

**ESTIMATION OF FOREIGN TOURISTS' WILLINGNESS TO PAY FOR  
CONSERVATION OF THREATENED SPECIES IN SERENGETI NATIONAL  
PARK, TANZANIA**

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE  
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## **ABSTRACT**

Willingness to pay studies are common studies that are done worldwide for various reasons. Normally before setting new prices the study of this kind is conducted so as to measure readiness and how much should be added without compromising service consumption. Therefore this study was conducted in Serengeti ecosystem with overall objective of estimating foreign tourists' willingness to pay (WTP) for conservation of threatened species. The study aimed specifically at, solving financial constraint to conservation of threatened species through; finding out the level of foreign tourists' WTP, determining factors that influence foreign tourists' WTP and assessing the influence of satisfaction level with animal species on WTP. A sample size of 145 respondents was purposively drawn to represent entire population. Primary and secondary data for this study were collected through semi-structured questionnaire, key informants interview and direct observation and then analyzed with descriptive statistics, multiple linear regression and content analysis. Findings indicated that 63% of the respondents showed a WTP additional amount for conservation of threatened species, out of which 52.6% were willing to pay up to 60 USD more. It also showed that parameters of respondents' age and education were found to be statistically significant at 0.01 level of significance, whereby respondents' average income per month were statistically significant at 0.05 level of significance. However findings revealed that there was an inverse relationship between WTP and respondents' age. This was perhaps due to the fact that older tourists have less income compared to younger ones, thereby leading to low level of WTP. Moreover findings showed that  $R^2 = 0.536$  implying that 53.6% of the variation in dependent variable willingness to pay, was explained by the variables included in the model. Satisfaction level with animal species also appeared to have influence on WTP by 89% of the respondents who ranked it as "highest" and "high". Therefore, the study recommended that an additional amount could be introduced as new entrance fee, proper implementation and facilitation of wildlife watching tourism, strategic marketing and educating the

community on conservation. Doing this would ensure the survival of threatened species hence sustainable tourism activities in Tanzania.

### **DECLARATION**

**I, Rugaimukamu Christian**, do hereby declare to the Senate of Sokoine University of Agriculture that this dissertation is my own original work and has never been submitted for a degree award in any other university.

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**(MSc. Candidate)**

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**Date**

The above declaration confirmed by;

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**(Supervisor)**

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**Date**

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### **DEDICATION**

This dissertation is dedicated to all alumni and continuing students pursued/pursuing bachelor of tourism management at Sokoine university of Agriculture. This is a motivation to them that they should aim higher at improving tourism industry in Tanzania, thereby raising national income. Their desires and goals in tourism industry should never be underestimated.

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### LIST OF ABBREVIATION AND SYMBOLS

<sup>0</sup> C	–	Centigrade
<sup>0</sup> F	–	Fahrenheit
Ft	–	Feet
GDP	–	Gross Domestic Product
GHG	–	Greenhouse Gas
IIED	–	International Institute of Environmental Development
IUCN	-	International Union for Conservation of Nature
SE	-	Serengeti Ecosystem
SNP	-	Serengeti National Park
STRC	–	State Training and Resource Centre
TTSS	–	Tanzania Tourism Sector Survey
TANAPA	–	Tanzania National Parks
TAWIRI	–	Tanzania Wildlife Research Institute
TTB	–	Tanzania Tourism Board
UNCITT	–	United Nations Conference on International Travels and Tourism
UNESCO	–	United Nations Educational, Scientific and Cultural Organizations
USD	–	United States Dollar
WTO	–	World Trade Organization
WTP	–	Willingness To Pay

## **CHAPTER ONE**

### **1.0 INTRODUCTION**

#### **1.1 Background Information**

Tourists are temporary visitors who spend more than 24 hours in destinations other than their normal place of residence. The motive for the journey may be for holiday making, recreation, health, study, religion, sport, visiting family or friends, business or meetings as explained by (UNCITT, 1963). Tourism is one of the world's fastest growing industries and its role in accelerating the economic development of a country is widely recognized (Gautam, 2008). Over the past decades, tourism has emerged as one of the world's largest industries. For example, in 1992, the number of world travelers was 476 million who spent over US \$ 279 billion. In recent years, tourism had become not only a luxury product available only to those who had time and money to spare but also available to practically everyone both in the developed and developing countries. Its significance in contributing to the economy of most developing countries is well understood. In Tanzania for example, the number of tourists is documented to increase from time to time as reported by World trade organization (WTO, 2011) with subsequent increase in earnings. In 1997 tourists number reached 285 000 and 795 000 in 2011 with earnings of \$343 000 000 and \$1 487 000 000 respectively according to Tanzania tourism board (TTB, 2014).

Following the sectors' potentiality, there is a great need to make sure that its economic benefits are sustainably utilized so as to improve the economy hence facilitating national development. Okello and Yerian (2009) indicated that tourism in Tanzania was expecting to contribute 12% of GDP of the national economy and it is among the fastest growing economy in the country. The role played by tourism in the nation cannot be underestimated and this is facilitated by the presence of many tourism attractions which are very essential for country's development as explained in Luvanga and Shitundu (2003). For instance there

are 16 national parks in total, including Mount Kilimanjaro the highest peak in Africa, Museums and the Zanzibar islands among others (TANAPA, 2012).

Wildlife watching tourism can make an important contribution to community development and conservation, especially in developing countries. Okello and Yerian (2009) found that tourism in East Africa is mainly based on wildlife watching safari and it accounts for over 80% of the tourists who come to Tanzania particularly in the northern circuit. But it needs to be carefully planned and managed in order to ensure its long-term sustainability and to avoid potential adverse effects on wildlife and local communities (Tapper, 2006).

Threatened animals such as Black Rhino (*Decerosbecornis*), Lion (*Pantheraleo*), Elephant (*Loxodonta Africana*), Wild dogs (*LycaonPictus*) and Cheetah (*Acinonyxjubatus*) contribute much to tourist satisfaction during their trip. Therefore there is a great need to ensure their survival so as to sustain to both its ecological and tourism importance. According to International Union for Conservation of Nature (IUCN) red list which is worldwide known for classifying rare species classifies African elephant, Lion, and Cheetah as Vulnerable species and Wild dog as endangered where Black rhino is classified as critically endangered, hence influencing the need to get a solution so as to ensure their survival.

## **1.2 Problem Statement and Justification**

Tourism in Tanzania is one of the major sectors contributing significantly to economic growth. It is reported to grow at annual rate of 5% and contributing 17% to GDP (Melita, 2013; Gardner, 2012). The tourism industry is also Tanzania's primary foreign exchange source. According to the world travel and tourism council, WTTC (2020), tourism accounts for 10.7% of Tanzanian GDP and supports 1.5 million jobs, or 11% of total employment, with 5.8% growth in 2019 compared with 6.1% in 2018 WTTC (2020).

Tanzanian tourism to a large extent is based on wildlife tourism which requires comprehensive programs for conservation and protection of the environment as it was found by Dwyer and Spurr (2010). However, tourist attractions (wildlife) are continuously diminishing due to several reasons including poaching of wild animals, deforestation, and encroachment in national parks Baldus *et al.* (2003). Despite several efforts being made by the government and other stakeholders towards conservation of wildlife and other natural resources in the national parks, these efforts seem to be not sustainable since they are underpinned among other factors, by insufficient funds being directed to conservation activities putting some species in a danger of perishing (Kidegesho, 2006).

According to (IUCN, 2011) African Elephant, Lion, Cheetah, wild dogs and Black rhino are classified as the animals which are in danger of perishing. These threatened species contribute a lot to tourists' satisfaction during their trip, so in their absence tourism in Tanzania is in dilemma. For instance Tanzania is losing 30 elephants daily to poaching which is threatening the country's economy and making the remaining elephants in danger of being wiped out (TAWIRI, 2012).

Some programs have been employed so as to deal with this challenge but have reported little or no success. Good examples of the programs for conservation include operation *uhai*, community based conservation programs and *tokomeza ujangili* as indicated by (Baldus *et al.* 2003 and Kidegesho, 2006) could not be sustained because of resource constraints. Current reported challenges like insufficiency of working facilities including helicopters, low number of staffs in relation to the areas being conserved, poor infrastructure like roads and other facilities to cater for the needs of tourists are the indicators of financial constraints to the sector (Kidegesho, 2006; TANAPA, 2012).

For the future sustainability of the industry, current conservation problems especially financial issues need to be addressed. This could only be possible among other source of funds, by generating enough funds from within the national parks through assessing tourists' willingness to pay for conservation of threatened species. This is because the fees and charges that tourists pay has been reported to be little in comparison to the value of the attractions they see (TANAPA, 2012). For example tourists pay US \$ 70 for high season and US \$ 60 for low season (Above 16 year old) and US \$ 20 for both seasons (between 5 and 16 years old) and only US \$ 40 as vehicle entrance fee TANAPA (2021, 2022). Therefore adding some amount to the fee paid can contribute a lot in protection of threatened species within the park by directing those funds to conservation activities such as alleviating poaching and educating the community around national parks on the importance of protecting threatened species to national economy.

However, conservation of threatened species is an immediate issue which needs to be solved so as to win their existence. Failure to find a quick solution will result to disappearance of these animals. Therefore, lack of enough funds for conservation activities indicates the progressive danger of losing these animal species within the park. Therefore the focus of this study is to estimate tourists' willingness to pay for conservation of threatened species in the Serengeti ecosystem.

### **1.3 Objectives**

#### **1.3.1 General objective**

To estimate foreign tourists' willingness to pay for conservation of threatened species in Serengeti ecosystem.

### **1.3.2 Specific objectives**

- i. To find out level of foreign tourists' willingness to pay for conservation of threatened species
- ii. To determine factors that influence foreign tourists' willingness to pay for threatened species
- iii. To assess the influence of satisfaction level with animal species on willingness to pay

### **1.4 Research Questions**

- i. How much are foreign tourists willing to pay for conservation of endangered species?
- ii. What are the factors that influence foreign tourists' willingness to pay?
- iii. How does satisfaction level with animal species influence willingness to pay?

## CHAPTER TWO

### 2.0 LITERATURE REVIEW

#### 2.1 General Overview on Tourism Industry

Recently tourism industry has been considered as the major source of income for the country and its residents. Most developing countries including Tanzania regard tourism as an agent of economic growth, basing on the expected economic benefits from tourism activities. According to (WTO, 2014) over 30 African countries have identified tourism as a national priority within the Enhanced Integrated Framework (EIF), this underlines that tourism is considered as a priority sector for many African countries and much hope is put into future tourism development as a vehicle for economic growth, job creation and poverty alleviation. For example In Malaysia, the tourism industry was the third largest industry generating foreign exchange in 1999 and from 2000 up to the present tourism was the second largest after manufacturing (Ahmad, 2009). In addition to that in Kenya, a large part of the national economy depends on wildlife-based tourism, and the country has developed national guidelines for ecotourism as indicated in Kaltenborn *et al.*, (2011).

Moreover, Tanzania captures about half of the total value of the global value chain for a package holiday sold in Europe (WTO, 2014). Also the tourism's contribution to the export sector of Tanzania is remarkably significant as its contribution increased from 5% in 1980 up to a staggering of 40% in 1995 and 1999 and from 1995 to 2008 its average contribution has remained at an average of 32 % (Kazuzuru, 2014). When its contribution is examined in relation to service exports, He added that tourism accounts for almost the entire sector, especially since 1995 and in that same year it accounted for 89% of all service exports, since then until 2007 its share has remained constant, at an average rate of 70%.

However, tourism can indirectly induce growth in the awareness of the public opinion on ecological issues, having a worldwide dimension, both at an international and a national level (Salvo, 2003). According to (Muir 1987; Sindiga 1995; Akama 1996) as cited in (Karren, 2004) wildlife tourism is a major component of the economy of non-metropolitan areas or towns. For example, the Scottish Seabird Centre is considered to have re-established the local town as a tourist destination, enhanced its image and generated a sense of local pride and ownership. Polar bear watching is the major economic activity for the town of Churchill in northern Manitoba, Canada. In parts of southern Africa, game viewing has been found to be much more valuable than farming of domestic livestock, and is the major source of income.

Statistics shows that, in 2011, tourism contributed 9% of global GDP or a value of over US\$6 trillion, and accounted for 255 million jobs (Saarien *et al.* 2013). Over the next ten years this industry is expected to grow by an average of 4% annually, taking it to 10% of global GDP, or some US\$10 trillion. By 2022, it is anticipated that it will account for 328 million jobs, or 1 in every 10 jobs on the planet (Ruggles-Brise and Aimable, 2012). According to WTO (2014) tourism has been increasing steadily with an average annual growth rate of international tourist arrivals of about 6.1% per year between 2005 and 2013. During the same period, arrivals have grown from 35 million in 2005 to reaching a new record of 56 million in 2013, the total international tourism receipts for Africa in 2013 reached US\$ 34.2 billion.

Likewise, world financial crisis have got direct negative effects on tourism industry, for example Tanzania Tourism Sector survey (2008) noted that due to the Global Financial Crisis (GFC), international tourist to Tanzania arrivals declined by 8 percent between January and April 2009, compared to the same period in the previous year, also all other

regions, with an exception of Africa, recorded declines in arrivals from January to April. The worst hit being Europe (10 percent) and the Middle East (18 percent), as African region recorded an increase of 3 percent.

Recognizing the value of tourism, Tanzanian government is undertaking several efforts to develop the tourism sector, for example as a way of mitigating the possible effects of GFC, in June 2009 the government of Tanzania came up with a stimulus package to bail out agriculture, tourism, mining exploration, manufacturing and gemstones trade. Moreover the government of Tanzania has started to recognize the importance of domestic tourism in its contribution to economic growth by making advertisements through media about participation in local affairs such as *Nanenane* and *Sabasaba*. Since 2006, the Tanzania Tourist Board has been stepping up promotions in new emerging markets of China, Japan, Singapore, India and Russia by participating in tourism affairs and conducting Road shows (TTSS, 2011).

### **2.1.1 Community Involvement into Tourism**

The socio-economic relationship of the tourism industry is very sensitive. This is due to the fact that tourism involves the community for its success, For example in California Whale watching contributes to local economies both in direct revenues (and the jobs these revenues support) and in the overall economic wellbeing of coastal users (Pendleton,). Serengeti National Park (SNP) itself being one of the most popular attractions in the eastern Africa and densely populated wildlife habitat, it is drawing the eyes of most researchers Emerton and Mfunda (1999). Tourism cannot be separated from the community as a result the wildlife authorities allows some human use in Game reserves such as hunting for meat so long as the permit is obtained from the relevant authorities. Kideghesho *et al.* (2011) noted that human population growth and poverty are the most important underlying forces that potentially

threaten the ecosystem, so its involvement is very essential for protection of endangered species and hence sustainable development.

Despite the economic importance of wildlife nationally, the local communities have barely derived benefits sufficient enough to offset the wildlife-induced costs. Moreover, local people pay for wildlife conservation through the wildlife-induced costs, but the benefits they receive are very minimal as they barely offset the direct wildlife-induced costs or compete with returns from alternative land uses which are ecologically destructive instead huge benefits of conservation are realized by other stakeholders who do not necessarily bear the costs.

Kideghesho *et al.* (2011) also noted that unlike rural communities, other stakeholders of the wildlife sector enjoy the benefits from wildlife regardless of the resources they invest and disadvantages they suffer, for example poachers, corrupt government officials, foreigners, investors and NGOs, state as well as local authorities. The rural communities may lose heart for conservation if what they get is relatively minimal compared to gains going to those incurring minimal costs and instead it will be an incentive for overexploitation of resources and conversion of habitats to alternative uses. (Kazuzuru, 2014) noted that failure of benefits from tourism to reach local population is contributed by the fact that tourism is dominated mostly by package tours whereby tourists pay their bills for the respective hotels in advance, via the travel agents and so they spend very little money in the communities they pass through.

This has greatly diminished incentive for local people to support conservation efforts. Local communities living around Selous Game Reserve indicated their willingness to support conservation efforts on condition that their interests and livelihoods are guaranteed

Gillingham and Lee (1999). Proper community involvement and implementation of sustainable policies will improve the economic return to the stake holders.

## **2.2 Tourism and Environment**

IUCN (1994) define environmentally sustainable tourism as a “form of tourism that supports the ecological balance” and tourism which is developed and maintained in an area (community, environment) in such a manner and ecotourism on such a scale that it remains viable over an indefinite period and does not degrade or alter the environment. Reducing the environmental impact of tourism is the key to ensuring it remains a major source of economic activity and the long-term success of many tourism destinations is critically dependent upon good planning and biodiversity conservation. Despite the fact that tourism may have a positive economic impact on the balance of payments, on employment, on gross income and production, but it may also have negative effects, particularly on the environment (Salvo, 2003). Although tourism development can produce some economic benefits, it can also negatively impact the natural environments and socio-cultural circumstances Radam *et al.* (2009). In Mauritius the exponentially increasing tourist arrivals has led to the construction of more hotels and an aggressive invasion of the coastline that would eventually and undoubtedly threaten the marine eco- systems and altogether fisheries biodiversity (Sobhee, 2008).

There are many examples from around the world where tourism has had significant negative impacts to wildlife, well known examples are Kenya’s Maasai Mara National Reserve (Serengeti’s neighbor), Amboseli, and Nairobi National Parks, where excessive numbers of tourists in vehicles have endangered the cheetah population, as well as Galapagos where the bird life is impacted by a number of factors in the aftermath of the wildlife tourism boom Kaltenborn *et al.* (2011). In addition to that tourism services within this sector such as

accommodation, food and beverage, tour operators and travel agents involve a wide range of activities that give rise to various environmental pressures and ultimately impacts.

On the other hand UNEP and CI (2003) reported that, globally for 2002 it was estimated that tourism was responsible for four to six percent of GHG emissions, and primary energy demand of 5 million MWh per year, whilst accounting for approximately 11 % of GDP. Moreover David *et al.* (2013) points out the poorly managed tourism development leading to negative impacts on biodiversity like infrastructure-related development, mainly financed and managed at the governmental level, including roads, railways, airports, trails, water sourcing and treatment facilities, energy production and distribution, and waste management; construction of tourism facilities, such as accommodation and meeting structures, urban development for employee housing, secondary real estate such as tourist homes as well as changes in management practices and changes in conservation-related investments.

As tourists become more sustainable consumers, the impact of tourism on the environment is limited, because consumers who are more receptive to environmental products choose to purchase them and they are willing to pay more for environmental benefits Kostakis *et al.* (2011). This indicates the importance of integrating sustainable development into tourism activities and ensuring that tourists are aware about sustainable tourism development.

The environment, being a major source of tourist product, should carefully be protected in order to have further growth of tourism and economic development in the future. This is true with regard to the fact that tourism is based on natural environment as well as on historical-cultural heritage. Sustainable tourism has three interconnected aspects, environmental, socio-cultural, and economic aspects. Sustainability implies permanence (utilization without compromising the need of the future), so sustainable tourism includes optimum use of

resources, biological diversity; minimization of ecological, cultural and social impacts, and maximization of benefits for conservation and local communities. It also refers to the management structures that are needed to achieve this as it stated in Creaco and Querini (2003).

### **2.3 Serengeti National Park**

The Serengeti National Park comprises over 14750 kilometer square and is the centerpiece of the Serengeti ecosystem which also incorporates the Ngorongoro Conservation Area. Kaaya *et al.*, (2017). Serengeti plains harbors the largest remaining unaltered animal migration in the world where over one million wildebeest plus hundreds of thousands of other ungulates engage in 1000km long annual circular trek spanning the two adjacent countries of Tanzania and Kenya, stated in UNESCO, (2016). This spectacular phenomenon takes place in unique scenic setting of endless plains of 25,000 km square of treeless, flat short grasslands dotted with rocky outcrops named kopjes. Interspersed with rivers and woodlands. The park also hosts at least four globally threatened or endangered animal species which are black rhino, elephant, wild dog and cheetah. However the park is listed as a UNESCO World Heritage Site and recently proclaimed as one of the seven natural wonders of Africa by African geographic, as indicated in Matungwa L. A. (2020).

Serengeti National Park contains most of the animal species found in the East African savannah and is home to some of the largest populations of herbivores and carnivores in the World, Michael and Anderson (2008) noted that SNP is one of the great conservation successes in the world. It is Tanzania's oldest and one of the world's best known wildlife sanctuaries protected since 1929 and it is the most visited park of all 16 parks in Tanzania and probably in east Africa. Okello and Grasty (2009) stated that it started out as a game reserve in 1928 and was declared a national park in 1951. It is within UNESCO World

heritage site and international biosphere reserve. The SNP lies at the heart of the world's largest and most impressive wildlife migration, at the peak of which the national park contains the highest concentration of mammals on earth. Its contribution to the development of tourism industry in Tanzania cannot be underestimated.

Kaltenborn *et al.* (2011) noted that the park is particularly famous for the large scale migrations of herbivores (wildebeest, zebra, Thomson's gazelle, and eland) directed by rainfall and available forage. But there are also large populations of resident herbivores (African buffalo, giraffe, Grant's gazelle, and others) as well as carnivores (lion, cheetah, hyena, and leopard) and a diversity of bird life, they also commented that between 150 000 and 200 000 tourists visit Serengeti annually whereby most visitors come to the park in the dry seasons, and the heaviest use occurs when the wildebeest migration is concentrated in the short grass plains.

### **2.3.1 Challenges Facing Serengeti National Park**

Like several other tropical ecosystems, Serengeti is facing unprecedented pressures threatening its ecological integrity like illegal hunting of wild animals and unsustainable activities leading to habitat destruction are major challenges confronting the ecosystem, it is one of the important off farm activities for rural communities living around the Serengeti ecosystem. The activity is more prominent in the western part of the ecosystem, has long been a major management challenge for conservation authorities, whereby both economic and cultural reasons motivate this activity (Kideghesho, 2010). He also noted that population growth and poverty poses a great threat to the ecosystem whereby population growth increases demand for land required for cultivation, livestock grazing, settlements, wood fuel, building poles, and medicinal plants.

On the other hand, poverty affects habitat quality by limiting peoples' access to modern agricultural technologies and inputs, thus leaving expansion to new lands (including critical wildlife habitats) the most feasible strategy of increasing agricultural outputs. Furthermore, extensive use of fuel wood at the expense of wildlife habitats is common among the poor, since the use of alternative sources of energy, such as electricity, which are environmentally friendly, is economically unfeasible.

Another challenge facing the Serengeti national park is a human-wildlife conflict, most of these conflicts emerge as a result of wild animals being accorded a higher priority than human beings such as unfair compensation for damage caused by wild animals. The higher priority accorded to wild animals has often inflicted costs on humans and as a result it creates a negative attitude on local community on the issue of conservation therefore minimal support to conservation.

## **2.4 Economic Role of Tourism Industry in the Community**

From an economist perspective, the main wildlife problem is that too often many of the costs of harvesting wildlife are not appropriately taken into account Bulte *et al.* (2003). The World Tourism Organization indicated that the economic value of tourism can be defined as the result of all economic impacts caused by tourism, these impacts are direct, indirect and induced through the total of tourism expenditures, creation of employment, positive and negative externalities, revenues from taxes and other public charges, foreign exchange earnings and the related multiplier effects. It indicated that the community can also benefit from tourism activities for example in some countries communities get a proportion of national park fees, through establishment of community development programs like education, health, youth, SME development, ecotourism, alternative livelihoods, establishment of infrastructure like water supply, access roads to parks in remote areas, and establishment of self-employed tourism businesses.

Moreover, (WTO, 2014) noted that members of local communities are employed within the wildlife watching tourism sector, however the benefits of tourism could be enhanced by establishing better linkages between accommodations and local food producers as well as capacity building to foster local employment in the tourism sector. Tourism, and specifically nature and wildlife tourism, can be an important source of revenues and employment if appropriate revenue sharing mechanisms are put in place enhancing the benefits for local communities and pro poor impacts of tourism, Hamilton *et al.* (2007) as cited in (WTO, 2014).

For many countries tourism is the main instrument for regional development, as it stimulates new economic activities. The tourists apart from coming for some specific attractions they also need other basic needs as usual during their trip creating opportunity for small entrepreneurs. Creaco and Querini (2003) noted that tourism may have a positive economic impact on the balance of payments, on employment, on gross income and production, but it may also have negative effects, particularly on the environment. When the limit of acceptable use and proper management procedures are not properly implemented negative impacts are expected.

The case of Serengeti provides many economic issues that can be addressed in several ways. For instance the question of poverty alleviation has been long said to be well eradicated through tourism activities. There are evidence which shows that through tourism activities, the economic development of the underdeveloped countries through foreign exchange earnings, creation of employment, opportunities and provision of public revenues are likely to be raised to the maximum as stated in Luvanga and Shitundu (2003).

The reported ecosystem loss and wildlife degradation in SNP is the result of negative economic impact to the stakeholders, landholders and the surrounding community, Emerton and Mfunda, (1999). This necessitates the need to improve the economic return from wildlife resources along with clear community involvement so as to increase peoples' attention when it comes to implementation of sustainability policies.

## **2.5 Economic Perspective behind Watching Animal Species**

National parks which are offered as ecotourism sites can enhance national income, and have economic impacts to society thereby improving well being of the community around, Radam *et al.* (2009). The quality of the natural environment plays a key role in attracting international visitors to tourist destinations (Kaltenborn, 2011). Peoples' interests in wildlife watching are highly varied from scientific study to entertainment value and this may change from time to time. Key factors in wildlife watching include experiencing animals in the wild, to observe their natural behavior and to appreciate their beauty hence attaching value to them. The destination play a big role in tourism since it is a final consideration of making decision of visiting a place, (Devashish, 2011).

Wildlife watching tourism makes an important contribution to the community development and conservation by raising awareness of the animals observed and their habitat, creating revenue for conservation, and by creating jobs and income for local communities. However to achieve these contribution, wildlife watching tourism needs to be carefully planned and managed by government agencies, the tourism sector and conservation managers (Tapper, 2006). With rapid growing demand from tourism for wildlife watching activities, control is highly needed to prevent adverse effects on wildlife and local communities hence ensuring sustainable development of tourism sector.

However, (Sobhee, 2008) recommended that in order to address the complex issues of protecting natural assets, sustainability and better recreational opportunities, it makes a lot of sense to evaluate the consumer surplus of tourists who have visited Mauritius and to capture thereafter their willingness to pay for improving the quality of the site. In this way, data would be generated to track the potential revenue that the authorities could exploit, through some well designed fiscal tool, in protecting these recreational assets, or at least some of their components, to ensure simultaneously sustainability of the tourism industry in the long run.

## **2.6 Threatened Animal Species**

The word ‘threatened’ species is the word that is used to combine three conservation statuses which are vulnerable, endangered and critically endangered. This is as per International Union for Conservation of Nature (IUCN) which is the foremost authority on threatened species worldwide. Vulnerable means the species faces a high risk of extinction in the wild in the medium term future, endangered means the species faces a very high risk of extinction in the wild in the near future and critically endangered means the species faces an extremely high risk of extinction in the wild in immediate future, IUCN Red list committee (2013).

The primary reason for listing species as endangered or threatened is the loss of habitat that is critical for survival. Unfortunately, continued habitat loss appears inevitable until human population and per capita consumption of natural resources can be stabilized as stated in Messmer *et al.* (1998). The authors noted that it is important to protect these threatened species as they have great contribution to wellbeing of mankind and their economic development through tourism activities.

The World Tourism Organization (2014) noted that, African countries have long promoted biodiversity conservation through sustainable use of natural resources and there have been major achievements in the protection and recovery of wildlife population but the dramatic increase in poaching and illicit trade of wildlife products since 2005 often referred to as ‘wildlife crime’ threatens and undermine these conservation achievements and endangers some of the most iconic species to become extinct within few decades, the animals include, elephants and rhinos.

But also other big mammals such as lions and gorillas as well as smaller species, also wildlife are threatened by the increasing loss of habitat and loss of range. It is even more important that the tourism industry sector should keep a close eye on this conservation status so as to take the necessary actions required immediately. Doing this helps a lot in ensuring the survival of the animal species in danger of perishing.

## **2.7 Visitors Satisfaction**

Satisfaction is the vital element in the survival of any tourism attraction or destination as it plays a significant role to tourists in deciding whether to recommend a place to others or to revisit the site, Kozak *et al.* (2000). If consumers are not happy with the service provided to them, it will automatically affect their experience with that destination.

The general consensus is that a visitors’ overall satisfaction is a multidimensional construct based on the interaction between tourists and the elements at the tourism site, Wuleke *et al.* (2013).

Several school of thought states that when examining tourists overall satisfaction, it is crucial to take into consideration the elements related to both the attraction and the services provided within, Kozak *et al.* (2000). Therefore measuring tourism satisfaction in tourism

services there are two main purpose which are; providing information about customers' needs, and check if the organization is currently meeting those needs and the second is to provide a platform for organization to communicate with their customers and identify their likes and dislikes including their overall satisfaction condition, (Benyai, 2012).

Measuring consumer satisfaction is the major factor of monitoring the continuous improvement of the services provided to the customers to archive innovation through consumer and also measure the level of competition. (Jin, 2000) noted that identifying which attributes satisfy the tourist who visit destinations will help tourism planners develop appropriate strategies to attract their customers and serve them effectively and may help to reduce marketing costs. Therefore tourists' satisfaction is very important for the survival of any tourism attraction or destination as it plays a significant role to tourists in deciding whether to recommend the place to others or revisit the place. Majority of tourists were satisfied with Amboseli park in Kenya and were willing to recommend the park to other tourists although tourist satisfaction level was dependent of nationality as well their belief that Kilimanjaro mountain was near, tourist satisfaction was also independent of prior viewing expectations in regards to specific mammals, Okello and Schuttler (2008).

The availability of different species, not only species but the ones with distinguishing features is one of the major factors for tourist satisfaction. They also, noted that the accessibility to experience culture also plays an important role in tourist attraction, for example in Kenya cultural aspects attracted 50% of tourists. To satisfy such desires of the tourists, inhabitants must appear in primitive state despite industrial revolutions, colonialism, wars of independence, nationalism, rise of new countries, economic development, tourism and production of modern technology as explained in Echtner and Prasad (2003). The challenge is that cultural attractions are less publicized.

In addition to that the Cooperative research centre during its research on tourism in Australia in 2004 it noted that 18.4% of visitors were influenced to come to Australia to experience native animals and recommended that factors which contributed to their satisfaction with a wildlife experience included how much the visitor felt they learnt about wildlife as well as ratings of the excitement and naturalness of the encounter. Satisfaction scores also depended on whether the visitors placed greater importance on seeing wildlife on holidays, desired wildlife encounters in natural environments, meeting with knowledgeable guides or staff and seeing an animal for the first time in real life.

Moreover, (Jin, 2014) pointed out that there are four factors which have a significant relationship with the overall satisfaction of tourists this includes general tour attractions, heritage attractions, maintenance factors, and cultural attractions. He added that there were also differences in the overall satisfaction of tourists in terms of gender, past experience, and time to travel. Thus, tourism planners need to improve and create key attributes for repeat and first time visitors as well as develop special services and products that make tourists revisit.

## **2.8 Willingness to Pay**

Willingness to pay is one among the famous study that is conducted by different scholars worldwide, willingness to pay of tourists can be used as a method of resource conservation in the destination that the tourists visits. (Sobhee, 2008) recommended that in order to address the complex issues of protecting natural assets, sustainability and better recreational opportunities, it makes a lot of sense to evaluate the consumer surplus of tourists who have visited Mauritius and to capture thereafter their willingness to pay for improving the quality of the site. In this way, data would be generated to track the potential revenue that the authorities could exploit, through some well designed fiscal tool, in protecting these

recreational assets, or at least some of their components, to ensure simultaneously sustainability of the tourism industry in the long run. For instance, Ngazy *et al.* (2004) indicated that Zanzibar tourists were ready to pay more if they knew they were helping the local community and protection of the forest which indicates their interest in eco tourism. In Greece for example, tourists were willing to pay more for accommodation in a hotel with renewable energy sources, although men were more willing to pay extra than women, Kostakis and Sardianou (2011). They also noted that age was one of the factors that affected the tourists' willingness to pay extra amount as an increase in age will positively affect the probability of paying more to stay in a green hotel whereas middle aged people are more likely than others to pay a premium for accommodation in a hotel with renewable energy practices. Education level was also one of the factors that affected their willingness to pay. Past experience, environmental awareness and information dissemination are strong, statistically significant, factors that positively affect tourists' willingness to pay for accommodation in a green hotel, bearing in mind that tourism is considered to be Greece's heavy industry, it is important for enhancing sustainable development that hotels embrace renewable energy technologies, Kostakis and Sardianou (2011).

According to (Weerakoon, 2015) visitors were willing to pay an increased entrance fee towards improvement of ecotourism facilities and environment conservation proposed in Hurulu forest reserve, the willingness to pay stated regarding the developed situation discloses the visitors' need of receiving improved recreational facilities and services. The average monthly income was a common factor which influenced the willingness to pay of foreign visitors who received a higher average monthly income were willing to pay an increased entrance fee without further improvement of facilities or environment quality. Other factors that influenced the visitors' willingness to pay included family size and education.

Similarly, according to Radam *et al.* (2009) willingness to pay for the entrance fee at the park was higher than the fee charged to them at the present, this could be used as a source of fund to support the development of ecotourism at Pangrango national park in Indonesia, thus the management should consider increasing the entrance fee at the park since it is currently at very minimum level and the fee has not increased for the last 10 years. The results of their study showed that household income, gender, residential, and bid price level were the significant factors that influence the amount of the entrance fee that tourists were willing to pay. They concluded from their study that even though the management will increase the entrance fee, most of visitors would still come to the park, because they thought that Pangrango national park was the most suitable place for their recreation and they enjoy their vacation.

Organization designed to manage and maintain protected areas are often faced with limited financial resources to maintain and monitor protected areas to their full potential. Thus, WTP studies are used to assess the park visitors' view and opinion towards their willingness to the extra cost. This is basically done so as to sustain the organization role in nature management and conservation of national park resources Riley *et al.* (2006). Conducting a WTP study and increase the price, helps the organization/government to implement conservation activities and all other related duties successfully. For example Cozumel, Mexico's marine park established a user park fee in 2002 for divers, snorkelers and other water sporting enthusiasts. In the first year of the newly established fee system operation, it produced revenues three times more than the Mexican governments' annual operating park budget for 2001. The revenues totaled from the established fee in that year were US\$600,000 which enabled the park to establish program, monitoring and purchase the necessary equipment to enforce park rules. (Carothers, 2003) cited in Reley *et al.* (2006).

Conclusively, most of the organizations designed/formed to operate the national parks for example are always faced with lack of funds. As discussed in literature review, WTP studies are conducted so as to find out how much the consumer is willing to pay for parks sustainability. The studies of this kind are very important to decision makers since they provide a baseline which facilitates setting friendly new prices which are consumer preferences.

## CHAPTER THREE

### 3.0 METHODOLOGY

#### 3.1 Description of the Study Area

The study was carried out in Mara region particularly within Serengeti ecosystem. Serengeti ecosystem is located in the northern Tanzania and extends to south west Kenya between latitude 1° and 3° S and longitude 34° and 36° E. It spans 30,000 km<sup>2</sup> and forms one of the important cross border conservation regions in the world. The ecosystem is a home of about 70 larger mammals and 500 avifauna species. It also supports one of the largest herds of migrating ungulates and the highest concentration of large predators in the world. Its high diversity in terms of species is a function of diverse habitats ranging from forests, swamps, kopjes, grasslands and woodland. Sinclair *et al.* (1979) as cited in Kideghesho *et al.* (2006).

Along with tourism activities in this region, Mara is a multiethnic region comprising of over 20 tribes earning their living through crop production, livestock husbandry, charcoal burning, hunting and mining as stated in Emerton and Mfunda (1999) cited in Kideghesho *et al.* (2006). These activities, take place both within and outside the protected area and they have detrimental impact on wildlife habitat and population. Kideghesho *et al.* (2005) reported that there was human encroachment for agriculture in Serengeti national park and Maswa game reserve. Mining and settlement were also increasing on the migratory corridors and along the western boundary of the park.

It is the largest protected area after Ruaha ecosystem in Iringa and it has got high frequency of visitors compared to other parks in Tanzania, TANAPA (2012). The study area is also a home of all five threatened species which were considered in this study which are Rhino, Elephants, Lions, Cheetah and Wild dogs.



**Figure 1: Serengeti Ecosystem**

Source: African Safaris Ltd (2019).

### **3.2 Climate**

Sinclair and Arcese, (1995) noted that climate in Serengeti is usually moderate and pleasant. The average temperatures are quite uniform throughout the year. Usually, it does not get very hot, but is consistently cool to cold at night and in the early mornings. The altitude in the Serengeti varies widely from 1139 to 2174 m (3737 to 7133 ft). Temperatures drop by about 6.5°C for every 1000m you climb (or 3.5°F per 1000ft). Some small variation of the temperature can also be experienced within the park.

Serengeti's dry season is from June to October. There are two wet seasons which have short rains from November to December and the long rains from March to May. During the wet season it rarely rains all day, but afternoon thundershowers can be expected. Afternoon temperatures are usually around 27°C/81°F. Most days have a fine, clear sky and sunny weather. It is possible for the short rains to begin in October sometimes as indicated in Sinclair *et al.* (2009).

### **3.3 Land Use**

Serengeti national park is a home of diverse species of flora and fauna. As its name states is the national park that has been set apart to be used for tourism activities such as game drive, balloon safari, wildlife watching and hunting tourism. (UNESCO, 2014) states that the area of savannah and open woodland comprises 1.5 million hectares and contains the largest herds of grazing animals in the world and the carnivores that prey on them, providing an attractive wildlife spectacle.

### **3.4 Research Design**

Cross sectional research design was used and the data were collected from foreign tourists. This design was preferred because it serves time. In cross sectional design, data are collected at a single point in time without repetition from a selected sample to represent the entire population (Bailey, 1998).

### **3.5 Sampling Procedure and Sample Size**

#### **3.5.1 Sampling procedure**

Purposive sampling was used to select three places where data could be collected from the respondents since they were expected to come to these places during their trips. At these places, respondents were randomly selected and given a questionnaire to fill in. The sampling unit for this study was a foreign tourist who had already visited SNP, so they were asked to state if they had already visited SNP before filling a questionnaire. The points at which data were collected are Seronera tourist information centre, Seronera air strip and Naabi gate.

#### **3.5.2 Sample size determination**

The population nature of this study was an infinite; this means there was no specific total number of people because the tourists are continuous in nature. So the sample size for this study was selected purposively basing on other willingness to pay studies that were conducted before as reference for sample size to be used in this study, Adepoju and Salimonu (2009).

But also (Bailey, 1994) states that thirty respondents per case are minimum number recommended to represent a population under study, therefore 145 respondents was engaged for the purpose of this study.

### **3.6 Data Collection**

#### **3.6.1 Primary data collection**

Primary data was collected from the respondents by using semi structured questionnaire, direct observation, key informants interviews and then information obtained was properly recorded for analysis.

##### **3.6.1.1 Semi structured questionnaire**

Combinations of open and close ended questions were used. The questionnaire was designed to allow collection of both quantitative and qualitative information. The information that foreign tourists were required to fill in the questionnaire included socio-economic factors such as age, gender, education level, marital status, family size, nationality and average income per month. Other information were on value attached to animal species, disappointment during the trip, satisfaction level, level of willingness to pay for conservation of threatened species, potential reason for willingness to pay, destination visited, importance pertaining their visit and experience with the tour company. The acquired data were recorded and analyzed.

##### **3.6.1.2 Key informants interview**

Key informants interview was conducted using guided questionnaire, aiming at acquiring more information from the key informants basing on their experience. The information asked from them include duration of their working experience, administration challenges, presence of any special fund provided for conservation purpose, suggestion of where should money be directed if the tourists were willing to pay.

### **3.6.2 Secondary data**

Secondary data were collected from Seronera center particularly from reports, magazines and books. Some other information was obtained from Tanzania wildlife research institute (TAWIRI) which is located alongside Seronera in the midst of SNP.

### **3.6.3 Data Analysis**

Level of tourists' willingness to pay was obtained by the use of descriptive statistics where the frequency of each amount suggested in each questionnaire was analyzed and gave the most preferred amount.

The software was also used to analyze the influence of satisfaction level with animal species on willingness to pay. Moreover, multiple linear regression was used so as to determine if there was any significant factor influencing willingness to pay. Therefore six factors were regressed against willingness to pay to prove its significance and finally, findings were presented. Qualitative information obtained through key informants interview, magazine and personal communication were broken into units of themes to synthesize the meaning and perceptions using content analysis.

## **CHAPTER FOUR**

### **4.0 RESULTS AND DISCUSSION**

#### **4.1 Social-Economic Characteristics of Respondents Willingness to Pay**

Social economic characteristics such as age, gender, education level, marital status, family size and average income per month were considered in this study as discussed in chapter 4.1.

##### **4.1.1 Age of Respondents**

The results indicated that 40% of the respondents were between the ages of 19-30 as shown in Table 1. This was the highest percent of age group indicating that people in this age group were most likely coming for tourism activities. The young tourists are more active and likely to seek a whole range of physical activities and interaction experience when visiting a destination. This relate to (TTSS, 2011) tourism survey which reported that about 54% of the visitors who came to Tanzania were in the age group of 25-44. However the result shows that 30.3% came from the age group of above 61 (Table 1) indicating that this age group consists of retired workers so they have enough time and savings for tourism activities. As they go for tourism activities and enjoy the natural beauty of creation they probably wish to pay for its conservation, so that the next generation will also appreciate the creation. (Jonsson, 2008) commented that older tourists are more likely to travel for reasons based on cultural exploration and relaxation. Also 8.2% and 7.5% came from the age group of 41-50 and 51- 60 (Table 1) respectively, indicating that at this age most of them have already visited some destinations. Most of people at this category they are preparing themselves for retirement hence they spend much of their time planning and organizing investments rather than tourism activities.

About 2.2% were under 18 (Table 1) meaning that people at this age are still young attending school. They are still depending on their parents, guardian and or their teachers at school to give them some insight about tourism and money to spend.

**Table 1: Age of Respondents**

<b>Age</b>	<b>Frequency</b>	<b>Percentage</b>
< 18	3	2.2
19-30	58	40
31-40	17	11.8
41-50	12	8.2
51-60	11	7.5
>61	44	30.3
Total	145	100

#### **4.1.2 Respondents average income per month**

In this study 33% of the respondents earned less than 1000 USD per month and this was the big population (Table 2). Despite the fact that they earned little amount of money, they still participated in tourism activities, this could be because of tourism being among the priorities set within individuals' budget. It is true that one can have high average income per month but tourism activities could not be a priority to such an individual, as a result giving it less consideration in terms of consumption and willingness to pay for conservation purpose. This is proved by the results in table 2 where a total of 38% of respondents were those ranging in average income of 1001 – 5000 USD per month, which differs with the previous by only 5%. However those who attained more than 5001 USD average income per month appeared to be 29% of the respondents. Meaning that the more income acquired per month facilitated a desire for visitation and probably willingness to pay for conservation of threatened species. This results are supported by what (Song, 2010) found in his study, that tourists arrivals in Hong Kong were influenced mainly by tourists' income.

**Table 2: Respondents Average Income per Month**

<b>Income /month (USD)</b>	<b>Frequency</b>	<b>Percentage</b>
<1000	47	33
1001 – 2000	14	9
2001 – 3000	10	7
3001 – 4000	15	11
4001 – 5000	15	11
>5001	44	29
Total	145	100

#### **4.1.3 Respondents sex**

In this study 60.7% of the respondents were female and 39.3 were male as shown in Table 3, meaning that many females came for tourism activities than men. The results are contrary to many studies where males outnumbered females. For instance, tourism sector profile (2009) reported that among the international visitors there were more males (76%) than females (24%) in the business segment. The study also indicated that in both holiday and VFR (visiting friends and relatives) segments females slightly outnumber males by 2 and 4 percentage respectively. This could mean that in Tanzania we have many visitors in holiday and VFR segment rather than in business. But also the other reason for having many females may be because of the preferred season in which data were collected. This was between October and December. According to (TANAPA, 2012), the dry season which is mid May to December is the best time to see large mammals and predators which could be the preference of most female tourists.

**Table 3: Respondents Sex**

<b>Respondents sex</b>	<b>Frequency</b>	<b>Percent</b>
Male	57	39.3
Female	88	60.7
Total	145	100.0

#### 4.1.4 Respondents' Education

About 63% of the respondents, included people who had gone to school between 16-20 years, (Table 4). Meaning that as the people gets more education they became more aware and develop a desire for tourism activities. (Kim, 2002) commented that per capita retail sales receipts, available health care and overall level of education increase very significantly with increasing levels of tourism development. This could mean that education have positive contribution to tourism development. Results also shows that 18.5% of the respondents had between 11-15 years spent at school whereby 16.4% had less than ten years spent at school (Table 4). This shows a little decrease in tourism desire, which might be because little awareness compared to those who have stayed at school between 16-20 years. However only 2.1% percent of the respondents had stayed at school between 21- 25 years, this is the PhD category. These appeared to be few, probably due to the nature of their work of which in most cases is teaching university students and doing research which keeps them very busy throughout.

**Table 4: Respondents Education**

<b>Years spent at school</b>	<b>Frequency</b>	<b>Percent</b>
<10	23	16.4
11– 15	26	18.5
16 – 20	88	62.9
21 – 25	3	2.1
Total	140	100.0

#### 4.1.5 Respondents Marital Status

The results indicates that 55.6% of the respondents were single as shown in Table 5 and this was the highest percent which means people who are single have no family barrier to visit different destination in the world. This is quite different from 41% (Table 5) who are married and therefore it is necessary for them to seek family permission before they decide to go for a tour. A family responsibility has to be taken into consideration in whatever decision that

has to be made. Single ones have got very few responsibilities and limitation hence making it easy for them to plan for a tour and go for it. Very few (3%) were divorced. This group of people needs comfort because of broken marriages. Therefore tourism could be the best source of their comfort and refreshment.

**Table 5: Respondents Marital Status**

<b>Respondents marital status</b>	<b>Frequency</b>	<b>Percent</b>
Married	60	41.7
Single	82	55.6
Divorced	3	2.1
Total	145	100.0

#### **4.1.6 Respondents' family size**

About 24% was the highest percent of the total respondent and these happened to be a family comprising of four people on average (Table 6). Basically this is a family with father, mother and two children. When the children are at school already, parents may decide to go for a tour or otherwise they decide to travel with them. The other nearest percentage was that of 20.1% which was for the family having two people who in most cases are husband and wife (Table 6). Reasons for tour could be honeymoon purpose, having good time with one another as they begin family life or VFR. It was followed by 19.4% which consisted one family member. This means that this one person can easily make decision without seeking consensus from any other. That decision does not affect anybody hence free to plan different desired tours given that there is enough money to spend. 16.4% of the respondents had five family members; this means two parents plus three children. This means as the family increases the budget increases too. 7% appeared four times representing families with seven or more members; these were very few because to go for a tour they need to save for a long time because of the increased responsibilities. All these categories affect willingness to pay either positively or negatively.

**Table 6: Respondent's Family Size**

<b>Respondents family size</b>	<b>Frequency</b>	<b>Percent</b>
1 – 3	66	49.2
4 – 6	61	45.5
7 – 9	5	3.6
10 – 12	2	1.4
Total	134	100.0

#### **4.2 Analysis of Foreign Tourists' Willingness to Pay**

After analyzing the data obtained during this study it indicated that 63% were willing to pay for conservation of threatened species and 37% were not willing to pay. Results show that those who were willing to pay, were also ready to pay an extra amount specifically for conservation of threatened species, this was due to their love of wildlife and awareness on the importance of conserving these species under threat for future generation consumption. Moreover the 37% percent were not willing to pay, probably they felt that the fee charged was already enough. This attitude could be due to their economic status or the value they put on threatened species.

#### **4.3 Level of Tourists' Willingness to Pay**

The study aimed at finding out the extra amount which could be added to current entrance fee for the purpose of conservation of threatened species. Based on the current entrance fee (which is 70 USD for high season and 60 USD for low season) respondents were asked to state how much they could be willing to add for conservation of threatened species in the park. Results show that 57% of all respondents as indicated in table 7 were willing to pay up to 60 USD more specifically for conservation purpose making the sum total of 130 USD for high season and 120 USD for low season. But also the result indicated that about 21.1% of the respondents were willing to pay between 70 – 90USD as shown in Table 7. This means that 78.1% of all respondents knew the importance of conservation and therefore their love and value put on wildlife influenced them to pay more for sustainable tourism.

For TANAPA who are responsible with setting the entrance fee price, this may mean that there is an opportunity for them to increase fees up to 60USD more, considering competition from other tourist destination.

However these results are supported by Tsi *et al.* (2008) study on willingness to pay for conservation of wild animals. Findings indicated that, the population of North Cameroon was willing to pay from 50-500 Central African francs (FCFA) for wildlife conservation. And as much as 43 individuals were willing to accept a deduction at source of 50 FCFA from their monthly salaries.

**Table 7: Level of tourists' willingness to pay**

<b>Extra amount the tourists are willing to pay</b>	<b>Frequency</b>	<b>Percent</b>
10 – 30	15	15.7
40 – 60	54	57
70 – 90	20	21.1
81 – 300	7	7.2
Total	95	100

#### **4.4 Factors that Influence Tourists' Willingness to Pay**

In determining factors that influence tourist willingness to pay for conserving threatened species, multiple linear regression analysis was performed using 145 data points whereby the findings established three factors to be statistically significant which are summarized in Table 8.

**Table 8: Factors Influencing Willingness to Pay for Conservation of Threatened Species**

Variable	Coefficient	Std. Error	Standardized Coefficients	t	Sig.
(Constant)	0.111	0.292		0.379	0.705
Respondents age	-0.005	0.002	-0.226	2.629	0.01 *
Respondents sex	0.072	0.077	0.073	0.940	0.349
Education	0.043	0.012	0.318	3.592	0.000 *
Respondents marital status	-0.048	0.054	-0.071	0.906	0.367
Respondents family size	0.011	0.019	0.048	0.618	0.537
Average Income/month	0.001	0.000	0.163	2.038	0.044 **
<b>Dependent Variable: Willingness to pay</b>					

R-Square = 0.536, ANOVA F=8.284, P=0.000, Number of Observation=145, \* Significant at 1% and \*\* Significant at 5%.

#### 4.4.1 Respondents age

The factor respondent age was found to be statistically significant at 1% level but with a negative coefficient -0.005 as shown in Table 8. The negative coefficient for the factor mean that decrease of age by 0.005 will decrease willingness to pay by 0.5% holding all other independent variables constant. This could mean that the older tourists have less income as compared to young tourists and therefore more likely to be not willing to pay. The results correlates with Ivanova *et al.* (2004) who reported that age is also an explanatory variable associated with post material values, with young people being more willing to pay than their older counterparts.

#### 4.4.2 Education

The second factor respondents' education was also found to be significant at 1% level with positive coefficient 0.043 (Table 8). This means increase of years at school by 1 year will increase the level of willingness to pay by 0.043 dollars holding all other independent

variables fixed. These results imply that the higher the education the higher willingness to pay for conservation of threatened species. Several WTP studies observed a similar relationship between level of education and respondents response towards the WTP elicitation questions. For example Bandara *et al.* (2002) in their study about WTP reported that about 99.3% of the respondents in the sample were literate and 90% of the respondents had at least 10 years of formal schooling.

#### **4.4.3 Respondents average income per month**

The third factor respondents' average income per month was established to be statistically significant at 5% with a positive coefficient 0.001 as shown in Table 8. Which means that in every increase of income by 0.001 will increase the level of willingness to pay by 0.1% holding all other factors constant. That is to say more paid tourists are more likely to be willing to pay for the conservation of threatened species. However other studies have also shown a positive relationship between income and WTP for environmental services. For example Ndetewio *et al.* (2013) indicated that income and amount of water consumption emerged to be the most important factors which influenced the Pangani basin domestic water users' willingness to pay for environmental services. Their findings reported that 1% increase in household income led into 37.4% increase of WTP for environmental services holding other factors constant.

Other factors namely sex, marital status and family size were found to be not statistically significant. Regarding sex, both male and female tourists as human beings, appear to have the same attitude towards conservation of threatened animals. With marital status, marriage does not change individual interest, so either one was willing to pay or not that interest remains the same. Concerning family size, it does not change individuals' desire given that with family planning awareness, most parents decide the number of children considering

their income. Family members could be economical sensitive but still their attitude will remain the same.

#### **4.5 Influence of Satisfaction Level with Wildlife Viewing on Willingness to Pay**

Satisfaction level with animal species wanted influences willingness to pay but also indicates that importance of conserving threatened species cannot be underestimated. This was realized when the respondents were asked to rank the level of their satisfaction and it was identified that 66.2% of the respondents ranked their satisfaction level as “highest” followed by 22.8% who ranked it as “high” as indicated in Table 9. The sum of all these percent makes a total of 89% which means that animals wanted by the tourists had a great influence on their willingness to pay for conservation of threatened species. However comparing 66.2% of the highest satisfaction rank with 63% who were willing to pay, this implies that satisfaction level with animal species influence willingness to pay due to the fact that if a person appreciates something he will also pay for its existence so that one can keep enjoying it and or for the benefit of future generation.

**Table 9: Responses by tourists on satisfaction level with wildlife viewing**

<b>Level of satisfaction on wildlife viewing</b>	<b>Frequency</b>	<b>Percent</b>
Lowest	3	2.1
Low	6	4.1
Moderate	7	4.8
High	33	22.8
Highest	96	66.2
Total	145	100.0

#### **4.6 Contribution of wildlife viewing to Tourists Visit in Tanzania**

Respondents were asked to rank the reasons pertaining their visit in Tanzania and 80% of the respondents ranked wildlife viewing as “very high” followed by 9% who ranked it as “high” as shown in Table 10. This means wildlife viewing contributes a lot to their visit and therefore when they see all expected animal in their trip it adds to their satisfaction level.

Provided that wildlife viewing is a pull factor to their visit, it influences willingness to pay so that these animals will be sustained for the purpose of repeat tourism and next generation benefit. Basing on the fact that Tanzania is a well known destination for wildlife watching tourism (UNTWO, 2014), that is why it attracts many tourists interested in wildlife watching and eventually willing to pay for conservation of those species. Table 10 shows the rank given to wildlife viewing as a pull factor to Tanzania destinations.

**Table 10: Contribution of wildlife viewing to Tourists Visit in Tanzania**

<b>Wildlife viewing</b>	<b>Frequency</b>	<b>Percent</b>
Very Low	5	3.4
Low	1	0.7
Moderate	4	2.8
High	13	9.0
Very High	116	80.0
Nil	6	4.1
Total	145	100.0

#### **4.7 Value Attached to Animal Species Wanted as Driving Force for Willingness to Pay**

Influence of satisfaction level with animal species on willingness to pay is also determined by the value attached to them. The researcher investigated on the value attached to threatened species by giving respondents twelve different animals including the five targeted threatened animals according to IUCN which were Rhino, Wild dogs, Elephant, Cheetah and Lion. Then they were asked to indicate the value attached to every animal.

##### **4.7.1 Value attached to Rhino**

The Value attached to Rhino categorized as “very high” was 79.6% as indicated in Table 11 which means that it is more valued by the tourists. This could be because of their enormous pointed horns and the tendency of being scarce due to illegal trade of their horns which cause extreme hunting of Rhino as explained in (Milliken, 2014). Considering this scenario it

shows the importance of conserving Rhinos for sustainable tourism activities since they contribute a lot to visitors' satisfaction hence willingness to pay.

**Table 11: Responses by tourists on value attached to Rhino**

<b>Responses on value attached to rhino</b>	<b>Frequency</b>	<b>Percent</b>
very high	113	79.6
High	10	7.0
moderate	3	2.1
low	5	3.5
Very Low	11	7.7
Total	145	100.0

#### **4.7.2 Value attached to Lion**

When the value attached to lion was assessed it happened to be 81.2% of respondents who ranked it as “very high” followed by 11% who ranked it “high” as shown in Table 12, which means that most of the tourists prefer lion in their trip hence willingness to pay for its conservation. The reason could be its distinguished feature of being a king of the jungle. This finding relates to (Wuleka, 2013) who reported that among other animals, the most preferred wildlife species that visitors come to view were lions.

**Table 12: Responses by tourists on value attached to Lion**

<b>Responses on value attached to Lion</b>	<b>Frequency</b>	<b>Percent</b>
Very High	118	81.2
High	17	11.8
Moderate	3	2.1
Low	2	1.4
Very low	5	3.5
Total	145	100

#### **4.7.3 Value attached to wild dog**

With Wild dog, 40.4% of the respondents ranked it as “very high” whereby 11% ranked them as “high” (Table 13). This means in wildlife viewing tourism, wherever there is ten tourists four of them expects to see wild dogs in their trip. This could be because of the unique features of wild dog being among the large carnivores that need large areas to

survive; yet wild dogs range more widely, and hence need larger areas, than almost any other terrestrial carnivore species anywhere in the world (TANAPA, 2012).

**Table 13: Responses by tourists on value attached to Wild dog**

<b>Value attached to wild dog</b>	<b>Frequency</b>	<b>Percent</b>
Very High	57	40.4
High	16	11.3
Moderate	37	26.2
Low	19	13.5
Very Low	12	8.5
Total	141	100.0

#### **4.7.4 Value attached to Elephant**

According to the results 66.7% of the tourists ranked “very high” the value of Elephant (Table 14). Whereby, 25% of the respondent ranked it as high. The sum of these two highest categories of ranking brings the total of 91.7%, this means that Elephants are most valued by the tourists and contributes much to their satisfaction. Following this value, it leads to willingness to pay for conservation of these species so as to sustain them.

**Table 14: Responses by tourists on value attached to Elephant**

<b>Value attached to Elephant</b>	<b>Frequency</b>	<b>Valid Percent</b>
Very High	96	66.7
High	36	25.0
Moderate	6	4.2
Low	2	1.4
Very Low	4	2.8
Total	144	100.0

#### **4.7.5 Value attached to Cheetah**

With cheetah, 79% ranked it as very high and 8.4% as “high” (Table 15). This means that in every ten tourists eight of them have got desire to see cheetah in their game drive. This could be because like wild dogs, cheetahs are also among the large carnivores that need large areas to survive; they range more widely and hence need larger area (TANAPA, 2012). But also

they are known for their tremendous speed in hunting. This makes it attractive and hence tourists give it high value for the contribution towards their satisfaction.

**Table 15: Responses by tourists on value attached to Cheetah**

<b>Value attached to Cheetah</b>	<b>Frequency</b>	<b>Percent</b>
Very High	113	79.0
High	12	8.4
Moderate	5	3.5
Low	4	2.8
Very Low	9	6.3
Total	143	100.0

#### **4.8 Disappointment due to Missing Threatened Species in the Trip**

Respondents were asked to state animals which caused disappointment when they were missed/not seen during the trip. The mentioned animals were among the five threatened species (Table 16). About 27% were disappointed if they missed Rhino in their trip, and this was the highest percent (Table 16). This could mean that Rhino are very scarce in the wild and also tourists desire not to miss them in their trip. About 12% of the respondents would be disappointed if they missed cheetah in their trip. This provides a message that Cheetah plays an important role in visitors' satisfaction. Not only that, but also Wild dog, Lion and Elephant led to disappointment by 6.2%, 2.8% and 1.4% respectively if they were not seen during the trip. Note that the difference in percentage indicates the frequency of missing an animal. For example 1.4% disappointment caused by missing Elephant means that in most cases elephants were seen during the trip. Results imply that these threatened species have contribution into visitors' satisfaction and therefore willingness to pay for its conservation. The following table shows the frequency and percent of each animal which were not seen during the trip.

**Table 16: Responses by tourists on disappointment of not seeing threatened animal species**

<b>Animals that tourists were disappointed if not seen</b>	<b>Frequency</b>	<b>Percent</b>
Rhino	39	26.9
Wild dogs	9	6.2
Cheetah	18	12.4
Lion	4	2.8
Elephant	2	1.4
Not missed any	73	50.2
Total	145	100.0

#### **4.9 Tourists' Experience with the Tour Company**

The study also aimed at finding out the relationship between tourists and the tour company that takes them to several destinations. It was observed that 100% of the respondents were happy with their tour companies and guides (Table 17). Probably because of the competition present among these companies so every company does its best so as to win customers. This means that if every company will increase efforts in providing the best service to tourists, many more will keep coming to Tanzania attractions, hence maximizing companies income and as a result national income.

**Table 17: Tourists experience with Tour Company**

<b>Tourist's experience with Tour Company</b>	<b>Frequency</b>	<b>Percent</b>
Good	140	100
Bad	0	
Missing Value	5	
Total	145	

## **CHAPTER FIVE**

### **5.0 CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Conclusion**

The findings from this study have shown that, foreign tourists were willing to pay for conservation of threatened species. About 63% of the respondents said “yes” to the question regarding their willingness to pay and 52.6 % were willing to pay up to 60USD as additional amount from the original price for conservation purpose. The factors contributing to willingness to pay were also assessed and the researcher found that only three factors were significant among others. These factors were respondents’ age, education and average income per month. These three appeared to have significant contribution on tourist’s willingness to pay for conservation of threatened species.

However, findings found that all five threatened animals under study, which were Lion, Rhino, Cheetah, Elephant and Wild dog contributed a lot to tourists’ satisfaction. This implies that immediate efforts were then needed to conserve these species. To the tour guide this sends an important message that during their trip if they successfully see these animals, it contributes a lot to their satisfaction. However the study proved that, threatened species were among the animal species preferred by the tourists and contributed to their satisfaction hence absence of these animals could result to dissatisfaction among tourists. This being the case, they were willing to pay more amount of money just for conservation purpose.

## 5.2 Recommendations

Basing on the findings from this study, the following recommendations are provided so that upon implementation, positive changes will be realized.

- i. Given that tourists were willing to pay for conservation of threatened species, Tanzania National Park (TANAPA) which is responsible with setting new price, should consider increasing entrance fee and enhance proper implementation procedures for conservation of threatened species provided that the increase is dedicated to those activities.
- ii. The management authority should consider construction of pathways which will make easier and more accessible to watch animals and hence increase satisfaction levels.
- iii. For development of tourism industry, organizations responsible with marketing tourism attractions such Tanzania Tourism Board (TTB), should consider strategic marketing basing on tourist preferences and factors like age, education and average income per month for successful outcome.
- iv. Outreach program should be given a priority in order to serve threatened species. The community should be educated on the importance of conserving wildlife which will make them become aware of conservation activities and its importance.
- v. Tour companies in collaboration with the government should participate in conservation of threatened species either by finding or providing man power. Since most of their activities are within the national parks they can provide best experience and support as far as conservation is concerned.
- vi. The government should consider funding WTP studies so that it may help to make decision in different discipline. This has to be used as a tool to find out peoples willingness to pay for various development activities.

- vii. More willingness to pay studies has to be done so that enough funds are acquired for conservation purpose in tourism industry. For example, tour companies, hotels and airline companies which benefits from tourism activities are the possible areas where WTP studies can be conducted.

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## APPENDICES

### Appendix 1: Questionnaire to foreign tourists

The goal of this study was to gather information that would enable estimation of the tourists' willingness to pay for conservation of threatened species in Serengeti ecosystem. Provided that the respondents were foreign tourists who come specifically for leisure and in most cases their time is limited, so the questionnaire was prepared strategically, asking all required information and squeezed to fit one page so that it would not be tiresome but at the same time meeting all the requirement.

Please tick the appropriate option and or write where necessary.

1. Fill the following table as required

Age	Gender	Education Level	Marital status	Family size	Nationality	Average income / month

2. How much value do you attach to viewing these animal species? Indicate: (1) Very high  
2) High (3) Moderate (4) Low (5) Very low

Wildebeest	Rhino	Warthog	Wild dogs	Giraffe	Elephant	Jackal	Cheetah	Gazelle	Hippo	Lion	Buffalo

3. Where you disappointed not to see some of the animal species?

YES [ ] NO [ ]

4. If YES what are they?

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5. Rank the level of satisfaction with your game viewing experience in Serengeti national park (1 lowest 5 highest) [ ]

6. The park authority plans to improve conservation of threatened species for sustainable tourism through protecting habitat and solving human-animal conflict, therefore increase the charges. Given the current park fee is \$ 60, will you be willing to pay more amount? YES [ ] NO [ ]

7. If YES how much more are you willing to pay? \_\_\_\_\_
8. Below are potential reasons for willingness to pay, please rank them on a scale of (1 Lowest to 10 Highest)
- a) I love wildlife [ ] b) For the next generation [ ] c) To serve threatened species [ ]
- d) They are also God's creation [ ] e) other(s) \_\_\_\_\_
9. If not willing to pay at all, what are the reasons \_\_\_\_\_
10. Apart from this destination, what other park have you visited? (List All)
- \_\_\_\_\_
11. Rank the importance (on scale of 1 Lowest to 10 Highest) below pertaining your visit in Tanzania Wildlife viewing [ ] b) Need for pleasant weather [ ] c) Mountain climbing [ ]
- d) Experiencing new culture [ ] e) Conferencing [ ] f) other(s) \_\_\_\_\_
12. What is the experience with your tour company?
- Good [ ] Bad [ ]

## Appendix 2: Checklist to key informants

This also was just a guide during the key informants' interview, so it was also squeezed to one page. Their response was recorded by the researcher so that they can help in report preparation.

Occupation \_\_\_\_\_

1. For how long have you been working? \_\_\_\_\_
2. What are the challenges that face the authority in conservation of threatened species in the national park?

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3. Is there any special fund that is being used for conservation of the following threatened species?

Lion	Elephant	Cheetah	Wild dog	Rhino
YES/NO	YES/NO	YES/NO	YES/NO	YES/NO

4. If YES what is it/are they? (state)

Wild dog fund activity	Success level 1-10	Rhino fund activity	Success level 1-10
1.	1.	1.	1.
2.	2.	2.	2.
3.	3.	3.	3.

Lion fund activity	Success level 1-10	Elephant fund activity	Success level 1-10	Cheetah fund activity	Success level 1-10
1.		1.		1.	1.
2.		2.		2.	2.
3.		3.		3.	3.

5. If no any success, what is the conservation challenge/s for each?

Lion	Elephant	Cheetah	Wild dog	Rhino
1.	1.	1.	1.	1.
2.	2.	2.	2.	2.
3.	3.	3.	3.	3.

6. Suppose the tourists are willing to pay more money as park entry fee for conservation of threatened species, in which ways do you suggest it should be used? (state)

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