of the following order with respect to time (Domar, 1946).

$$\frac{dP}{dt} = I\sigma, \quad \text{.....(1)}$$

Where I = Investment per year, and σ is a productive capacity

From the demand side, Domar defined the rate of growth of national income (Y) as a function of the rate of growth of investment over time through the multiplier driven by the marginal propensity to save, S. The demand function therefore is represented as;

$$\frac{dY}{dt} = \frac{dI}{dt} \cdot \frac{1}{S}, \quad \text{.....(2)}$$

Where, Y is the national income, and S is equal to marginal propensity to save. At the general equilibrium position supply meets demand (Domar, 1946).

$$\frac{dY}{dt} = \frac{dP}{dt} \quad \text{.....(3)}$$

$$\frac{dI}{dt} \cdot \frac{1}{S} = I\sigma \quad \text{.....(4)}$$

By directly integrating both sides equation $\frac{dI}{dt} \cdot \frac{1}{S} = I\sigma$ with respect to time, Domar obtained the equilibrium growth path for a closed economy

$$I(t) = I_0 e^{S\sigma t} \quad \text{.....(5)}$$

For the economy to remain in equilibrium, the actual rate of investment r, to grow at the same rate as the required equilibrium rate of $S\sigma$. From the equation $I(t) = I_0 e^{S\sigma t}$ differentiating with respect to time,

$$\frac{dI}{dt} = S\sigma I_0 e^{S\sigma t} \quad \text{.....(6)}$$

From

$$\frac{dY}{dt} = \frac{dI}{dt} \cdot \frac{1}{S}, \quad \text{.....(7)}$$

Then,

$$\frac{dY}{dt} = \sigma I_0 e^{S\sigma t} \quad \text{.....(8)}$$

Then, Domar, equates the actual investment rate (r) to the productive capacity (σ), r = σ

Then the equation, $\frac{dY}{dt} = \sigma I_0 e^{S\sigma t}$ becomes,

$\frac{dY}{dt} = rI_0 e^{S\sigma t}$, therefore, for Domar equilibrium to hold,

$$\frac{dY/dt}{dP/dt} = \frac{rI_0 e^{S\sigma t}}{S\sigma I_0 e^{S\sigma t}} = \frac{r}{S\sigma} \quad \text{.....(9)}$$

Therefore, the fundamental Domar growth model equation is,

$$\frac{dY/dt}{dP/dt} = \frac{r}{S\sigma} \quad \text{.....(10)}$$

Domar's proposition, for an economy to remain in a state of full employment that an actual of growth of investment should equal to the productive multiplier, r = $S\sigma$ (Domar, 1946). However, Domar's approach provides solution that were paradoxical, the situation where r> $S\sigma$, implies a demand creating effect that implied a short term of capacity (Chirwa and Odhiambo, 2018). On the other hand, a situation where r< $S\sigma$, it implies that a capacity generation effects or some productive capacity lying idle (Chirwa and Odhiambo, 2018; Chukwuemeka, 2015). Overall, Domar's economic growth path leads to a failure to attain full employment if the situation deviates from the equilibrium path $\frac{r}{S\sigma}$ (Domar, 1946; Chirwa and Odhiambo, 2018).

This adopted Domar economic growth model; the model used to considers the study variables of tourism sector to explain the economic growth in Tanzania (GDP). .

2.4 Empirical Literature Review

Tourism is considered as an important and integral part of their economic growth and development strategies as it serves as a source of scarce financial resources, job creation, foreign exchange earnings, and technical assistance (Sinclair, 1998; Dieke, 2004). The available studies on this area are reviewed below.

Using Spain's economic data, Balaguer and Cantavella-Jorda (2002) examine the role of tourism's in long-run economic development. The hypothesis of tourism-led economic growth was confirmed by applying cointegration and causality tests. The results indicate that, at least, during the last three decades' economic growth in Spain has been sensible to persistent expansion of international tourism. The increase of this activity has produced multiplier effects over time. External competitively has also been proved in the model to be a fundamental variable for Spanish economic growth in the long run. Finally, they concluded that earnings from international tourism affect positively the Spanish economic growth.

Kreishan (2010) conduct a research on the causality relations between tourism earnings and economic growth (GDP) for Jordan, using annual data covering the period 1970-2009. The Granger causality test is used to investigate the direction of causality between tourism and economic growth. The findings of the study showed that there is a positive relationship between tourism development and economic development in the long-run. Moreover, the Granger causality test results revealed

the presence of unidirectional causality from tourism earnings to economic growth. The study appears to support tourism led-growth (TLG) hypothesis for Jordan, which suggest that government should focus on economic policies to promote international tourism as a potential source of economic growth in Jordan. Durbarry's (2002) study on Mauritius also supports the hypothesis of tourism-led economic growth. Other similar works by Tosun (1999), Guduz and Hatemi (2005) and Zortuk (2009) have also found empirical support for the tourism-led growth hypothesis in Turkey.

Eugenio-Mart´ın, et al., (2004) investigate the relationship between tourism and economic growth for Latin American countries (Costarica, Panama, Mexico, Elsalvador, Chile and Honduras) from1985 through 1998. They employed a panel data approach and the Arellano-Bond estimator for dynamic panels. The countries are decomposed into three different groups according to GDP per capita, They obtain estimates of the relationship between economic growth and growth in tourists per capita conditional on main macroeconomic variables.

The empirical results show that tourism development can contribute to the economic growth of medium or low-income countries, while such a role is unclear for developed countries. Based on their findings, they argue that low-income countries need adequate levels of infrastructures, education and development to attract tourists. On the other hand, Medium-income countries need high levels of social development like health services and high GDP per capita levels. Similarly, Skerritt and Huybers (2005) investigate the effect of International Tourism on GDP per capita of 37 developing countries. The results indicate that tourism positively affect economic

development in these countries.

Similarly, employing the convergence approach based on Barro and Sala-i-Martin (1992) type analysis, Proenca and Soukiazis (2005) examine the impact of tourism on the per capita income growth of Portuguese regions and draw the conclusion that tourism can be considered as an alternative solution for enhancing regional growth in Portugal, if the supply characteristics of this sector are improved. While Cunado and Garcia (2006) also find some evidence of conditional convergence toward the African regional average (for Benin, Cameroon, Cape Verde, Djibouti, Egypt, Ghana, Kenya, Mali, Uganda, and Zimbabwe) and the U.S. (for Cape Verde, Egypt, Mauritius, Seychelles, and Tunisia), the coverage given to the contribution of tourism has been scant.

Brau, et al. (2007) set out to empirically investigate the observations made by Lanza and Pigliaru (2000). They employ panel dataset of 143 countries, 14 of which are classified as ‘small tourism countries’ (17 countries are classified as ‘tourism countries’; 14 of them are also classified as small). They try to evaluate the relative growth performance of these 14 countries by regressing economic growth on a set of dummy variables identifying groups of countries (OECD, Oil producers, LDCs, Small) and different control variables. The results indicate that tourism countries grow significantly faster than all the other sub-groups considered in their analysis.

Almost half of the 29 countries classified as ‘microstates’ are heavily dependent on tourism. The authors conclude that small tourism countries perform much better than other small countries. In their findings, smallness can be bad for growth, while the

opposite is true when smallness goes together with a specialization in tourism. Although these findings are useful, they cannot be considered definitive as the models do not include controls for factors that are considered important in the endogenous growth literature, such as investment and human capital (though they do include controls for some other factors, such as openness to trade and initial income levels).

Hazari and Sgro (1995) developed a growth model in which they model tourism as an added component to the domestic aggregate demand. Furthermore, they model the foreign supply of capital and the growth in export as dependent on tourism growth. They concluded that tourism has a positive impact on the long-run growth of the economy. This is generated by tourism acting as a timesaving device, which allows the domestic population to consume now rather than later. They found that growth in tourism facilitates foreign capital inflow, thereby reducing the need for high domestic rates of saving and capital accumulation.

Dritsakis (2004) examined the impact of tourism on the long-run economic growth of Greece. He analyzed the causality of GDP, exchange rate and international tourism receipts and concluded that there is a strong Ganger causality relationship between international tourism receipts and economic growth. In addition, the study finds that there is a strong causal relationship between exchange rate and economic growth, and moderate causal relationships between economic growth and international tourism receipts and between exchange rate and international tourism receipts.

In Africa, Fayissa et al. (2007), studies that investigate the contributions of tourism to economic growth and development for African economies. Some of the available empirical evidences on the continent are presented as follows: Using a panel data of 42 African countries for the years that span from 1995 to 2004, Fayissa et al. (2007) try to explore the potential contribution of tourism to economic growth and development within the conventional neoclassical framework. Their findings show that receipts from the tourism industry significantly contribute both to the current level of gross domestic product and the economic growth of sub-Saharan African countries as do investments in physical and human capital. They argue that African economies could enhance their short-run economic growth by strategically strengthening their tourism industries.

Tsega (2008) using panel data set for the period 1995-2005 for forty-two African countries find that there is a positive correlation between economic growth and tourism sector. According to her findings the tourism sector contributes significantly to the economic growth of the countries. On the other hand, economic growth is vital for the development of tourism sector. World Bank (2006) conducted a research for government of Ethiopia entitled Ethiopia towards a strategy for pro-poor tourism development. By collecting quantitative data on tourism-centric locations, the organization conducted a comprehensive work in the country.

Under the objective of responding to the government of Ethiopia request to define a strategy for tourism growth that commensurate with its vision for tourism, they report that the industry is under–performing relative to its tremendous potential value of its cultural heritage as an anchor for a tourism industry. They argued that this is

attributed to weakness in Ethiopia's image, market presence and penetration resulting in a demonstrable weak demand for its products; a severely under-valued cultural and natural resource base; uncompetitive supplier and support services. Finally, absence of efficacy coordinating and communicating governance framework to guide and integrate the many stakeholders at both the national and sub national levels is also considered as one among the many factors for the low performance of the industry.

Nouri & Soltani (2015) conducted a study on Evaluating the Effect of Tourism Marketing Mix on Buying Holiday Homes in Cyprus. This study was also an attempt to evaluate the effect of marketing factors including tourism marketing mix on the decisions of tourists in buying holiday homes. The results of the study showed that all elements of tourism marketing mix including product, price, promotion, place, physical environment, process and people have had a significant and positive impact on the tourists' decisions to buy holiday home in Cyprus.

In Tanzania, Kweka (2004) conducted research on contributions of tourism for the economic growth of Tanzania. Findings indicated that tourism expansion had a substantial impact on the economy as shown by increase in the real GDP, total welfare and exports. Improvement of the infrastructure appreciably amplifies the effects of tourism expansion and tourism taxation. Tourism provides source of tax revenue to finance infrastructure projects which will benefit the economy as whole as well as tourists. Makochekanwa (2015) trend of 13 years tourism's contribution to SADC economies as measured by Gross Domestic Product (GDP) it showed that, an overall, the average contribution of tourism to GDP at regional level is around 8 per

cent. In value terms, the sector contributed a total of $54.2 billion in 2011 and $56.6 billion in 2012 and is forecasted to add $89.8 billion by 2022 to the regional GDP. Therefore, an increase of around 58.7 per cent is expected in terms of value contribution of tourism between 2012 and 2022 to SADC economic activities.

Wade, et al (1999) conducted a study on a history and market analysis of tourism in Tanzania. The study revealed that although Tanzania contains some of the world's greatest natural wonders, it is a less developed nation than its East African neighbours and it offers a low density, high quality and high priced tourism experience. The study also found that there are numerous deficiencies present in Tanzanian tourism products. These include lack of infrastructure, trained staff and legal and regulatory framework, lack of marketing and promotion.

2.5 Conceptual Framework

The conceptual framework for this study was based on neoclassical economic growth theory, endogenous growth theory, and empirical evidence. The neoclassical economic growth theory forms the basis of the variables that affect economic growth; the endogenous growth theory introduces other variables that can impact economic growth and empirical evidence have shown that this topic of interest is worth of investigation. Consistent with empirical evidence from the growth literature, this study employs the real GDP per capita as a proxy for economic growth. This study considers tourism industry as a complex economic entity that comprises actors with different interests but organized to have common concern in order to pursue their diverse interests under external and internal forces.

This industry provides benefit under trickledown effect from other sectors whereby natural resources and artificial resource form the tourism industry. Tourism industries are the only business which foreigner citizen travel or follow the product in other countries which increase economy and social distribution aspect in local area. Increase economy distribution happen due to employment creation as well as marketing of local products for the local citizen. Tax which originated from selling of local products, employments and other services delivered to tourist create a greater opportunity for the tourism industry to contribute significant to the national economy and reduction of community poverty.

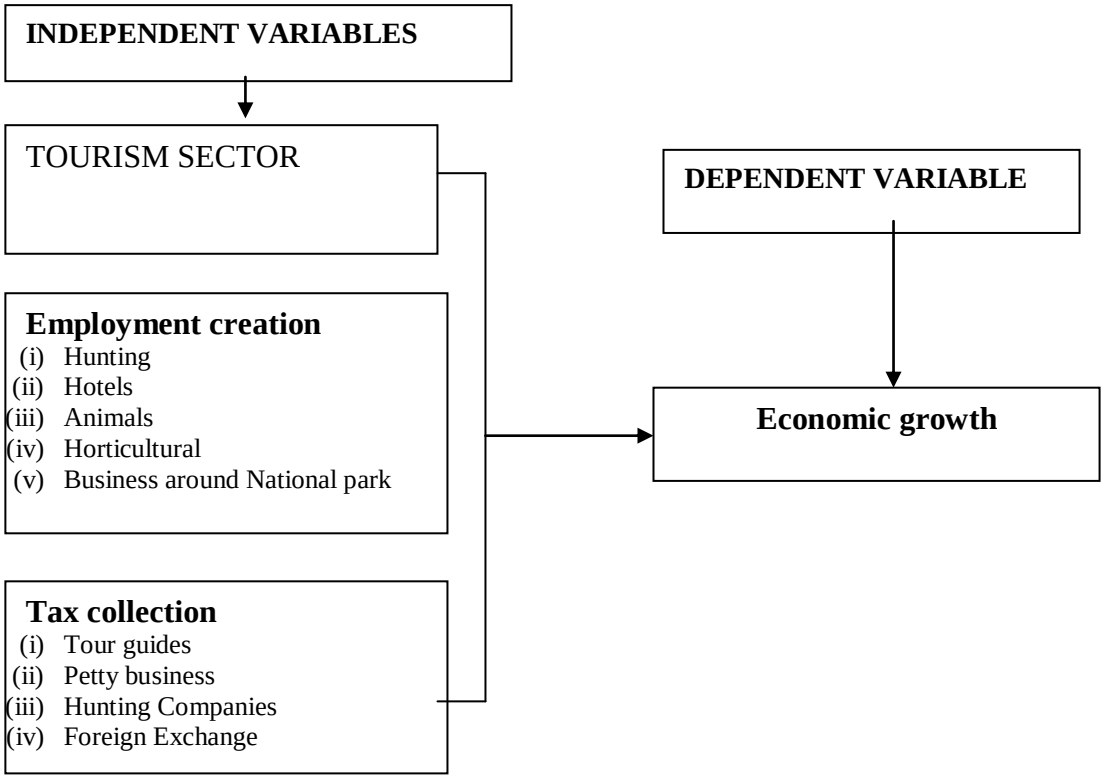

Figure 2.2: Conceptual Framework
Source: Researcher, (2021)

2.6 Descriptions and Measurement of the Variables

2.6.1 Dependent Variable

Economic growth represented by real per capita Growth domestic products rate (GDP). On average, higher GDP indicates the country is increasing the amount of production that is occurring in the economy and the residents have higher pay and subsequently are spending more. A similar measure has been used in a number of studies on the impact of tourism revenue on economic growth (Barguellil *et al.*, 2018).

2.6.2 Independent Variables

2.6.2.1 Tax Collection

Tax collection (TAC) which is the regard to that tourism sector provide foreign currencies to goods or basic services for areas of attractions of the economy hence earning from tourism are playing fundamental roles in economic development of a country will be the independent variable for this study.

2.6.2.2 Employment Creation

Employment creation (EC) is the variable also impact economic growth; this is number of people supply labour force to the sector of tourism. This variable employment opportunity to other people, stimulate other sectors of economy and improve social relationships as well as future bequest benefits. Tourism impacts employment, inflation, the currency offer and the speed of currency circulation, on production, on the balance of payments, on investment in the creation of physical infrastructure, which makes tourism possible and, finally, on the state's budget, increasing public expenditure through public services, but also increasing the public

income with the collection of direct and indirect taxes. Determinants of touristic attraction can be stimulated by tourism as it creates new sources of work with increases in both the size and number of lodging establishments, the opening of new restaurants and growth in transport. Tourism also creates jobs indirectly; related sectors supplying the productive sectors expand.

2.7 Research Gap

Despite evidence of rapid increase in tourism industry in Tanzania confirmed by increasing numbers of visitors in different tourist attractions, there is no clear documentation showing that the boom increase tourism in recent years is directly increases revenue collection in Rubondo national park. Most of the studies achieve to relate tourism and revenue in Tanzania. The information about the economic contribution, relationship of growth in tourism, trends and revenue collection in Rubondo national park is not clear explained. Although information about number of tourist and tax collection is available but the contribution of the park to tourism industry is scanty. Therefore, this research intends to fill this information gap and to increase the awareness toward the importance of Rubondo national park with relationship to the national economy growth.

Previous scholars have either focused on the importance, endowment with potential of rapid socioeconomic development, capable of generating foreign exchange, reducing unemployment and improving the standard of living of the people and challenges of HMIS or their studies were limited to few agencies. For instance, Minihan (2014) reviews in the development of culinary tourism. They are quality, physical setting, service, variety, differentiation, local culture, social media and

technology.

With a special focus on Tanzania, Kweka (2004) conducted research on contributions of tourism for the economic growth of Tanzania. Wade et al (1999) conducted a study on a history and market analysis of tourism in Tanzania. The study revealed that although Tanzania contains some of the world's greatest natural wonders, it is a less developed nation than its East African neighbours ant it offers a low density, high quality and high priced tourism experience.

2.8 Summary

The chapter has presented literatures which relate to the study. It has shown the theories and other studies which have contributed to the widening understanding of various issues relevant to the study. The review of literatures has however validated the study since from it the need to conduct this study has been identified from the issues which have been not covered in those findings. The studies have validated the idea of assessing the extent to which poor tourist services affect promotion and marketing of Tanzania national parks (TANAPA); a case of Rubondo National Park.

CHAPTER THREE

METHODOLOGY

3.1 Chapters Overview

This chapter in this study explains the methodology transformation of data into the useful information. The study methodology based on area, population sampling, sample size research strategy, techniques and methods to be used in data collection, various sources of data and how data will be collected and analyzed as well as explained in this chapter. A summary of the heading chapter is outlined as follows; -

3.2 Research Design

A time series research design and cross-sectional survey were used in to study the impact of tourism sector in economic growth of Tanzania. The study research design are cross sectional survey and time series data from 2000 to 2022, descriptive analysis on a randomly selected sample of the different categories of tourism industry stakeholders (tourists, consultants, and staff) were involved. Quantitative research techniques were used to gather numerical data for the statistical analysis. Time series data is the type of data which are repeated in two or more time in series measures.

The time series data has importance i.e. controlling for heterogeneity, more informative, more variability, less collinearity among the variables, more degrees of freedom and more efficiency, data are better to identify and measure effects, it data allow to construct and test more complicated behavioral models than other type of data. Moreover, this design considered to be appropriate as it allows series of years to be studied and assess the changes happened (Halady, 2004). The time series

research design has been selected due to the nature of the data under study which composed of various cross sectional at different years in order to obtain the time trend to meet the objective needs. This research adopted a quantitative research design with the aim of quantifying the impact of employment and tax collection on the economic growth of Tanzania.

3.3 Study Area

The study was conducted at Rubondo national park, the area was selected due to its potential on tourist attraction and contribution on the national economy. Rubondo Island National Park is one of two Tanzanian National Parks located on an island in Lake Victoria the other being Saanane Island National Park. Rubondo Island is located in the south-western corner of Lake Victoria, Tanzania. The main island Rubondo (2^o 18' S, 31^o 50' E) is 237 km^2 in size. The island protects another 11 islets, none much larger than 2 km^2. These 10 islands form the Rubondo Island National Park covering an area of 456.8 km^2 (176.4 sq mi). The highest point on Rubondo is the Masa Hills in the far south, at an elevation of 1,486m. The main island measures 28 km from north to south and is 3–10 km wide. Rubondo Island is on a rift in the lake.

3.4 Population

Rubondo island national park is the tourist attraction which attract on average of 1830 citizen and non citizen tourist annually, these number contributes significant importance in tourism industry as well as in Tanzania economy at large, generally it contributes on average Tzs 315,918,272 per annum. The population of the study area is the number of staff from different categories, the total number of staff is 45.

3.4.1 Sample Size

In this case twenty years data series from 2000 to 2020 of revenue collection and tourist visited Rubondo National park were consulted. The data were based on numbers of visitors visit the park for twenty year in different cross section. The citizen, foreigner and pooled data of foreigner and citizen tourists were involved during data analysis. In order to fulfill the purpose of this research, primary data were collected through survey questionnaires that were self- administered to the respond randomly selected respondents who are staff within the Rubondo National park.

The sample size for this study was 40 respondents. Since the sample were selected randomly where every staff in the study area had equal chance to be selected. To select the sample population from 45 staff the Yamane formula were adopted. Sample size was calculated according to Yamane, 1967, from the population size at 95% confidence interval

$$n = \frac{N}{1 + N(e)^2} \quad \text{.....(12)}$$

Where N is population size which equal to 45 staff

e = level of precision which was equal to 5%

n = sample size which will be calculated and gave 40 staff

Therefore 40 questionnaires were administered

Table 3.1: Sample Distribution N=40

Type of respondent	**Number of respondent expected**	**Returned (%)**	**Sampling techniques**
Assistant Commissioner of conversation	1	100.0	purposeful sampling
Head of Account	1	100.0	purposeful sampling
Head of HR	1	100.0	purposeful sampling
Head of Tourism	1	100.0	purposeful sampling
Other Staff	36	100.0	Random sampling
Total	40	100.0	

Source: Researcher Data, (2021).

3.5 Sources of Data

Secondary data is the type of data which has already published/ documented by other publisher. In this study secondary data source of twenty years from 2000 to 2020 were obtained and adopted, the data obtained related to foreigners and citizen tourists visited the park and revenue collected from relevant institutions like Bank of Tanzania, Ministry of Planning and Finance, Rubondo national parks, respective tourist Office for instance TANAPA, National Bureau of Statistics of Tanzania (NBS) and different published documents.

3.6 Type of Data and Data Collection Procedures

This study relied on annual time series data generated from secondary data. Data on tax collection were obtained from TANAPA and National Bureau of Statistics of Tanzania (NBS), data on GDP (GD), Tax collection (TAC), and employment creation (EC) were sourced. Data related to number of visitors, revenue collection and number of foreigners were employed in order to find the contribution and trends of Rubondo national park.

3.7 Data Analysis

In this study, the data have been analyzed through the use of Statistical Package for the Social Sciences (SPSS, 2020 version). Descriptive and analytical methods (frequencies and percentages) were used as well as inferential statistics in checking the variation of tourist growth in a given various factors in different years. Analysis of variance (ANOVA) was used to analyze the differences associated procedures, correlation were employed to test the hypotheses of the study.

There are about three techniques for estimating the parameters of the econometric models suggested in econometric literature. These methods are the Ordinary Least Squares (OLS), the Maximum Likelihood Method (ML) and the Method of Moments (MM). However, the OLS has had prominence and be more for time series data, moreover, the technique is more user friendly. For similar reasons, the method of estimation used in this study is the Ordinary Least Square technique. The study employed econometric time series data to achieve stated specific objectives for instance to determine the revenue contribution of Rubondo Nation Park to the tourism industry, to examine the trends of contribution of Rubondo National park and to determine the relationship between tourism growth and revenue collection in Rubondo National park.

Also the study employed a regression method to answer objective three, the regression model specified as:-

$Y = \beta_0 X_0 + \beta_1 X_1 + \beta_2 X_2 + e$ …….(13)

Y= Total National Output (GDP)

X_0= Constant

X_1= The employment creation (*Hunting, Hotels, Animals, Horticultural, Business around National park*)

X_2= Tax revenue collection from tourist (*Tour guides, Petty business, Hunting Companies, Foreign Exchange*)

e= Error term

3.8 Estimation Diagnostic Tests

These were some of the estimation diagnostic tests which have been performed;

3.8.1 Normality test

To be clearly measured the normality; the study measured the asymmetry of the distribution through skewness which is the third central movement of the distribution.

$$\alpha_3 = \mathrm{E}\left(\frac{\mathrm{x}-\mathrm{u}}{\sigma}\right)^3 \quad \text{.....(14)}$$

The sample skewness is evaluated as follows:

$$\hat{\alpha}_3 = \frac{1}{n}\sum_{i=1}^{n}\left(\frac{x_i - \bar{x}}{\hat{\sigma}}\right)^3 \quad \text{.....(15)}$$

Where:

$$\hat{\sigma} = \frac{1}{n}\sum_{i=1}^{n}\left(x_i - \bar{x}\right)^2 \quad \text{.....(16)}$$

The skewness $\propto_3$ is 0 for a symmetric population. Therefore, if the sample skewness is significantly different from zero; we can infer that the population distribution is unlikely to be symmetric, hence not normal. Another number that can be used to check the normality of the distribution is the fourth central movement of the

distribution, called the Kurtosis$\propto_4$, which is given as:

$$\alpha_4 = E\left(\frac{x-\mu}{\sigma}\right)^4 \quad \text{.....(17)}$$

The sample Kurtosis is computed as:

$$\hat{\alpha}_4 = \frac{1}{n}\sum_{i=1}^{n}\left(\frac{x_i - \bar{x}}{\hat{\sigma}}\right)^4 \quad \text{.....(18)}$$

The Kurtosis measures the amount of the total probabilities of the distribution and equals 3 for a normal population distribution. Therefore, if the sample Kurtosis is $\hat{\alpha}_4$ there is significantly different from 3, then we can infer that the population distribution is unlikely to be normal.

3.8.2 Hetroscedasitcity

This assumption of linear regression is that the residuals have constant variance at every level of x. This is known as homoscedasticity. When this is not the case, the residuals are said to suffer from heteroscedasticity. When heteroscedasticity is present in a regression analysis, the results of the analysis become hard to trust as it increases the variance of the regression coefficient estimates; this makes it much more likely for a regression model to declare that a term in the model is statistically significant, when in fact it is not. The simplest way to detect heteroscedasticity is by creating a fitted value vs. residual plot. Once you fit a regression line to a set of data, you can then create a scatter plot that shows the fitted values of the model vs. the residuals of those fitted values.

3.8.3 Multicollinearity

Multicollinearity refers to the situation in which independent variables are highly correlated; resulting in a paradoxical effect, whereby the regression model fits the data well, but none of the independent variables has a significant impact in predicting the dependent variable (Gujarati, 2004). Here correlation between variables must be taken into consideration. Correlation is one of the statistical measures that identify the two or more variables that change together. Correlation measures the direction and magnitude or strength of the relationship between each pair of the variables.

In other words, correlation is a measure of correlation or association that tests whether a relationship exists between two variables. A positive correlation shows that these variables are moving in the same direction, increasing or decreasing together, while a negative correlation means that these variables are moving in an opposite direction, one is increasing and another is decreasing. For our case the relationship between economic growth in tourism sector were observed by different revenues obtained in different years selected.

3.8.4 Karl Pearson's Coefficient of Correlation

It is known as Pearson's correlation coefficient and denoted by R. Pearson's R is the statistical measure for the association among the quantitative data. The values of the Pearson's correlation coefficient are always between −1 and +1. A value of R = +1 indicates that two variables are perfectly related in a positive linear sense. R = −1 means that the two variables are perfectly related in a negative linear sense, and a correlation coefficient of 0 indicates that there is no linear relationship between the

two variables. The direction of the relationship is indicated by the sign of R

$$R = \frac{Cov\,(X,Y)}{\sqrt{[Var\,(X)Var\,(Y)]}} \frac{= \sum(X-\bar{X})(Y-\bar{Y})}{\sqrt{\sum(X-\bar{X})^2}\sqrt{\sum(Y-\bar{Y})^2}} \quad \text{.....(19)}$$

3.8.5 Coefficient of Determination

Coefficient of determination (R^2) is the most suitable and clear way of understanding the value of correlation coefficient using the square of linear correlation coefficient.

3.8.6 Stationarity (Unit Root) Test

When dealing with time series data a number of econometric issues can influence the estimation of the parameters using the traditional Ordinary Least Squares (OLS) method. One of the major issues the econometricians have now paid attention of when dealing with time series data is non stationarity. Ordinary regression using the time series data assumes that, the given series are stationary. A series is said to be stationary if the mean, variance and auto covariance are time invariant. Broadly speaking, a stochastic process is said to be stationary if its mean and variance are constant overtime and the value of the covariance between the two time periods depends on the distance, gap or lag between the two time periods and not on the actual time at which covariance is computed (Gujarati, 2004). A nonstationary time series will have a time dependent mean variance and auto covariance.

Gujarati (2004) regressing a time series variable on another time series variable(s) one often obtains a very high R^2 (0.9) even though there is no meaningful relationship between the two variables. It results from regressing nonstationary time series variable another nonstationary time series variable(s).

Most of them change according to the economic condition of the economy, most of them expand when the economy is booming while others expand when the economy is in recession and vice versa. Some of the economic time series vary with technological capacity of the economy which actually varies with time. To avoid spurious regression, it is therefore important to check if the time series data to be analyzed are non stationary or not for if they contain unit root the regression will be spurious. Understanding whether the data are stationary or not will provide a clue to how to handle the data so as to reach the correct useful results of the analysis

The test for stationarity (Unit root) used in this study is the Augmented Dickey-Fuller (ADF) Test. The ADF consist of estimating the following equation,

$\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-}$

$$_1 + \sum_{i=0}^{m} \alpha i \Delta Yti + \varepsilon_t \quad \text{.....(20)}$$

Where t is trend, ε_t is a pure white noise error term and that $\Delta Y_t = (Y_{t-1} - Y_{t-2})$ and $\Delta Y_t = (Y_{t-2} - Y_{t-3})$ and so on is the number of lagged difference terms which is to be determined empirically usually using Akaike Information Criterion (AIC) or the Schwartz Information Criterion(SIC).

The idea in every case. being includes enough terms so that the error term in the regression is uncorrelated. The test for stationarity is conducted based on the coefficient of Y_{t-1}, (δ) in the regression above. If this coefficient it has significantly different from zero (less than zero), then the hypothesis that the variable Y contain unit root is rejected. The null and alternative hypotheses for the existence of unit root in Y are

H_O: δ=0, the variable is non stationary

H_1: δ<0, the variable is stationary.

The t-values from this regression do not follow a student t- distribution, but follows the MacKinnon distribution. They are in this case called tau (ι).

The standard classical methods of estimation which are used in the applied econometric works are based on a set of assumptions. An econometric analysis based on a time series data assumes that the underlying time series is stationary. A variable is said to be covariance stationary if the mean and the variances of the variable are constant over time and the covariance between two periods depends only on the gap between the periods, and not the actual time at which this covariance is considered.

A non-stationary series has a different mean at different points in time and its variance increases with the sample size. So, the first thing in econometric work is to check whether a series is stationary or not.

Using the classical estimation methods to estimate relationship with non-stationary variables results in spurious regression, this is a situation which results obtained suggest there are statistically significant relationships between the variables in the regression model. In fact all that is obtained is an evidence of contemporaneous correlations rather than meaningful causal relationship. In time series data, the assumption that error terms from successive observations are uncorrelated is frequently invalid.

The variables are non-stationary in the sense that the mean and variance depend on time and thus there are no tendencies for them to hold back to a given value. Hence,

the non-stationary (trend) in variables needs to be removed first before getting into any econometric work. If the trend in a variable is trend deterministic, then it is perfectly predictable and can either be removed by regressing the variable on time (with the residuals from such a regression forming a new variable which is trend-free and stationary) or can be captured by including a deterministic time trend as one of the repressors in the model.

If on the other hand the trend is not deterministic (stochastic) then it is not perfectly predictable. In such a case the variable needs to be differenced to nullify the trend and make it stationary. A variable is said to be integrated of order one denoted $I(1)$ if it must be differenced one time to make it stationary. A level stationary series is said to be integrated of order zero i.e. $I(0)$. In general, if the series need to be differenced d times before it becomes stationary, it is said to be integrated of order d denoted $I(d)$.

Assuming that μ_t is a white noise error term with mean 0 and variance σ^2 the random walk model can be specified as follows:

$$Y_t = \rho Y_{t-1} + \mu_t \quad \text{..... (21)}$$

If $\rho = 1$, equation (21) becomes a random walk without drift and this is a situation of unit root problem i.e., situation of stationary. The name unit is due to the fact that $\rho = 1$. If, however $|\rho| < 1$, that is the absolute value of ρ is less than one, then it can be shown that the time series Y_t is stationary.

The general idea behind the unit root test of stationary is that regressing Y_t on its lag (Y_{t-1}) and find out if estimated ρ is statistically equal to 1.

If Y_{t-1} is subtracted from both sides of equation (3.2.3), the result is as follows

$$Y_t - Y_{t-1} = \rho Y_{t-1} - Y_{t-1} + \mu_t \text{ ……..….. (22)}$$

$$= (\rho - 1) y_{t-1} + \mu_t$$

Equation (3.2.4) can be written as follows:

$$\Delta Y_t = \alpha Y_{t-1} + \mu_t \text{ …… (23)}$$

Where $\alpha = \rho - 1$, Δ is the first difference operator therefore (23) can be estimated and the null hypothesis of $\alpha = 0$ will be tested. If $\alpha = 0$, then $\rho = 1$, showing the existence of unit root, i.e., the time series is non stationary. If $\alpha = 0$, then equation 3.2.5 becomes

$$\Delta Y_t = Y_t - Y_{t-1} = \mu_t \text{ …….. (24)}$$

Since μ_t is white noise error term it is stationary, which means that the first differences of random walk time series are stationary.

Under the null hypothesis that $\alpha = 0$, the estimated t value of coefficient of Y_{t-1} in equation (6) follows the t(tau) statistic the tau statistic or test is known as the dickey fuller (DF) test. The DF test is estimated in three different forms, i.e., under the different null hypothesis.

i. Y_t is a random walk model without drift

$$\Delta Y_t = \alpha Y_{t-1} + \mu_t \text{ ……... (25)}$$

ii. Y_t is a random walk model with drift (drift here refers to the constant term)?

$$\Delta Y_t = \beta_n + \alpha Y_{t-1} + \mu_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (26)$$

iii. Y_t is a random walk with a drift around a stochastic trend

$$\Delta Y_t = \beta_1 + \beta_{2t} + \alpha Y_{t-1} + \mu_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (27)$$

Where *t* is the time or trend variable. In each case, the null hypothesis is that $\alpha = 0$, i.e is there is a unit root. The time series is non stationary. The alternative hypothesis is that α is less than zero, i.e. the time series is stationary.

In the dickey fuller test it is assumed that the error term µt is uncorrelated but in case the µt is correlated dickey and fuller have developed the augmented dickey-fuller (ADF) test. In the ADF test the equations used in the DF test are augmented by adding the lagged values of the dependent variables, ΔY_t thus, the ADF test consists of estimating the equation below

$$\Delta Y_t = \beta_1 + \beta_{2t} + \alpha Y_{t-1} + \alpha_i \sum \Delta Y_{t-i} + \xi_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots.. (28)$$

Where ξ_t is a pure white noise error term and $Y_{t-i} = (Y_{t-i} - Y_{t-2})$, $\Delta Y_{t-2} = (Y_{t-2} - Y_{t-3})$, etc in the ADF test the hypothesis to test is α is zero (i.e $\alpha = 0$)

The ADF test is comparable to the simple DF test but it involves adding unknown number of lagged first differences of the dependent variable to capture auto correlated omitted variables that would otherwise enter the error term μ_t.

To avoid the spurious regression problem that may arise from regressing a non-stationary time series, the non-stationary time series can be transformed to make stationary. The transformation method depends on whether the time series are difference stationary or trend stationary. If a time series has a unit root, the first difference of such time series are stationary. Thus, the solution here is to take the first difference of the time series. In trend stationary process the time series is regressed on time and the residuals from the regression will then be stationary.

3.8.7 Co integration Test

The co integration test is applied to detect the presence of any long-term relationship between the variables. The economic interpretation of co integration is that if two or more series are linked to form an equilibrium relationship spanning the long-run, then even though the series themselves may contain stochastic trends (i.e., non-stationary) they will nevertheless move closely together overtime and the difference between them will be stable (i.e., stationary) (Enders, 1995).

First differencing, however, does possess a major limitation in that it tends to ignore the long run properties of the data. Besides, economic theories are also generally formulated for levels of variables rather than for differences. If two time series Y_t and X_t are both integrated of order d (i.e. $I(d)$), then, in general, any linear combination of the two series will also be $I(d)$; that is, the residuals obtained on regressing Y_t on X_t are $I(d)$. If, however, there exists a vector *b*, such that the disturbance term from the regression $(e_t = Y_t - bX_t)$ is of a lower order of integration $I(d-b)$, where $b > 0$, then Engle and Granger (1987) define Y_t and X_t

as co integrated of order (d, b).

There are different co integrating tests used to examine the existence of long run equilibrium relations between variables. The well-known tests are the maximum likelihood, Eiggen value, and trace statistics (Harris, 1985). Co integration has received a formal treatment by Engle and Granger (1987). Accordingly, if two time series variables, Y_t and X_t are $I(1)$, then $Y_t - \beta X_t$ is an $I(1)$ process for any number of β (Greene, 2003). For some $\beta \neq 0$, $Y_t - \beta X_t$ is an $I(0)$ process then Y and X are co integrated and β is called the co integrated parameter.

The co integration equation can be expressed as follows

$$\ln RGDP = \beta_0 + \beta_1 \ln TAC + \beta_2 \ln EC + \varepsilon_t \ldots\ldots (29)$$

If the residual ε_t, which are subjected to unit root analysis are found to be $I(0)$, then the variables are said to be co integrated and the above equation indicates a long run relationship among the variables under consideration. Time series econometrics also requires an examination of the short run relation and this is captured by Error correction test.

3.8.8 Error Correction Model

Transforming the time series to stationary by differencing could remove the estimation bias. Still, this has significant implication since it tends to forgo information on the long run properties of the variables. Besides, economic theories are also generally formulated for levels of variables rather than for differences. One approach to dealing with this problem is to employ a method that combines long run

information with a short run adjustment mechanism.

The short run behavior of equation 30 can be captured by the error term e_t which is treated as the "equilibrium error term", this error term can be used to tie the short run behavior of dependent variable to its long run value. This error correction mechanism (ECM) corrects for disequilibrium and the relationship between the co integrating variables can be expressed as ECM as follows:

$$\Delta \ln RGDP = \beta_0 + \beta_1 \Delta \ln TAC_t + \beta_2 \Delta \ln EC \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (30)$$

Where Δ denotes the first difference operator and ECM_{t-1} is the lagged term. All the other variables are as defined before.

The Error correction representation of equation (30) shows the short run and long run dynamics. The long run dynamic is contained in the error correction term. The coefficient of the error correction term is priory expected to be negative. And the magnitude of this coefficient shows the speed of adjustment towards the long run equilibrium.

3.8.9 Granger Causality

The test for Granger causality works by first doing a regression of ΔY on lagged values of ΔY. (Here ΔY is the first difference of the variable Y - that is, Y minus its one-period-prior value. The regressions are performed in terms of ΔY rather than Y if Y is not stationary but ΔY is.) Once the set of significant lagged values for ΔY is found (via t-statistics or p-values), the regression is augmented with lagged levels of ΔX. Any particular lagged value of ΔX is retained in the regression if (1) it is significant according to a t-test, and (2) it and the other lagged values of ΔX jointly

add explanatory power to the model according to an F-test. Then the null hypothesis of no Granger causality is accepted if and only if no lagged values of ΔX has been retained in the regression.

Let y and x be stationary time series. To test the null hypothesis that x does not Granger-cause y, one first finds the proper lagged values of y to include in a univariate auto regression of y :

$$Y_t = \alpha_0 + + a_1 y_{t-1} + a_2 y_{t-2} + a_m y_{t-m} + \varepsilon_t \quad \text{..... (31)}$$

Here y_{t-j} is retained in the regression if and only if it has a significant t-statistic; m is the greatest lag length for which the lagged dependent variable is significant.

Next, the auto regression is augmented by including lagged values of x:

$$Y_t = \alpha_0 + + a_1 y_{t-1} + a_2 y_{t-2} + a_m y_{t-m} + b_p x_{t-p} + ...b_q x_{t-q} + \varepsilon_t \quad \text{.....(32)}$$

One retains in this regression all lagged values of x that are individually significant according to their t-statistics, provided that collectively they add explanatory power to the regression according to an F-test (whose null hypothesis is no explanatory power jointly added by the x's). In the notation of the above augmented regression, p is the shortest, and q is the longest, lag length for which the lagged value of x is significant. The null hypothesis that x does not Granger-cause y is accepted if and only if no lagged values of x are retained in the regression.

3.9 Reliability and Validity of Instruments

3.9.1 Data Validity

Kothari (2004) validity refers to the extent to which a test measures what actually need to be measured. On the other hand, Kothari continues to argue that validity is the extent to which differences found with a measuring instrument reflect true differences among those being tested. In this study, the instruments which were used for data collection covered the chosen sample of the relevant population and provide data which were expected. Moreover, the study ensured validity through proper testing of objectives and the methodology respond to objectives by collecting reliable and accurate data.

3.9.2 Reliability Testing

Reliability used to provide assurance, accuracy and precision of measurement procedure, (Kothari, 2004) explains that a measuring tool is reliable if it provides consistent results. To assure reliability of these tools, published data from reputable sources were used to obtain relevance information. Also, reliability was assured by using proper methodology, analysis tools and proper procedure. This section provides details on the reliability analysis of the scales, such as employment creation and Tax collection.

To establish the reliability of the study variables, Cronbach‘s Alpha Internal Consistency Method was used. Cronbach‘s Alpha measures how well a set of items (or variables) measures a single uni-dimentional latent construct and a statistic equal to or greater than 0.7 is said to be good (Hukpati, 2005). Accordingly, the corresponding reliability statistics for employment creation and

was 0.734 and Tax collection was 0.814. This shows a high reliability of the variables (or items) of measurement for these attributes. In other words, the questionnaire items are well understood by the respondents.

Table 3.2: Reliability of Scales

Variable	**Cronbach's**	Number of Items	Number of Valid cases
Employment Creation	0.734	5	32
Tax collection	0.814	16	37

Source: Researcher, 2021

CHAPTER FOUR

RESULTS AND FINDING DISCUSSION

4.1 Introduction

This chapter presents the results of the study by revealing the output of the analysis that has been explained by using regression model analysis as explained in methodology chapter. The results are clarified based on three objectives (to assess the revenue contribution of Rubondo Island national park tourism to economic growth of Tanzania, to examine contribution of foreigners and citizen visitors to revenue of Rubondo Island National park and to determine the relationship between tourism growth and revenue collection in Rubondo Island National park).

Therefore, this chapter explains procedures which were followed in order to get results and shows major findings of the study. These findings are basically related to the main objective of the study which is to assess the impact of tourism sector to economic growth of Tanzania. Descriptive statistical analysis was used to present cross tabulation results demonstrating the revenue foreigners and citizen visitors and to determine the relationship between tourism growth and revenue collection.

In the study econometric techniques to test and estimate contribution of each tourism economic variables affecting economic growth was employed. Tests which are shown in this chapter are Model regression analysis, Multicollinearity, Heteroscedasticity, Link-test for Model specification error for the entire variables in the study and robust command based on White's test with the purpose of obtaining more consistent parameters due to the presence of severe heteroscedasticity problem.

4.2 Descriptive Statistical Analysis

The descriptive analyses were conducted with the help of the statistical software package SPSS and the results are displayed in Table 4.1. The demographic characteristics of respondent statistical tests were done to obtain the percentage frequency (%), which assumes that there was all necessary information of respondent used during gathering information. The data set was constructed based to personal characteristics on the economic growth of Tanzania as dependent variable.

The descriptive analyses were conducted with the help of the statistical software package SPSS and the results are displayed Table 4.1. The statistical tests were done using the demographic information of the assistant commissioner of conversation, head of account, head of human resource, head of tourism and other staff which describe the personal information. Based on evidence from the descriptive analysis of socioeconomic characteristics of respondents in the study area in Table 4.1 shows that 70.0% of the sampled from tourism sector were females and 30.0% were males.

The results show that more women are employed and involved in tourism sector of Rubondo Island national park in Geita region than men. This is consistent with the results of Keyser (2007) who revealed that Female's labor participation in national park hotels areas is higher compared to their participation in section in national park, and is also slightly higher than male's participation. This is also the case in Rubondo Island national park, where women's participation is higher than men's. However It also shows that both men and women can take tourism sector as a business and a source of employment.

Table 4.1 shows that the results of the study mostly Rubondo Island national park employees are ageing since a greater percentage of the interviewed (62.5%) were 46 – 60 year, this above forty (40) years. Very few employees of Rubondo Island national park are (20.0%) were aged between 36-45 years and (17.5%) of the respondents were 18 – 35 years. employees in this age group constitute the very experience and are likely to work effectively to increase revenue through tourism sector. 17.5% of youth involved in tourism sector as employees, this could indicate that the future of the tourism industry, especially in Rubondo Island national park in Geita region have high economic growth. The youth are the future growers of the tourism sector and if tourism in Rubondo Island national park can be sustained supply, there is the need for youth to be encouraged to go into tourism training.

From the study Table 4.1, it was realized that a higher percentage of respondent in Rubondo Island national park (52.5%) are secondary school. About 15.0% of employees ended in the primary school while 32% of them were educated up university or high institutional level. The higher percentage of secondary education of employees could have positive impact on the revenue collection of new technologies. Generally education is thought to create a favourable mental attitude for the acceptance of new practices especially of information-intensive and management-intensive practices (Waller, *et al*., 1998; Caswell, *et al*., 2001).

Education is thought to reduce the amount of complexity perceived in a technology thereby increasing a technology's adoption. The study Table 4.1 also revealed that 62.5% of employees in Rubondo Island national park have working experience service of 2 – 10 years. Most studies analyzing experience working

service of 10years in the context of different economic sector show its strong positive influence on supervision. Yaron, *et al.,* (1992) show that its influence can counter balance the negative effect of lack of years of formal education in the overall decision to some technologies.

Table 3.1: Socioeconomic Characteristics of Respondents

Characteristic	Frequency	Percentage (%)
Gender		
Female	28	70.0
Male	12	30.0
Total	**40**	**100**
Age		
18 - 35years	7	17.5
36-45 years	8	20.0
46 – 60 year	25	62.5
Total	**40**	**100**
Education		
Primary	6	15.0
Secondary	21	52.5
Degree	13	32.5
Total	**40**	**100**
Experience in Tourism sector		
< 1year	6	15.0
2 – 10years	25	62.5
>10years	9	22.5
Total	**40**	**100**

Source: Field data, (2021).

4.3 The Descriptive Statistics of Employment Creation and Tax Collection

The employment creation and Tax collection capacity of the park is the overall capacity of the park to serve as a tourist destination and income generation for GDP contribution. This study has used two variables with nine (9) items to

measure the economic growth (GDP). Table 4.2 exhibits an assessment of the means and standard deviations of employment creation and Tax collection. Accordingly, employment creation has a mean value of 3.4585 on the economic growth scale (GDP and a mean value of 3.9671.

Table 4.2: Descriptive Statistics Results in Employment Creation

	N	Minimum	Maximum	Mean	Std. Deviation
Employment	40	2.80	4.20	3.4585	.32734
Creation Tax	40	3.31	4.36	3.9671	.29061
Collection	40				

Source: Researchers' computations, (2021).

The primary data were collected using a five-point Likert Scale which ranges from 1 (strongly disagree) to 5 (strongly agree) and (not at all significant to very significant). The middle point of the scale was 3.0. Therefore, a mean value greater than 3.0 indicates high c employment creation or high revenue generating capacity of the park while a mean value below 3.0 shows low employment creation or revenue generating capacity of the park. Based on this, employment creation has a mean value of 3.4585 which is above the middle mark of 3.0. This shows the high employment creation status or revenue generating capacity of the park in terms of its general competence in its natural attractions, created resources and infrastructure and facilities.

The tax collection for economic growth in terms of its natural attractions and conditions for tax collection as rated by respondents shows a mean value of 3.9671 which is absolutely greater than the middle point of 3.0. This affirms that tax collection is highly competent for tourism revenue generation as evaluated by

its natural endowments. This indicates that tourist facilities and infrastructures, such as hotels and accommodations are meeting the standard to meet the demand of tourists.

Table 5.3: Variables Descriptive Statistics on Economic Growth

	N	Minimum	Maximum	Mean	Std. Deviation
Employment	40	2.80	4.20	3.4585	.32734
Creation Tax	40	3.31	4.36	3.9671	.29061
Collection	40				
Valid N (list wise)					

Source: Researcher Data, (2021).

4.3.1 Robust of the Model

Table 4.4 shows the strength of relationship between the dependent and independent variable in fitting the model. Coefficient of Multiple Determination (R^2) measures the percentage variation in the dependent variable explained by the independent variable in fitting multiple linear regressions. The results showed that, R^2 found to be 0.85 per cent which means that 85 per cent of variation in dependent variable is being explained by independent variable in fitting linear regression and the remaining variation (15%) is due to some other factors.

Moreover, adjusted R-squared (R^2) is a modified R-squared that has been adjusted for the number of predictors in the model. It used to compare model with additional input variables, a lower adjusted R2 indicates that the additional input variables are not adding value to the model and higher adjusted R-squared indicates that the additional input variables are adding value to the model. The study found adjusted

R^2 to be 0.82 per cent which is less than R^2 (0.85%) this imply that adding addition variable will not add value to the model.

Table 6.4: Model Fit Summary

				Change Statistics					
R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
0.92	0.85	0.82	4.96	0.85	28.19	3	15	0.00	2.61

Source; Research findings, (2021).

The value of F test observed to be higher (28.10) than table value (6.22) which indicates that the regression equation is highly significance at 1 per cent or p= 0.00. Gujarat (2004) contended that if F-ratio is equal or close to one reveals inexistence of variance between factors. Results shows the validity of the data in this study since F ratio is greater than 1 meaning there is an existence of true variance in the study. Furthermore, Durbin Watson (DW) statistic is a test used to detect autocorrelation in the residuals from regression model. The Durbin Watson statistic always assumes a value between 0 and 4. A value of DW = 2 indicates that there is no autocorrelation. This study found DW of 2.6 which indicates model used is free from autocorrelation.

Before running the analysis, testing of overall significance of the model must be tested. There are number of ways to validate the goodness of fit of the model, R^2. However, the researcher used the R^2 together with adjusted R^2 to test over all goodness-of-fit of the model. As a result, the study found that adjusted R^2 became 80%, which indicates the model is adequately described by the selected explanatory variables. Most of scholarliness agrees that, as the values of R^2 and adjusted R^2 close to one that tells us the model is significantly determined by the included explanatory

variables and the model is more significant.

Therefore, the model is correctly specified and the explanatory variables explained the dependent variable, y very strongly. It shows that there are no omitting significant causal variable or including correlated but causally extraneous ones. Similarly, the researcher found that values of R^2 = 85% of the dependent variable determined by the explanatory variables included in the model. Therefore, it can be concluded the model is specified properly and the OLS model estimated better to the true estimator of population parameters.

4.3.2 Revenue Contribution of Foreigners and Citizen Visitors of Rubondo Island National Park

Table 4.5, shows the model fit results for objective II concerning contribution of foreigners and citizen visitors to revenue of Rubondo Island National park. The results shows that the regression model used is significant at 1% (p=0.00) showing the model fitted well to explain the tourism in relation to number of visitors in Rubondo National Park. From Table 4.5 results show clearly that our model is statistically significant and the null hypothesis in our study is rejected by accepting the alternatives hypothesis that Tourism revenue is significantly affecting economic growth of Tanzania.

Table 7.5: ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	2.08	3	6.95	28.19	0.00
Residual	3.69	15	2.46		
Total	2.45	18			

Source: Researchers' computations, (2021).

Regression analysis was conducted for the revenue data of the past twenty year's contributed by the park to assess the contribution of foreigners and citizen tourist to Rubondo national park. The results found a positive correlation between the tourist activities and revenue contributed from both citizen and foreigner in Rubondo Tourist Park. Table 4.5 general results revealed positive coefficient value for all three variable, the finding entail that, positive coefficient imply that when number tourist (foreigners and citizen) increase revenue contributed by visitors will increase in Rubondo National Park, moreover, parameter which in error/residuals are or not important thus why R^2 (0.85) are larger than adjusted R^2 (0.82). Negative coefficient of constant value meaning that parameter is negatively related to dependent variable or the model includes all important variables.

Table 46 shows that variable specific showed that, coefficient of citizen tourist (0.784) contribute highest compared to other. This indicates that if citizen tourist increases by 1 per cent revenue collection would increase at 0.8 per cent. Foreigner's visitors observed to have coefficient of 0.054 which imply 1 per cent increase in foreigner's visitor's Rubondo National park will increases revenue collection by 0.05 per cent.

Significance value of citizen coefficient observed to significant at 1 per cent level (0.02) while other variable are insignificant at 1, 5 and 10 per cent. According the finding, Government of Tanzania, Tourism Board and other stakeholders i.e. TANAPA, should strong emphasize '***utalii wa ndani'*** in order to increase revenue collection in Rubondo National park.

Table 8.6: Coefficient summary

Model		Standardized Coefficients	t- test	Significance
	Constant		-0.496	0.627
	FOREIGNERS	0.054	0.522	0.609
	CITIZEN	0.784	2.614	0.020
	TOTVISITORS	0.136	0.448	0.661

Source: Researchers' computations, (2021).

4.3.3 Relationship between Tourism Growth and Revenue Collection in Rubondo Island National Park

Table 4.7 shows the general relationship (combination of foreigners and citizen visitors) results observe strong relationship between tourism growth and total revenue growth in Rubondo National park. The results revealed that when the total number of visitor increases by 10 per cent the revenue growth increase by 14 per cent. This result supported by 10 per cent level of significant, this result found to be in line with Khan, *et al*., (2020) in the study of economic and development that showed the casual relationship of tourism activities contributed to economic growth and contributed to the sector development and enabled a decrease in poverty in Pakistani.

Tourism market separation also observed to have positive impact toward increase total revenue in Rubondo National Park, Table 4.7 evidence reveled that different tourism market have different contribution in total revenue. The tourism sector it has positively relationship in contributing to the revenue of Rubondo Island national park and is significant contributing to the economic growth. The citizen tourist has higher contribution on revenues by 78 per cent in Rubondo tourism island national

park than foreigner's visitors who contributes by 5 per cent. Available services recreation attract tourist activities and enhance revenues by 82 percent while 18 percent can be obtained from other factors. The findings suggest a direct proportional of tourism growth and revenues over the years. Meaning positive change in tourism growth leads to increase in revenue in Rubondo national park as well as the national economy. This provides empirical evidence that increase in revenue through tourism growth leads to increase in national economy.

4.3.4 Contribution of Citizen and Foreigners to the Tourism Sector

The contribution of tourism in Rubondo park for the sector development among citizen and foreigners pose an interest result for this study in understanding its contribution to the area income generation. The reviews over the economic activities available tourism take a huge part on the area movement stimulation of services and product availability in the area, Table 4.7 shows the provide evidence. It shows foreigners have a negative coefficient variable while citizen positive. This implies a unit decrease in foreigners in Rubondo for tourism activities would lead to the decrease in revenue contribution by 10 per cent. This is supported by Malleo, (2018) revealing that the increase in foreigners in tourism sector provide foreign currency growth that influences the rise of other sources of income on area.

For the positive variable of citizen implies that the citizen contribute more of income in Rubondo national park than foreigner. In addition the positive variables indicate that a unit increase in citizen tours activities increases revenue by 92 percent. For the citizen participation in tourism over the area indicate the citizen have been sensitized over the importance of their belonging, and encourages improvement of local

activities engagement over the area.

Table 9.7: Coefficients

Model	Standardized Coefficients Beta	T	Sig.	Collinearity Statistics	
				Tolerance	VIF
(Constant)		1.129	0.277		
FOREIGNERS	-0.091	-0.777	0.449	0.735	1.360
CITIZEN	0.927	9.000	0.000	0.952	1.051
EXPATRIATES	0.013	0.112	0.912	0.742	1.348
REVENUE	0.458	0.312	0.654	0.881	1.354
				Mean	**1.2783**

Source: Research Finding (2021).

In general, the above analysis shows that revenue from various sources has general influence to tourist revenue contribution to national income. This shows a high revenue generating potential of the park. However, its competitiveness is more dependent on natural endowments than service giving facilities and supporting services. Hypothesis$_1$ = Tourism revenue has a effect in Tanzania economic growth has positive high revenue generating capacity.

Hypothesis one predicted that economic growth has revenue generating capacity. The Standardized Coefficients shows that revenue has a value of 0.4585 for its revenue generating potential. To test hypothesis one, one sample test has been made. The significance test result shows p-value greater than 0.01($p>0.01$). Therefore, based on this result hypothesis 1 that has predicted high revenue generating capacity of tourists is accepted. This implies that tourism has high revenue generating capacity. In addition, the park has high employment creation in perspective of destination with a mean value of 3.4585($p>0.01$). Also, the tax collection has high competitiveness in perspective of tourist facilities and support services with a mean value of 3.9671($p>0.01$).

Table 10.8: ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	977989416730862200000000.000	3	325996472243620700000000.00	28.036	.000
Residual	1744180889487866000000000.000	15	116278725965857720000000.00		
Total	1152407505679648800000000.000	18			

Source: Researchers' computations, (2021).

Table 4.8 shows that the regression model is significant to explain the contribution of citizen and foreigners revenue in tourism sector in Rubondo park areas. Since P-value (0.00) is less than significant level value of 0.05.

4.4 Correlations for Constructs

As depicted in Table 4.9 the correlation between the independent and dependent variables were not high. This indicates that, there were strong and positive correlations between the dependent variable; economic growth (EG) and all nine the indepePearson Correlation Sig. (2-tndent constructs (Hunting, Hotels, Animals, Horticultural, Business around National park, Tour guides, Petty business, Hunting Companies, Foreign Exchange).

As per Zikmund, (2003) the value of "r" ranges from +1.0 to -1.0, where a positive "r" value indicates a direct relationship and a negative 'r" value represents an inverse relationship between two variables. When "r=0" it implies that there is no relationship between the two variables. When "r=+1" it implies that there is a perfect direct relationship between the variables. When "r=-1" it implies that there is a perfect negative/inverse relationship between the variables. When "r" is in

between 0.10-0.29, it implies that variables have weak relationships and when "r" value is in between 0.3-0.49, it implies that the variables have moderate relationship. When "r" value becomes greater or equals to 0.5 it indicates the relationship is strong. Depending on this assumption, all basic constructs were included into the correlation analysis and a bivariate two tailed correlation analysis was done.

Table 11.9: Coefficients for Constructs

		HUNT	HOTE	ANIM	HORT	BUSI	TOUR	PET	HUCO	FOEX
HUNT	Pearson Correlation	1								
	Sig. (2-tailed)									
HOTE	Pearson Correlation	-.063	1							
	Sig. (2-tailed)	.453								
ANIM	Pearson Correlation	.050	.017	1						
	Sig. (2-tailed)	.548	.842							
HORT	Pearson Correlation	.070	.014	.063	1					
	Sig. (2-tailed)	.400	.863	.455						
BUSI	Pearson Correlation	-.083	.100	-.178	.052	1				
	Sig. (2-tailed)	.323	.233	.032	.533					
TOUR	Pearson Correlation	-.004	-.090	-.141	.178*	.131				
	Sig. (2-tailed)	.964	.280	.090	.033	.116	1			
PET	Pearson Correlation	-.213	.013	-.063	.044	.111	.224	1		
	Sig. (2-tailed)	.345	.521	.452	.383	.326	.125			
HUCO	Pearson Correlation	.033	-.118	.323	.222	-.061	.118	.152	1	
	Sig. (2-tailed)	.411	.324	.622	.231	.131	.362	.552		
FOEX	Pearson Correlation	.463	.088	.060	-.123	.143	-.044	.163	-.041	1
	Sig. (2-tailed)	.300	.064	.339	.550	.366	.622	.437	.453	

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Researchers' computations, (2021).

4.5 Estimation Diagnostic Tests Results

4.5.1 The Normality Test

The Data should be normal because the errors was normally distributed technically normality was necessary only or Hypothesis test to be valid, after predicting the

residual. Both tests showed that the residuals were normally meaning that the model was desirable or good model. The results revealed that the residuals are normally distributed for all the variables since all the values of p-value of Prob > chi2 are great than 5%.Meaning that the Null hypothesis was not rejected, Then H_o: not rejected as all probability was great than 5% critical value. Means the residuals are normally distributed. The results are illustrated in Table 4.10.

Table 12.10: Jarque Bera Tests Results

Jarque –Bera test			
Equation	chi^2	df	Prob > chi2
Foreigners	0.452	2	0.79776
Citizen	0.551	2	0.75903
Expatriates	1.198	2	0.54927
Job Creation	1.024	2	0.59918
Tax collection	0.775	2	0.67889
ALL	4.0	10	0.67686

Source: Researcher's set using STATA, (2021)

4.5.2 Multicollinearity Testing

Increases in multicollinearity causes the regression model estimates of the coefficient become unstable and standard errors of coefficients could get wildly inflated we had reduced the VIF to 4.8 which was less than 5, which was recommended. The study used the inverse of the correlation matrix in order to detect the state of collinearity within the independent variables. The diagonal elements of this matrix are called Variance Inflation Factors (VIF). The test is undertaken to measure the correlation of the regressors in the model, since the high correlation of the explanatory variables can lead to imprecise estimation of the regression and slight fluctuations in correlation may lead to large differences in regression coefficients. The Variance Inflation Factor (VIF) is 1/Tolerance, it is always greater than or equal to 1. There is no formal VIF value for determining

presence of multicollinearity. The values of VIF that exceed 10 are often regarded as indicating multicollinearity.

The VIF result indicated that there was no multicollinearity problem among the explanatory variables due to mean for VIF was 1.278 (Table 4.11). Because the value of VIF for each independent variable is less than 10, this shows that multicollinearity was not a problem. The primary concern is that as the degree of multi collinearity increases, the regression model estimates of the coefficients become unstable and the standard errors for the coefficients can get wildly inflated.

Table 13.11: Collinearity Statistics

Model		Collinearity Statistics	
		Tolerance	VIF
	(Constant)		
	FOREIGNERS	0.735	1.360
	CITIZEN	0.952	1.051
	EXPATRIATES	0.742	1.348
	REVENUE	0.881	1.354
	Mean	**0.827**	**1.278**

Source: Researchers' computations, (2021).

Revenue and tourism relationship determination regression model tested for multicollinearity problem to describe the linear relationship among the explanatory variables. The model result in ANOVA Table 4.11 was significant (P-value =0.00) is less than Alpha level (0.05) which is (0.00<0.05). The Variation Inflation factor (VIF) value ranges +1.36 and the tolerance value ranges between ±0.952. Also the model selected fits clearly since R equals to 0.92 meaning the independent value are explained by 92 per cent within the model, and any adjustment does not affect the model since adjusted R square is less than R square (82% < 85%) as shown in Table 4.13.

A positive correlation was detected in the model result, presence of negative and positive variables was detected moving on the same variable. This implies any decrease of citizen or foreigners in tourism sector leads to a decrease in revenue from tourism activities and vice versa is true.

Table 14.12: Model fit

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
				R Square Change	F Change	df1	df2	Sig. F Change	
0.92	0.85	0.82	34099666562.89	0.85	28.04	3	15	0.00	1.634

Source: Researcher Findings, (2021)

4.5.3 Autocorrelation test

Test for autocorrelation, it tests for autocorrelation in residuals, Table 4.13 shows that p-values 64.14% was great than 5% we do not reject the null hypotheses meaning that no existence of serial correlation in the model. The data do not suffer from autocorrelation thus the good model is as shown in Table 4.13.

Table 15.13: Autocorrelation Test

Breusch-Godfrey LM test for autocorretion			
Lags(p)	**C**	**d**	**Prob>chi2**
1	0.21	1	0.64
Ho:no serial			
Durbin-Watson = 1.634			

Source: Researcher's set using STATA, (2021).

The variables were tested for autocorrelation up to two lag but results showed that no existence of correlation in the data as shown in Table 4.13. The study performed an autocorrelation test in order to determine the availability of serial correlation within the variables. To test for first-order correlation, the study used the darwin-

watson (dw) d statistic, the d statistic is roughly: d = 2 – 2p, where p lies between +1 and -1. This statistic lies between 0 and 4, whereby between 0-2 counts for positive autocorrelation, between 2-4 counts for negative autocorrelation and 2 means no autocorrelation. From the results in table 4.15, the Durbin-Watson test statistics was 1.634 which is closer to 2, indicating there is no autocorrelation problem within the variables.

4.5.4 Johansen Test for Cointegration

The Johansen test of cointegration tests the null hypothesis that there is no vector of cointegration versus the alternative hypothesis that there are vectors of cointegration. However, the correct application of this test requires the determination of time series lags of the variables in order to avoid autocorrelation. With annually data it would be more appropriate to use two times lags. After proofs, the Johansen test was performed with two time lags. Johansen test for cointegration found that cointegration exists,meaning that time series have long run relationship and tend to move together. The results are illustrated in Table 4.14.

Table 16.14: Results of Johansen Cointegration Tests

Johansen tests for cointegration							
Rank	**Eigen value**	**Trace statistic**	**5% value Critical**	**Rank**	**Eigen value**	**Maximum statistic**	**5% value Critical**
0	.	169.4328	94.15	0	.	60.6854	39.37
1	0.93661	108.7474	68.52	1	0.93661	46.5191	33.46
2	0.87931	62.2283	47.21	2	0.87931	32.7194	27.07
3	0.77401	29.5089*	29.68	3	0.77401	19.2445	20.97
4	0.58303	10.2645	15.41	4	0.58303	10.2100	14.07
5	0.37129	0.0545	3.76	5	.37129	0.0545	3.76
6	0.00247			6	0.00247		

Source: Researchers' computations, (2021).

Table 4.14 showed the results of Johansen cointegration test in trace test and maximum Eigen value test. Trace test results show that null hypothesis of no cointegration was rejected, because the test value 169.4328 is bigger than the critical value 94.15 at 5% probability. Also, null hypotheses that there at most one vector of cointegration and at most two vectors of cointegration are both rejected. Trace test results show that null hypotheses that there are at most three vectors of cointegration was not rejected, because the trace test 29.5089 is smaller than the critical value 29.68, meaning that there are 3 vectors of cointegration between exchange rate and other variables included in the model. Maximum eigenvalue test does not reject the null hypotheses that there are at most 3 vectors of cointegration between variables, because test result 19.2445 is smaller than critical value 20.97.

Since both trace test and maximum eigenvalue test confirm the existence of at least three vector of cointegration, it was concluded that there was a long run relationship exists between the exchange rate and economic variables included in the model, namely inflation, expenditure, debt service, exports, imports and reserve the variables move together in long run.

4.5.5 Unit Root Test

Stationary of a time series is crucial for the application of various econometric techniques, if a time series is non-stationary, one can study its behaviour only for the time period under consideration. Each set of time series data will therefore be for a particular episode. As a consequence, it is not possible to generalize it to other time periods. Therefore, for the purpose of forecasting, such (non-stationary) time series

may be of little practical value (Gujarati, 2004). Non-stationary data implies that trend is not deterministic, hence forecast tend to be unreliable. Augmented Dickey-Fuller test was effectively used to test for stationary for each variable, simply because ADF test can be used with serial correlation and it can handle large complex set of time series models. (Epapha, 2017).

The results from table 4.10 determined that for all the variables for this study which include; economic growth (GDPRate), Employment creation, Tax collection, the test failed to reject the null hypothesis that there is unit root since the test statistics p-values are superior to 0.05, hence these variables were non-stationary at level I (0). However, by introducing the first difference to all the variables, the results in 4.11 show that the test rejected the null hypothesis that there is unit root, since the p-values were inferior to 0.05, meaning all the variables for this study were stationary on first difference I (1). The fact that these variables were not stationary in level but rather into level is indicative of possible long – run relationship between the variables; this necessitated the determination of the long-run correlation between these variables using a cointegration test.

In testing for the stationarity of the variables, so as to avoid any problem related to spurious regression and biasedness of the results because of the uncertainty, instability and stationarity problems of the time series data, the study used a unit root test through Augmented Dickey-Fuller test (ADF), the hypotheses for a unit root test were;

H_0: Time series data is stationary

H_1: Time series data is not stationary

Table 17.15: From Augmented Dickey Fuller Test here is the Summary of the Results

Variable	Mackinnon P value(zt)
GDP	0.1245
Employment Creation	0.9842
Tax Collection	0.4679

Source: Researchers' Computations, (2021).

The test in Table 4.15 determined that for gross domestic product, exchange rate, inflation rate, terms of trade and openness to trade there was a problem of unit root test p value(zt) are greater than the standard p value of 0.05. Hence, the data rejected the null hypothesis that the variables are stationary, meaning there was a need to introduce first difference before testing for the unit root problem.

4.6 Summary of the Hypotheses Tests

Table 4.16 shows that regression analysis was carried to analyze the relationship hypothesis of the tourism revenue has a negative effect in Tanzania economic growth and Foreigners and citizen revenue have no influence on economic growth of Tanzania. The findings indicate that there was significant only to the variable relationship between tourism revenue and economic growth [β= 0.312, p>0.05]. Therefore, the alternative hypothesis that there is positive relationship between tourism revenue and economic growth. Therefore, the hypothesis was accepted with positively relationship between tourism revenue was analyzed using Analysis of OLS.

Table 18.16: Coefficients Result of Tourism Employment and Tax Collection on GNP

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-0.003	1.303		-1.064	0.301
	Tourism Employment Creation	0.051	0.057	0.068	0.189	0.852
	Tax Collection	0.458	0.220	0.312	0.654	0.621
	a. Dependent Variable: GNP b. Predictors: (Constant), Tourism Employment Creation, Tax Collection					

Source: Researchers' computations, (2021).

According to Table 4.17 provides the summary of all the hypotheses and findings. It shows that, all two hypotheses are alternatively supported by the regression analysis of impact of tourism, Employment Creation and Tax Collection on economic growth in Tanzania. The impact of Tourism, Employment Creation and Tax Collection was supported by empirical data as alternative hypothesized (H_1). Each supported hypothesis is strongly significant to insignificant at $p > 0.05$.

Table 19.17: Summary of Results for Hypotheses Testing

Hypotheses Statement	Result	Decision	Hypothetical Relationship
H_1: Hypothesis (H_1): Tourism revenue has a positive effect in Tanzania economic growth	(ß = 0.068, p= 0.05)	**Supported**	Positive
H_2: Hypothesis (H_1): Foreigners and citizen revenue have influence on economic growth of Tanzania	(ß = 0.312, p= 0.05)	**Supported**	Positive

Source: Researchers' computations, (2021).

4.7 Finding Discussion

The study found a positive correlation among dependent variable and independent variable, implying the selected model fits well to explain the validity of the data analyzed, moreover, regression model was highly significant at 1 per cent. The result indicated that 82 per cent of revenue is contributed by tourism activities whereby citizen are the most contributing revenue in Rubondo Island Park than foreigners which accounted for 78 percent.

Also it was found that there are positive relation among citizen and foreigners in the income generation and economic growth. It was observed that both foreigners and citizen plays an important role in simulation of economic activities. Although there is a positive relation which was significant for the case of relation, but for the case of contribution levels it has been observed for foreigners. The negative coefficient value implies decrease in revenue when foreigners drop over the season which gives more credit to the citizen for contributing much on the tourism revenue than foreigners. This could be influenced by many factors in the island, i.e. one of the factors is the eruption of Covid-19 which deteriorated the movement of tours from different angles of the world. Also the other one is the history of the Rubondo national park which is proven to have threatening animals than any other park.

However, the result shows direct relationship of citizen and foreigners' in revenue contribution and stimulation of economic growth of Rubondo Island national park. The presence of tourism activities plays a huge contribution to the development activities and triggers the social quality services in the area such as hotels, health

services, availability of water and light among the available economic activities (fishing, agriculture) etc.

CHAPTER FIVE

CONCLUSION AND RECOMENDATION

5.1 Introduction

This study was carried out to assess the impact of tourism activities of Rubondo National Island Park to the growth of economy. The study reviewed the income from tourist revenue of different series of year (2001-2019) in Rubondo Island Park for foreigners and citizen over the area. Moreover, reviewed development of the park as well as tourism sector in general by examines its growth and performance. The time series data of 20 years revenue contribution from Rubondo were sampled to fulfill the requirement of the objectives. SPSS Version 20 was used to analyzing the data. The computed results were represented in graphs and table. This chapter presents the conclusion and recommendation as well as areas for other study.

5.2 Conclusion

This study employed a time series data analysis to present the contribution of tourism for economic growth in Tanzania using regression analysis. The analysis considered two potential things that lead to revenue collection on tourism sector in Rubondo that is foreigner and citizen. From the results citizen are highly depended on revenue contribution than foreigners in Rubondo Island Park. But all together has a positive contribution to the Tanzania economic growth since the availability of tourist leads to income generation, provision of employment for tourist operation, accommodation hotels and restaurant that boost individual economic activities. The positive correlation between citizen and foreigners and total tourist and revenues render a convincing indication to the policy makers that tourism sector enhance

economic growth. Thus the linkage between governments is very important in the Island peak.

The factors assessing the impact of tourism sector to economic growth of Tanzania specifically of Rubondo Island national park in Geita region are employment creation and tax collection. The employment creation were include hunting, hotels, animals, horticultural, business around national park variables affecting economic growth; as employment creation increase the national income and when tourism visitors rate decreases the employment creation rate decreases. The second, variable was tax collection where include tour guides, petty business, hunting companies, foreign exchange. When tourism revenue increases /decreases the national income rate tend to increases or decreases; even empirical results by Janine et al.(1997) in their study determinants of foreign exchange rate in South Africa revealed that increase in central bank reserve appreciates the exchange rate.. But this result consistent with the theory, that a country with higher tourism visitors is not attractive to an employment creation rate.

The Johansen test revealed cointegration of three vectors or at equation three, it showed that the long run relationship exists. The VCEM revealed that short run and long run causality exists in the model. Stationarity test by using Dickey–Fuller and Philip Perron the results revealed that all the variables were nonstationary at level but they became stationary when converted into first differences. Shapiro Wilk test shows that the data /residual was normal distributed. Lag selection criteria was employed and lag two was selected due many criteria was suggesting to choose lag two. The model doesn’t suffer from autocorrelation and Heteroscedasticity. The

multicollinearity was minimum 1.051 as required benchmark below 5, recommended one. The model was properly specified and has no omitted variables.

5.3 Policy Implications

Fiscal policy and monetary policy should be made with the consideration for their impact of tourism sector on economic growth. The government should intervene to make tourism investment rate stable whenever there are high dynamics in the tourists. Policy makers must take into consideration the tourism investment rate dynamics before making policies that affects the economic growth. The gap between policy formation and its implementation both in fiscal and in monetary policy is supposed to be reduced. Based on these evidences it is clear that in Tanzania fiscal and monetary policies plays an important role in tourism sector. It is recommended to harmonise fiscal policies with monetary policy first and then make efficient relationship of both these policies with tourism investment policy.

It is therefore recommended that policy makers should on targeting royal tour flam as a measure of stabilising the tourism sector, but should adopt complementary macroeconomic policies such as increasing domestic production of exports and previously imported inputs used in the tourism production process. Therefore, stable and competitive tourism attractions and sound macroeconomic fundamentals are required in order to improve international competitiveness and greater penetration of Tanzania tourism attract to international markets.

5.4 Recommendations

This study display that there is a positive significance of the tourism contribution to the revenue of the national economy. Though the observed result concentrated on

citizen and foreigners in revenue contribution there some challenging areas that leads to a decrease in foreigners which reduces the income among foreigners. Therefore, there suggest some challenging areas to provide conduce environment for foreigners and citizen.

The increase in revenues per year observed portrays that there is an increase in number of tourism activities. Trickledown effect of increase number of tourism leads to increase revenue of the country, as revenues increases, livelihood of the people also changes positive by provide a room for employment to the people thus growth in economy. Tourism in Rubondo is among the essential factors for economic growth contribution. But considering tourism as essential to economic growth it depend on how tourism development policy is linked with overall economic activities in the area and nation as all. For the case of Rubondo Island Park, the agents should try to set a clear linkage of tourism with other economic sector available.

5.4 Area for Further Studies

This study result presented some emerging gaps, which can establish a basis for further researches in tourism sector in Rubondo Island Park. In assessing the impact of tourism sector to economic growth of Tanzania specifically of Rubondo Island national park in Geita citizen seem to contribute more in revenue than foreigners. Thus the study suggests more investigation on what could influence foreigners in Rubondo Island. Also further studies should be carried out on challenging issues which hinder the inlflux of both citizen and foreigners tourist in the park.

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APPENDICES

APPENDIX A: Survey Questionnaire

"Impact of tourism sector to economic growth of Tanzania: a case study of Rubondo national park at Geita region**"**

Purpose: This questionnaire is prepared to collect data pertaining to impact of tourism sector to economic growth of Tanzania: a case study of Rubondo national park at Geita region. It will provide a major input for my Master's dissertation and it is purely conducted for academic purposes. Therefore, the respondent is kindly requested to provide his/her valid responses to the sets of questions included in the questionnaires. All your responses remain confidential.

We thank you in advance for your cooperation.

Date of interview _____

Part 1: Personal Information (Identifies)

1) Gender

   a) Male ☐ Female ☐

2) Education

   a) Primary School ☐ b) College ☐ c) University ☐

3) Experience in Tourism sector

   a) Less than 1 years ☐ b) 2 – 10 years ☐ d) above 10 years ☐

4) Age of respondent …….

Part 2: Independent Variable

i) How many tourists in 2019 (……)

ii) How many tourists 2020 (……)

iii) How much revenue collected in 2019 (……..…)?

iv) How much revenue collected in 2020 (……..…)?

v) How many employed temporary in 2019 (……)

vi) How many employed permanent in 2019 (……)

vii) How many employed temporary in 2020 (……)

viii) How many employed permanent in 2020 (……)

Part 3: Revenue contribution of Rubondo Island national park tourism to economic growth of Tanzania

Rate on a scale of 1 to 4, where 1 is very significant in revenue contribution of Rubondo Island national park tourism to economic growth of Tanzania, and 4 is not at all significant

Revenue Activities	**Very significant**	**Significant**	**Not Significant**	**Not At All Significant**
Hunting				
Hotels				
Animals				
Horticultural				
Business around National park				

Part 4: Employment Creation

Items/activities	**Strongly Agreed**	**Agreed**	**I don't Know**	**Disagreed**	**Strongly Disagreed**
Tour guides					
Petty business					
Hunting Companies					
Foreign Exchange					

APPENDIX B: Research Clearance Letter

THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF NATURAL RESOURCES AND TOURISM
RUBONDO ISLAND NATIONAL PARK

In reply please quote:

Ref. No: CAB.196/289/23 Date: 22.04.2021

ERICK Z. NYAMOHANGA
REG, No: PG201505017

REF: AUTHORISATION TO CONDUCT RESEARCH

Kindly refer to the letter head above

2. I am writing to inform you of the clearance of my office for you to conduct research in response to your request letter dated 22nd, April 2021. In that regard, permission for you to conduct the research project titled: The impact of tourism sector on economic growth in Tanzania: A case study of Rubondo Island National Park at Geita region is hereby granted. You are therefore allowed to collect data for your research from 22nd April 2021 to 22nd May 2021.

3. My office acknowledges that your research complied with protocol presented by the open university of Tanzania and authorizes the research project to proceed.

With kind rewards

.....
Fredrick M. Mofulu
CHIEF PARK WARDEN

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