

# **An Economic Analysis of the Effect of Volcano National Park Tourism Demand on Human Livelihood in Rwanda: A Case Study of Burera and Musanze Districts**

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**Abstract:** Tourism is considered as one of the biggest and most versatile industries in the world and its growth pace has caused many social, economic and environmental changes. Currently, Gorilla tourism is the most and primary focus for the development of the tourism industry in Rwanda. The objective of this study was to analyse of the effect of volcano national park tourism demand on human livelihood in Rwanda. The population of interest for this research study constituted population surrounding volcano national park in two said districts. A multistage sampling technique was employed involving purposive sampling of two districts namely Burera and Musanze. A systematic sampling was used to obtain a sample size of 182 respondents for the study area. A regression model was used to determine social economic factors influencing tourism demand in study area. A Tobit regression results indicated that four factors such as education level, household income, political stability, stable climate and species of animal visited had positive and statistically significant influence on volcano national parks tourism demand in study area at 1% level of probability. The findings of Tobit regression analysis also showed that the four factors namely employment opportunities, new jobs creation, and enhance business activities had positive and statistically significant impact with volcano national parks tourism demand in study area at 1% level. It has also been found that the most and high different challenges for Volcano National Park Development were lack of sufficient land for expansion, followed by insufficient human capital, pandemic diseases, limited funds, population pressure, and reduction of some species. According to the findings the Researcher recommended that the smallholder farmers should emphasized on agribusiness practices to promote quality and supply of locally produced agricultural products particularly vegetables and fruits to be able to tap potential of tourists market in Volcano National Park Region. Government, RDB should make a favour and promotion through affordable price to Rwandans who voluntary wish to visit.

**Keywords:** Economic Analysis, Volcano National Park, Tourism Demand, Livelihood

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## 1. Introduction

Tourism is the world's largest and one of the fastest growing industries [28]. Recently, the industry has become an important economic sector in developing countries including Rwanda [8, 28]. Human kind has always had the desire to travel, to visit exotic places and encounter different cultures. Instead of staying home and importing goods and services, tourists visit the exporting areas or countries and enjoy the experiences and activities on site. According to the [31], tourism has become, in recent years, the largest economic activity in the world.

Tourism as it is currently known is a phenomenon present in the society for at least two centuries ago when only individuals from the highest socio-economic classes were able to travel to different places other than their residence countries for leisure purposes. However, tourism gained its global character by the decade of 1950s with the development of the commercial trans-oceanic flights [24].

Tourism is considered as one of the biggest and most versatile industries in the world and its growth pace has caused many social, economic and environmental changes. Many countries have successfully exploited such approach in order to significantly improve their current conditions and overcome some of their economic problems such as low income per capita, unemployment and shortage of foreign exchange earnings [5].

Globally, tourism is one of the fastest growing segments of the world economy, representing close to 7% of total world trade including trade in merchandise. Tourism constitutes about 6 per cent of global goods and services exports, and about 30 per cent of global service exports alone. In 2007, there were over 900 million international tourist arrivals bringing receipts of \$856 billion [7]. Africa had a 5 per cent share of these arrivals at just over 44 million arrivals generating \$28 billion in receipts. The number of people visiting other countries has risen significantly in the last fifty years. The number is expected to hit the one billion mark in 2010 and 1.6 billion by 2020. Tourism generates between 3-5% of the World's Gross Domestic Product and employs 200 million people worldwide [7].

Considering the different attributes of tourism including, job creation, income generation and tax revenues for the different levels of government, impacts on regional/national economic activity, small and medium-sized enterprises, strong linkages to other sectors of the economy like agriculture, transport, communications, and to some extent manufacturing industry, brings benefits to local communities the sector is only now being considered seriously than the other sector [9]. The tourism industry has a growth rate that superior than that of most other goods and services. Tourism expansion is associated with accelerated economic growth, job creation and welfare, improved exports and public finances [14].

The tourism is linked to poverty reduction because of its contribution to the economic development of the destinations [11]. Several reasons are advanced to why tourism is an

effective tool for the economic growth. Tourists, as consumers arriving at the destination, provide local communities with the opportunities for producing and selling additional goods and services on exchange of cash [8]. This means tourism contribute to raise local production of additional goods and services such as agricultural products (i.e. fruits and vegetables) and the obvious outcomes from such activities are income and employment opportunities to the local communities [10].

In recognition of the importance of the tourism industry in Rwanda, Government developed and put in place strategies and policy for tourism for long run. The Government of Rwanda also rationalised the institutional structures necessary for the effective development and promotion of tourism products in Rwanda especially in study area [19]. Tourism also offers labour-intensive and small-scale opportunities compared to other non-agricultural activities [28]. The sector employs high proportion of women, semi-skilled labour, and values natural resources and culture, which may feature among the few assets belonging to the poor.

Due to its important contribution to the economic growth, tourism has experienced a steady expansion and diversification, and cities around the world are relying on tourism as an important source of revenue [13]. The sector of tourism to contribute significantly to poverty reduction and overall economic growth, strengthening its linkage to other sectors especially agriculture becomes important. Building linkages between tourism and agricultural sectors is crucial to maximize economic impacts in developing countries [21].

Tourism leads to the creation of attractions, restaurants, entertainment, and better services in a community. It has a positive impact on other industries too: agriculture, transport, and manufacture. With positive effects on the local community, standards of living in a local area can also rise. Consumer spending will also see an increase, as more people are attracted to a particular location [7].

Rwanda's tourism industry accounts for a significant portion of foreign revenue. Current estimates for tourism revenue in 2007 and 2008 make up almost as much as the entire export base - \$209 million in 2008 compared to \$262 million for official exports. This makes the industry very important for Rwanda's macroeconomic stability and prospects of economic growth [26]. Rwanda Tourism Policy will contribute to the attainment of Vision 2020 objectives and EDPRS targets, through job creation, strengthening professional competencies, local community participation in the development of the sector for their own benefit, improved use of information and communication technology, rational use of existing physical infrastructure and development of new infrastructure, strengthening public-private sector partnerships, and the diversification of sustainable tourism products [26].

Rwanda is among the famous tourist destination in Africa and the world at large. The fact that makes it a potential destination for tourists. Rwanda tourism sector lean on primate the beautiful relief, which is made up of Virunga

Mountains, should not also be underestimated. Rwanda has four national parks (Volcanoes, Nyungwe, Akagera, and Gishwati-Mukura) and natural assets, including six volcanoes, 23 lakes and numerous rivers, and rare species such as mountain gorillas. Tourism is the leading foreign exchange earner for the country. Tourism earnings were estimated at USD 438 million in 2017 compared to USD 390 million in 2016 and USD 368 million in 2015 [22].

The combination of quality control and international interest in Dian Fossey's highly publicized gorilla studies resulted in steadily increased visitation throughout the 1980s, peaking around 6,900 in 1989 [18]. By the mid-1980's, local attitudes toward and political support for conservation increased significantly as a direct result of this program [21]. Stimulated by the attraction of gorilla tourism, Rwanda received almost 22,000 visits to its three national parks in 1990, when military conflict brought tourism to a halt [4].

Volcanoes national park is a stop center for all Rwanda gorilla safaris sheltering the highest number of mountain gorillas in the Virunga Conservation area. Volcanoes National park is a home for golden monkeys, a variety of birds, reptiles, buffalos, amphibians, and insects among other creatures, which together make a complete Rwanda safari package. While in Akagera National park is a home for elephants, hippopotamus, buffalos, lions, crocodiles, Zebras, Giraffes, Hyena, Snakes, birds, and others creatures [26].

Currently, Gorilla tourism is the most and primary focus for the development of the tourism industry in Rwanda especially in volcanoes national park. As such, Gorilla tourism has the potential to bring in considerable funds to the national economy, with the associated multiplier effects on local and regional economies. Due to a number of advantages and economic growth opportunities, it offers tourism is viewed as an important sector especially in developing countries including Rwanda [27]. Tourism advantages include source of employment, potential linkage with other sectors, provides opportunities for off-farm diversification, generates demand for assets (e.g. natural resources and culture), creates initial demand for goods and services, delivers consumers to the product rather than the other way around, infrastructural development in remote places, and offers a relatively rapidly growing market [20].

Tourists visiting the Volcanoes National Park and the Musanze area generate around US\$ 1 million in income for poor workers and producers. In addition, the area receives large amounts of donations [25]. As much as possible, hotels source their supplies from the local market to contribute to the economy. This is, however, the case primarily for food products, whereas many other items need to be imported [26]. Estimates for 2009 indicate that the tourism industry directly employs 33,800 people, whereas the direct and indirect employment accounts for 74,300 jobs. This represents 4.0 percent of total employment, only slightly below the sub-Saharan African average of 4.6 percent, but well below the worldwide average of 7.6 percent as well as Kenya (7.1 percent), Tanzania (7.1 percent) and Uganda (6.6 percent) [30].

In a country like Rwanda, which is interested in both macroeconomic and inclusive growth, the use of GDP alone may not be a sufficient measure of wellbeing. With the massive globalisation of production led by multinational companies, especially in developing countries, the use of industrial net income may mask the details behind economy performance [22]. Tourism, as an economic, social, and environmental power as well as a political phenomenon, is affected by complex factors and is politically and economically interwoven. Therefore, it can attract both domestic and foreign tourists. This implies that other sectors of the economy will expand more than earlier through different activities in tourism such as hotels, lodges, restaurants, transport, handicrafts and communication [22].

Despite these significance gains from tourism sector, many Rwandans do not get to enjoy the benefits from tourism, both tangible like job creation, state and local tax revenue and less tangible like social structures, and quality of life [27]. However, it is unfortunate that Rwanda's tourism sector is facing the following challenges such as the full impact of the war, political instability, and recent poaching events on the different species of wild animals' population, climate change, hunting, limited funds, insufficient human capacity, and other natural calamities [4]. In addition to this, the tourism products on offer are often beyond the financial means of the majority of Rwanda. Therefore, domestic tourism is still low in Rwanda. This study focused on factors, benefits, impact and challenges to the development of Volcano National Park of Rwanda. However, the main objective of the study was to analyse the effect of volcano national park tourism demand on human livelihood in Rwanda. A case study of Burera and Musanze districts. The specific objectives for the study were:

- 1) To identify the social economic factors influencing Volcano National Park tourism demand.
- 2) To assess the social economic effects of volcano National Park tourism on livelihood of population in study area.
- 3) To determine the challenges of volcano National Park development in Rwanda.

## 2. Research Methodology

### 2.1. Description of the Study Area

The study was conducted in volcano national park located in Northern Province of Rwanda. Spanning on a 160 square kilometer (km<sup>2</sup>) area in the northern part of Rwanda, Volcanoes national park is part of the great Virunga volcano conservation region spanning to cover Virunga national park Congo and Mgahinga national park Uganda [16]. It was initially a small area around Karisimbi, Mikenno and Visoke volcanoes that was gazetted to protect the Mountain gorillas, which were facing the threat of extinction because of poaching. The study covered these one important tourism area indicated above. This area consist of several tourism attractions particularly the Mountain gorilla in Volcano National Park. The volcanoes themselves are also tourist attractions [17].

Burera and Musanze are among five districts of Northern Province. Burera district has a total area estimated at 664.5 km<sup>2</sup>. It is boarded by the Republic of Uganda in the North and East, by Gakenke and Rulindo districts in the South and by Musanze district in the West. Its average altitude is 2100 meters. The relief is characterized by steeply sloping hills connected either by valleys steep sided or by flooded marshes. Annual precipitations reach 1400 mm; the temperature varies between 9°C and 29°C, according to the places and the season. Brera's comparative advantage lies in bean production, as the volcanic climactic zone is favourable to beans production [32].

However, Musanze is located at 1.50 latitude and 29.63 longitude and it is situated at elevation 1849 meters above sea level. Musanze is Rwanda's most mountainous district, containing the largest part of the Volcanoes National Park, and its head office at Kinigi. It is also in this district that most of Rwanda's mountain gorillas are found, making it the most popular tourist destination in the country. The District has two distinct zones and consequently related types of soils; one being volcanic area with moderate slopes and volcanic ash soils with lava predominant stones, the average altitude is 1860 m [33].

The other part comprises steeply hills where erosion is active. Musanze District has a tropical climate of high altitude with an average temperature of 20°C and the rain that varies between 1400 mm and 1800 mm. The total area of the district is 530, 4 km<sup>2</sup>. In 2012, the total population was 368,563 and a gross density of 695 habitants per km<sup>2</sup>. It has an average annual growth rate of 1.8% where Males stand at 174,760 and Females at 193,803 [16].

## 2.2. Sampling Technique and Sample Size

The population of interest for this research study constituted population surrounding volcano national park in two said districts. The study adopted cross section research design to identify, assess and analyse social economic factors influencing National Parks tourism demand, economic impact of National Parks tourism on Human livelihood and the challenges of Ecosystems development in National Parks of Rwanda. A multistage sampling technique was employed involving purposive sampling of two districts namely Burera and Musanze. A purposive sampling of three sectors (Cyanika, Rugarama, and Gahunga) of Burera district and four sectors (Kinigi, Gataraga, Shyingiro, and Nyange) of Musanze district was done. A systematic sampling was used to obtain a sample size of 182 respondents for the study area. The sample size was scattered from seven sectors based on respondents have full requirements of households surrounding volcano national park, tourists, businesspersons in (hotels, lodges, restaurants, markets, and bars), farmers of different crops, service of transport (motorbike, cars, and cyclists) handcrafts people, local authorities, and tourist guides.

## 2.3. Data Analysis

Data processing and analysis were carried out using the Statistical Package for Social Science (SPSS) Version 20 computer software, STATA 13 version and regression model

was used to determine social economic factors influencing tourism- demand in two national parks. Descriptive statistics such as frequency and percentage were used to determine the demographic characteristic of respondents and third objective of the current study. While inferential statistics (multiple regression) was used to analyse specific objectives (first and second) of the study. The regression model is expressed as:

$$Y = a + b_1X_1 + b_2X_2 + \dots + b_{10}X_{10} + e \quad (1)$$

Where Y = Volcano national park tourism demand (1=yes, while 0=no)

X1 = Age (years)

X2 = Gender (male or female)

X3 = Family Size (number)

X4 = Educational level (years spent in school)

X5 = Occupation (1=yes, 0=no)

X6 = Household income (Rwf)

X7 = Culture of tourist (1=yes, 0=no)

X8 = Political stability (1=yes, 0=no)

X9 = Cost of entrance (Rwf)

X10 = Species of Animal Visited (numbers)

X11 = Stable climate (1=yes, 0=no)

Where:

a = Constant (intercept)

e = Error term

b<sub>1</sub>-b<sub>10</sub>= regression parameters estimated

## 3. Results and Discussions

### 3.1. Socio-Economic Characteristics of Surveyed Respondents

In this study, the majority (57.1%) of the respondents were male while 42.9% were female as indicted by results in table (1). This implies that male dominates in different activities related to tourism sector than female in study area while this sector is mostly taken as a huge source of money for household income. For example, male around (99%) in study area carries out some activities like riding and driving probably than female. The result of this study indicated that majority 42.3 % of respondents are between the ranges of 36-50 years followed by the respondents who are in range between 21-35 years with (39.6%). The last class is that of respondents of 66 years and above actually older with (7.7%). The result therefore revealed that the majority of the respondents in study area are young people who are more physically fit and high energetic for hardworking.

The majority of the respondents (53.3%) have household size of 4-7 members followed by the household size of 1-3 members with (28.65%) while the household size of 8 and above members have (18.1%). From this result, it has been found that the respondents' large family size is above the recommended average size of five (5) composed of parents and three children per family in Rwanda. This means that the family with larger members is reviewed as an important source of labor supply for different opportunities of activities offered by tourism sector. These results show that there is

significant number of people in a family that provide labour force, which in return generate household income.

The result in Table 1 indicated the majority of respondents survey (32.9%) attended primary school followed by respondents attended secondary schools with (25.8%). The university respondents comes at third class with (19.3%) while vocation training is presented by (11.6%). However, the respondents surveyed in area illiterate is currently represented by (10.4%). never attended even primary while 2.7% of the respondents have attended university studies. The result implies that the majority of respondents are educated which means that they know to read and write. This is a good indicator, which significantly facilitate all business and collaboration between tourists and population around the Volcano National Park.

This is because primary education is a good literacy level and hence it is expected that educated people have a good ability to process information related to tourism through languages and others knowledge and skills acquired from schools. For instance, farmers of different crops and handicrafts people in study are have a good and high local commodities trade than other areas due to high numbers of tourists from the for countries visiting the site with foreign money especially dollars and euros.

However, the dependency on local tourism spending is noted, with some community members indicating that 80% of their income is from tourism. In Musanze town, the dependency is greater because of the presence of more tourists. Altogether, people indicate that tourism plays an enormous role in the local economy and their livelihoods compared with other areas around.

**Table 1.** Descriptive Characteristics of Surveyed Respondents in study area (n=182).

	Frequency	Percentage
Gender		
Male	104	57.1
Female	78	42.9
Age		
21-35	72	39.6
36-50	77	42.3
51-65	19	10.4
66 and above	14	7.7
Family size		
1-3	52	28.6
4-7	97	53.3
8 and above	33	18.1
Education level		
Illiterate	19	10.4
Primary	60	32.9
Secondary school	47	25.8
Vocation training	21	11.6
University	35	19.3

### 3.2. Factors Influencing Volcano National Park Tourism Demand

Analysis of the factors influencing tourism demand was used in this study. A Tobit regression analysis was used test response variable on the predictor variables. Table 2 shows that eight independent variables such as education level, occupation, household income, customer care, culture,

political stability, species of animals visited, and stable climate were found to be positively influenced National Parks Tourism Demand in study area. This was mostly explained by the significance of  $\text{Prob} > F = 0.0000$  and Pseudo  $R^2 = 0.853$  implying that (85.3%) of independent variables explain the demand of National Parks Tourism.

Although local people especially young do depend on the tourism industry, they perceive that they could benefit more from the tourism industry. There are various economic opportunities for the people of Volcano National Park. The most important sectors are employment, agriculture, handicrafts, fruits, vegetables, and few aquaculture products. Local people are engaging in small jobs and in small-scale businesses, or are directly employed in the tourism industry. However, most of the jobs for local people are lower paying jobs, and without support from the government or the private sector to provide education or training courses to grow into higher paying jobs. Local businesses, shops and restaurants, depend on the out-of-pocket-expenses made by tourists when they leave their hotels and go round in the area.

The result of Tobit regression analysis in Table 2 indicates that four factors such as education level, household income, political stability, stable climate and species of animal visited had positive and statistically significant influence on volcano national parks tourism demand in study area. All of these five factors or variables are statistically significant at 1% level of probability. This is because educated farmers will be able to adopt innovations, new technologies, and communication system used by foreign people who come to visit the park. This for example implies 1% increase in the years respondents spend should increase volcano national park tourism demand by 0.3%. In addition, this implies that 1% increase in the household income of respondents should increase volcano national park tourism demand by 0.5%. It has been also found that, political stability, and animal species visited found in study are had a positive and significant influence on volcano national park tourism demand have found that government expenditures positively affect tourism and economic growth in the long-run. However, in this study, government expenditures do not have any statistically significant impact on the number of tourist arrivals [1].

This is because security of Rwanda especially is well managed and it taken as personal task from individual person to the security agencies. Hence, this increase the number of tourists and investors from all over the world. This implies that 1% increase in the political stability and animal species visited found should increase volcano national park tourism demand by 0.04% and 0.03% respectively. The findings of the study revealed that factors such as age, family size, and cost of entrance were negatively influenced the volcano national park tourism demand in study area. This is for example because when age of people increases, the desired of different things decrease significantly than young people and these young people cannot afford themselves the price when it shift upward.

Local communities indicated and claimed that volcano national park visit is highly dominated by foreign people from for example Europe and America due to high entrance or

unaffordable price. They said that a few number of Rwandans who should visit this park are only authorities delegated by government and few people have higher level of education with good salary. This implies that a one percent increase in price of entrance, the volcano national park tourism demand should be reduced by 0.02% particularly for Rwandans and young people who do not have sufficient resource and who many times dependent their lives to their old parents. Seeing and experiencing local life and culture has become a more important ingredient in many itineraries of tourists worldwide. The search for Rwanda cultures and seeing the challenging circumstances local people live in is an interesting and valuable experience for many tourists.

They many times answered that tourism is the culture of white people or rich people. Based on observations from field data analysis, the interaction with local people and young people is often enjoyed, photographed and shared with positive reviews online by tourists rather than old people. With regard to socio-economic perspectives, children are aware of the low payments in tourism and the struggles of tourism business to profit from tourism. They or their parents do not consider promotion and donations to schoolchildren and on the street as income. Communities indicated that not all schools in the tourism areas receive tourists on a regular basis, so all schoolchildren are somehow familiar with tourists visiting schools as well. Almost some interviewed schoolchildren are positive about these school visits, mostly because tourists donate something to their school or the children directly. In some cases, children also get sponsor- or scholarships from individual tourists after they have paid a visit to the school due to the friendship made during their visit. Generally, a number of earlier studies have examined determinants influencing the use and the number of visitors to different types of national parks in order to establish how to utilize the potential of national parks most efficiently [3, 6]. Among the aspects examined were subjective factors, such as visitor opinions, public government policies, and characteristics of particular national parks [34]. Push factors for tourism in national parks are chiefly 'recreation and knowledge seeking', 'appreciating wildlife' and 'feeling close to nature' [15].

**Table 2.** Tobit regression of the Factors Influencing Volcano National Park Tourism Demand.

Variable	Coefficient	Standard Error	p-value
Age	-0.015	0.081	0.062
Education level	0.290	0.050	0.000
Family size	-0.011	0.026	0.391
Occupation	0.038	0.043	0.018
Household income	0.517	0.018	0.000
Customer care	0.503	0.007	0.749
Culture of tourist	0.171	0.015	0.645
Political stability	0.040	0.702	0.004
Cost of entrance	-0.02	0.196	0.007
Species of animals visited	0.032	0.010	0.000
Stable climate	0.404	0.095	0.000
Constant	0.342	0.656	0.433
Number of observations= 182 Prob > F = 0.0000			
Log pseudo-likelihood = -36.55 Pseudo R <sup>2</sup> = 0.853			

### 3.3. Tobit Regression of Volcano National Park Tourism Demand Impact on Human Livelihood

A fair distribution of economic benefits is one of the key challenges all over the world, and especially local communities, families and indirectly young people. To make the tourism industry more beneficially for local people, recommendations in the fields of job opportunities is one of the main keys. Tourism businesses can increase local job opportunities through training, mentoring and especially hire community members particularly for women.

Community members participating in the group interviews about livelihoods, in all in seven sites, indicated that they have various jobs in tourism or jobs that are related or depending on tourism. While governments and investors were promising economic and job opportunities, local people remained cautious, driven by cultural and religious beliefs, about their involvement in tourism. When access to suitable and appropriate jobs and income was intensively created locally from the beginning, local people were starting to get appointed and being very happy of the response.

The result of Tobit regression analysis in Table 3 indicates that seven factors such as (employment opportunities, new jobs creation, income generation, new infrastructures construction, international friendship, enhance business activities, and environment sustainability) out of nine have been positively impacted by volcano National Park tourism demand in Burera and Musanze districts. With findings in table 3, the four factors namely employment opportunities, new jobs creation, and enhance business activities had positive and statistically significant impact with volcano national parks tourism demand in study area at 1% level. All of these five factors or variables are statistically significant at 1% level of probability.

The factors called international friendship, income generation, and environment sustainability have been impacted by volcano national parks tourism demand at 5% and 10% respectively. Community members participating in the group interviews about livelihoods, in all four sites, indicated that they have various jobs in tourism or jobs that are related or depending on tourism. This for example implies that 1% increase in the demand of volcano national parks tourism should increase the enhancement of business activities in study area by 1.1%. This is because the increase in volcano tourism demand facilitate investors to build for example hotels, lodges, restaurants/bars and others ones that provide or generate income. This also implies that 1% increase in demand of volcano tourism should affect human livelihood through new jobs creation by 0.13%. This is due to when demand of volcano tourism increase the people both young and old should for example cultivate different crops that will be used by tourists during their field visit. As a result, the increase in the GDP per capita of a country has a positive impact on the country's image, and in this regard, the tourism demand for the country increases in the long- run [24]. It is probable that foreign exchange reserves, as an indicator of the economic power and development of a country, affect the

tourism demand for that country in the long-run [12]. There are studies in the literature which conclude that the GDP per capita affects the number of tourist arrivals in the long-run. The same relationship is detected by [2, 36].

Due to different raw materials found in study area such bamboo, banana leaves, and animals people should intensively make different materials such clothes, bags, chairs and others made in Rwanda handicrafts materials that should be sold to the tourists or guests. The increase of volcano national park tourism demand also affected human livelihood through construction of new infrastructures like electricity, water, model villages, schools, feed roads, modern markets and public health centers. By this construction of these new infrastructures, there was a huge provision of jobs to different level of people both educated and non-educated. Communities indicated that, when tourism development started in the 1960-1970s, local people were not particularly interested in applying for jobs in the hotel and restaurant sectors, largely due to the incompatibility with the culture of the predominantly low level of education in domain of tourism.

Today, despite a growing interest of especially men, rural Rwandan especially those from Burera and Musanze near tourism developments are happiness about the job opportunities in tourism sector. According to the results of the study, the GDP per capita is found to be highly effective on the tourism demand for Tunisia. Similarly [35], pointing out that cross-country differences in exchange rates besides income could affect the tourism demand, examined the tourism demand for Turkey by the panel data approach using the data obtained from 26 countries having bilateral visa agreements with Turkey between 1984 -2011.

Local people from these rural tourism areas now say that they are often very proud in terms of capabilities and salary. Increase of volcano national park tourism demand also increased employment opportunities to those ones who guide the tourist especially young graduate in domain of tourism and other related. Impacts of tourism on employment and poverty reduction. Although tourism has been recognized as a major contributor to the country's GDP, levels of employment provision and welfare contribution to the local community need to be established. It is also important to understand how tourism contributes to other industries, including agriculture, other services sector (e.g. insurance), manufacturing.

Local people mentioned two main positive effects, which are also, in line with volcano national park demand. Firstly, they said that, people learn other languages when they interact with tourists. Tourists and people especially young do communicate in English, French, Swahili, Italian or another European language. This results in people getting to know some words in another language than Kinyarwanda or develop some proficiency in their language skills. Secondly, people get money or goods from tourists. These are often well accepted by local people and regularly people are approaching tourists just to make sure that they will be the first one to get something when tourists have something to hand out. International tourism, in particular, is one of the sectors contributing to the preservation of world peace with the

instrument of international socio-cultural communication and integrative impact, as well as contributing to the national economy by promoting foreign exchange inflow along with national income, mitigating balance-of-payments risks and providing employment. According to the United Nations World Tourism Organization [29].

Despite the positive effect, community members showed also negative effects from interacting with tourists. The majority of respondents of all backgrounds also raised the increasing level of nightlife and the associated different types of music, drinking and use of drugs as a concern. However, observations show that in all tourism areas bars are in operation, alcohol is widely available in both bars and nightclubs and a number of young both boys and girls are keen to offer drugs. This should sometimes be a source of sexual exploitation of children or unfair distribution of economic benefits.

Based on observations and the interview with tourism stakeholders, one would conclude that begging children is common in tourism areas. However, in interviews with community members, children and in the exit survey among tourists, begging children seem to be around zero of problem. In this survey study carried out in Volcano National park region, only three (3) respondents representing 1.6% indicated that begging or asking of children as being negative. Therefore, it seems that mainly tourism stakeholders are concerned. If children are begging, it looks more like a playful act in which they do not always take tourists serious and even joke around with them. In short, tourists do donate goods and money to children, which seem to come more from a culture of giving than a culture of begging as indicated by those three respondents. Generally, the increase in demand of volcano national park is the main source of income for people around the park and source of revenues for the whole country, which are used in country development and poverty alleviation as all.

**Table 3.** Tobit Regression Results of Volcano National Park Tourism Demand on Human Livelihood.

Variable	Coefficient	Standard Error	p-value
Employment opportunities	0.084	0.070	0.009
New jobs creation	0.134	0.361	0.001
Income generation	0.019	0.307	0.030
New infrastructures construction	0.014	0.098	0.000
Security control	-0.026	0.523	0.072
International friendship	0.870	0.604	0.040
Information access	-0.218	0.328	0.055
Enhance business activities	1.107	0.052	0.000
Environment sustainability	0.057	0.17	0.068
Constant	0.34	0.54	0.000
Number of observations = 182 Prob > F = 0.0000			
Log likelihood = -29.644 Pseudo R <sup>2</sup> = 0.783			

### 3.4. Challenges of Volcano National Park Development

Securing economic benefits from tourism appears to be one of the key challenges for local tourism workers and local people as can be learned from the findings from field study. The extent to which local people and tourism workers benefit from tourism impacts people's lives as they depend on the income from different scarce resources. The Challenges for



development of Volcano National Park are presented in figure 1. This figure indicates that the most different challenge for Volcano National Park Development were lack of sufficient land for expansion with (100%) followed by insufficient human capital (98.7%), pandemic diseases (89.4%), limited funds (87.2%), population pressure (69.6%), reduction of some species (63.8%). The findings showed that the lowest challenge in study area is hunting with (17.7%). This implies that hunting was reduced at this level due to the effort made in protecting environment especially national parks including this volcano nation park which is the house of few species of animals in the world particularly gorillas. This also due to the high control and management of hunters and others people from poaching in this good volcano park. To achieve this, the respondents said that there was a huge organized communication and collaboration among population around the park, RDB, local authorities and security agencies.

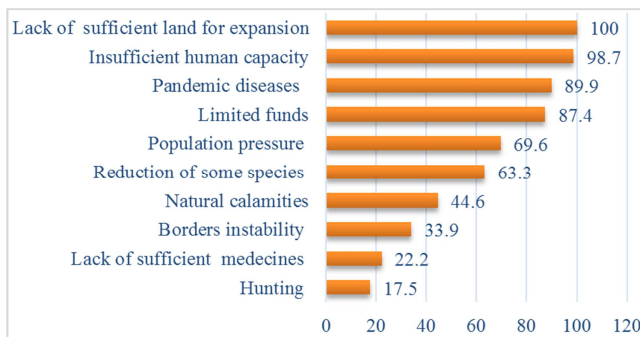


Figure 1. Challenges of Volcano National Park Development.

## 4. Conclusion and Recommendations

### 4.1. Conclusion

The population of interest for this research study constituted population surrounding volcano national park in two said districts. The study adopted cross section research design. A multistage sampling technique was employed involving purposive sampling of two districts namely Burera and Musanze. A systematic sampling was used to obtain a sample size of 182 respondents for the study area. A regression model was used to determine social economic factors influencing tourism demand in study area. The findings of the study showed that the majority of the respondents were male. The result therefore revealed that the majority of the respondents in study area are young people who are more physically fit and high energetic for hardworking.

A Tobit regression results indicated that four factors such as education level, household income, political stability, stable climate and species of animal visited had positive and statistically significant influence on volcano national parks tourism demand in study area at 1% level of probability. The findings of Tobit regression analysis also showed that the four factors namely employment opportunities, new jobs creation, and enhance business activities had positive and statistically significant impact with volcano national parks tourism

demand in study area at 1% level.

It has also been found that the most and high different challenges for Volcano National Park Development were lack of sufficient land for expansion, followed by insufficient human capital, pandemic diseases, limited funds, population pressure, and reduction of some species.

### 4.2. Recommendations

After the given conclusion, the following recommendations were made:

- 1) Tourism is in Volcano National Park to stay, and probably will keep growing fast, with more impacts for Rwandans especially for local communities, families and communities. Therefore, all tourism stakeholders in Volcano National park should collaborate to prevent negative impacts from tourism on local people like late of payment to farmers whose crops were damaged by some animals volcano park especially buffalos.
- 2) Support product development and diversification with linkages to other sectors, especially agriculture, fisheries and handcrafts which should improve backward linkages from the tourism industry to these sectors, but also improving local benefits of specific tours, like visiting farms, lakes, rivers in region (Ruhondo and Burera), fish and cash crops markets. Develop a made in Rwanda brand or label that supports local producers and is attractive for tourism businesses and tourists.
- 3) The smallholder farmers should emphasise on agribusiness practices to promote quality and supply of locally produced agricultural products particularly vegetables and fruits to be able to tap potential of tourists market in Volcano National Park Region. The agribusiness practices in farming will also inculcate entrepreneurial mindset among smallholder farmers essential to come up with innovative ideas, which will stimulate agricultural growth and ensure steady supply of vegetable and fruits in tourists hotels found in study area.
- 4) Fish seems to be also the most other source of good product if local lakes and rivers are well exploited. Because the finding of this study form some managers of hotels motels, restaurants and bars indicated that over 85% of the fishes used come from outside the country. Therefore, government and its agencies particularly RAB should enhance this sector as well as to increase production of fish from lakes and rivers found there.
- 5) As local communities indicated that volcano national park visit is highly dominated by foreign people from for example Europe and America due to high entrance or unfordable price. They said that a few number of Rwandans who should visit this park are only authorities delegated by government and few people have higher level of education with good salary. However, Government, RDB should make a favour and promotion through affordable price for Rwandans who voluntary wish to visit Volcano national park. This will increase the number of internal guests and develop a culture of



tourism for Rwanda for current and future generation.

- 6) To lower the gap between the tourism industry and local communities' people and in order to make sure that they can recognise themselves again in the tourism industry, tourism businesses need to be educated and supported in how to respect and present local values in their products and services. However, improving labour conditions and wages as well as improving backward economic linkages should also be worked on to distribute economic benefit more fairly.

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