*UNIVERSIDAD DE LAS PALMAS DE GRAN CANARIA*

INSTITUTO UNIVERSITARIO DE TURISMO Y DESARROLLO ECONÓMICO SOSTENIBLE

**MSc in Tourism Transport and Environmental Economics**

Demand analysis for ecotourism products in the South Eastern region of Ecuador

**TITLE**

Jéssica del Cisne Macas Romero

NIE Y3758385S

(Student's signature)

Supervised by: Concepción Román García

Las Palmas de Gran Canarias 08/06/2015

# Table of contents

# Index of tables

# Index of graphics

## 1. INTRODUCTION

Ecotourism combines passion for travel with the interest in the preservation of nature. Speaking of ecotourism it is related to concepts of sustainability, conservation and participation of the local community, this term has been used to promote tourism activities in the natural environment and attract tourists interested in nature and culture of places to visit.

The ecotourism is a segment of the tourist activity that uses in a sustainable way the natural and cultural heritage, encourages its conservation and seeks the formation of an environmental consciousness through the interpretation of the environment by promoting the welfare of the communities involved.

For ecotourism contributes to sustainable development of the regions, and to offer alternatives to tourism should be developed according to the guidelines or principles that underpin it, therefore it should be clear what it's the definition. The following are some of the most complete definitions for ecotourism:

Ecotourism is now defined as "responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education" (The International Ecotourism Society , 2015)

The Nature Conservancy adopts the definition articulated by the World Conservation Union "Environmentally responsible travel to natural areas, in order to enjoy and appreciate nature (and accompanying cultural features, both past and present) that promote conservation, have a low visitor impact and provide for beneficially active socio-economic involvement of local peoples." (Ceballos Lascuráin, 1993)

Another important definition for ecotourism is the one given by the National Chamber of Ecotourism and Sustainable Tourism of Costa Rica (International forum of Ecotourism, 2004):

> "It is the specialized segment of responsible tourism, which promotes and supports the conservation of nature and the cultural values of the various locations, interpreting them for general public, and sponsoring the socio-economic improvement of local communities in an ethical fashion, aiming to increase awareness and satisfaction of external customers. Its activities are designed to be carried out in accordance with the environment, leading its customers to a direct and personal contact with nature and the local culture"

Also the United Nations World Tourism Organization (UNWTO) uses the word ecotourism to mean forms of tourism which have the following characteristics:

1. All nature-based forms of tourism in which the main motivation of the tourists is the observation and appreciation of nature as well as the traditional cultures prevailing in natural areas.
2. It contains educational and interpretation features.
3. It is generally, but not exclusively organized by specialized tour operators for small groups. Service provider partners at the destinations tend to be small, locally owned businesses.
4. It minimizes negative impacts upon the natural and socio-cultural environment.

5. It supports the maintenance of natural areas which are used as ecotourism attractions by:
    - Generating economic benefits for host communities, organizations and authorities managing natural areas with conservation purposes,
    - Providing alternative employment and income opportunities for local communities,
    - Increasing awareness towards the conservation of natural and cultural assets, both among locals and tourists. (The British Ecotourism Market, 2002)

The characteristics that UNWTO sets for ecotourism have the same basis for action than those established by the Nature Conservancy, for them the ecotourism possesses the following characteristics:

- Conscientious, low-impact visitor behavior
- Sensitivity towards, and appreciation of, local cultures and biodiversity
- Support for local conservation efforts
- Sustainable benefits to local communities
- Local participation in decision-making
- Educational components for both the traveler and local communities

Therefore, ecotourism is linked to a sense of ethics because, beyond the enjoyment of the traveler, pursues to promote the welfare of local communities, who are acting as recipients of tourism and the preservation of the natural environment. Ecotourism also seeks to promote sustainable development i.e. growth in the present that does not affect future possibilities. It is important to include community's perspective because ecotourism cannot be successful without community support. For successful tourism development, community leaders and tourism planners need to view tourism as a 'local community industry'.

As an activity directly related to the nature, it involves protecting certain areas, thus achieving preserve the biodiversity of the area and turning it into a factor of attraction for tourists.

It is noteworthy that the importance of ecotourism is based on three fundamental principles, as required by The International Tourism Society:

- Is non-consumptive / non-extractive
- Creates an ecological conscience
- Holds eco-centric values and ethics in relation to nature

Ecotourism is important because thanks to its implementation, the understanding of the impacts of tourism on the natural and human environment are taken into account, and allows to generate jobs locally, either directly in the tourism sector or in other supporting sectors.

Also, local communities and indigenous cultures can be harmed in different ways by an arrival of foreign visitors, however this same growth generates significant opportunities for both conservation and local communities. It becomes an incentive for the development of industries in the area such as hotels, restaurants, transport, crafts and tourist guide services. Achieving well be an alternative source of income for the local industry and Ecotourism can provide revenues for the protection of national parks and other natural areas.

The ecotourism provides some benefits; among which can mention: conservation of natural areas and resources in worldwide, and to promote understanding and respect for cultures,

heritage and natural environment. Also it let to discover natural and rural places of great value and beauty, gives the opportunity to live in contact with nature and interact with it, and therefore get away from all types of pollution that exists in big cities. It is ideal to relax and unwind, allowing tourists who enjoy this type of tourism can perform a host of outdoor activities such as hiking, bird watching, horseback riding etc. Besides, ecotourism can increase the level of education and involvement among travelers, making them engage with the cause and effective help of conservation.

And even more importantly, ecotourism serves as a very effective starting point of rural populations or communities to boost its economy to remain and take care of its natural and ethnographic environment, achieving a sustainable economic development of the population involved. Some nature reserves have tried to promote a mutual economic interest in ecotourism by: subcontracting certain services and products to neighboring communities, buying local produce, offering cultural activities and services to the tourists inside the reserves, providing the opportunity for locals to sell their stuffs.

The UNWTO recognized the importance of ecotourism, and they decided to make a designation of the year 2002 as the International Year of Ecotourism:

> "In fostering better understanding among peoples everywhere, in leading to greater awareness of the rich heritage of various civilizations and in bringing about a better appreciation of the inherent values of different cultures, thereby contributing to the strengthening of world peace" (United Nations, 1998)

Millions of people visit protected areas each year, the current market trend goes to meet growing needs of a tourist looking to enjoy natural areas and cultural offerings. Ecotourism has been implemented in several countries, and it is necessary to review some of the main and more recognized experiences internationally.

The International Ecotourism Society (TIES) mentions that:

> "Some examples of best management practices in ecotourism development include preserving cultural heritage, sourcing locally produced foods and souvenirs, supporting community conservation projects, recycling and treating wastes, and hiring local employees, especially women and minorities, and paying them fair wages. In a message delivered to mark the observance of World Tourism Day 2014, UN Secretary-General Ban Ki-moon emphasized the benefits of tourism for local communities, adding that as an industry it "helps people to develop a variety of skills" and builds "stronger and more resilient communities". The power of travel can transform people and create change. When executed mindfully, and with the minimum impact, travel can inspire cultural awareness, tolerance, and commitment to environmental responsibility".

Among the most important ecotourism experiences in Latin America we can mention Costa Rica and Brazil. Costa Rica is an eco-destination, Pure Life (Pura Vida) is its motto, and identifies the Costa Ricans. The country is considered the birthplace of ecotourism and also the place where this activity has achieved the highest level of success.

This country has an area of 51,100 square kilometers, accounting for 0.3% of the total surface of the planet, here is staying 5% of global biodiversity. Costa Rica has more bird species than the United States Nation and more variety of butterflies than throughout the African continent, for that reason, this Central American nation of 4 million people has gained

international recognition justified. Thanks to the Costa Rica's diverse habitats and ecosystems in this place can be found different species of flora and fauna, also 22 national parks, 10 wildlife refuges, 12 biological reserves, 8 forest reserves and 26 protected zones, covering 25% of the national territory.

Costa Rica's tourism industry has been developed taking into account the preservation of the environment and this activity has become lucrative for the country, protecting the natural treasures while bringing economic opportunities to the rural areas. The far attainment environmental and economic benefits of ecotourism cannot be denied. Costa Rica has been able to reach sustainable development and protect the pristine landscapes from the dangers of destructive agricultural practices.

The success of Costa Rica's tourism industry, is because "the dual goals of nature conservation and income generation are most often complementary. Nature conservation contributes to the tourism industry and tourism contributes to the national economy." (Hearne & Salinas , 2002)

The growth potential and environmental benefits of ecotourism is a positive factor for developing countries. The investment in ecotourism is a cause worth and provides progressive development for the environment and the country. Responsible tourism has also allowed to respond effectively to the growing demands of the tourism industry and enhance the cultural integrity of the local community.

The main reason for success of ecotourism in Costa Rica is the active participation of the private sector, biodiversity and the interaction between the networks of protected areas. International and national NGOs, local businesses, indigenous and government organizations also play an important role in the accomplishment of ecotourism programs.

According to IUCN Costa Rica has become an important tourist destination largely on the basis of its excellent park system. Manuel Antonio National Park and the Monteverde Cloud Forest are considered as models for ecotourism and sustainable development. These parks provide critical habitat for many plant and animal species. The cloud forest has extremely diverse flora and fauna (over 100 species of mammals, 2,500 plant species over 400 bird species and over 120 reptile and amphibian species). Tourism was at first developed by a population of about 5,000 Quakers (Christian Community) living in the area. Tourist developments involved the local population who had an interest in the preservation of the forest.

In 1972 the 'Tropical Science Centre' purchased an area 320 hectares of forest, to be managed by the Quakers for tourism activities. In 1974 they only received 471 visitors but by the 1990's tourism was be an average of about 50,000 a year. The community was concerned about the growing of the tourism, therefore locals asked for the roads not to be paved, the only access they have is by dirt road 30km of bouncy track only accessible by 4x4s.

Some of the benefits that ecotourism had created in this area are: new businesses, has been established the large Santa Elena reserve (300 hectares), and many other smaller reserves have also been created, there are 400 full-time and 140 part-time jobs directly related to tourism and many more indirect jobs, the reserve actually budgets to train and educate locals and tourists about ecotourism and protection of the reserve, locals arts and crafts have been rejuvenated, the local population and private sector value the cloud forest because it creates income. So, they prefer more standing than being cut down. Etc.

In 2007 Costa Rica declared that it aims to become the first carbon neutral country by 2021 thanks to the delivered vow by the Costa Rican government, and raised the standard yet again for the global ecotourism community.

Martha Honey, co-founder of the Center for Responsible Travel and former executive director of The International Ecotourism Society. Says “Costa Rica is not all eco, but the ecotourism revolution in Costa Rica has been really profound. It … still remains the best example in the world of successful ecotourism."

In 2003 Lapa Rios was the first hotel to achieve CST’s (Certification for sustainable tourism) top ranking, level 5, it is one of 148 nationally certified sustainable hotels in the Central American country. They make energy from food scraps, the lodge supports local micro-businesses, and locals use recycled or renewable materials. “The tropical Central American destination offers examples of both the best in sustainable tourism and what could replace it”. (Henly, 2011)

Is important to review some statistics of the tourism activity in Costa Rica (see Table 1), and thus be able to observe the actual numbers of the benefits that this activity contributes to the country; the first quarter of 2013 recorded 758,835 international arrivals by all routes (air, sea and land). The 18,134 additional arrivals, representing an increase of 2.4% over the first quarter last year. The data recorded in each of the months of the quarter, are the highest figures for the past six years.

**Table 1. International arrivals to Costa Rica since 2008 to 2013**

| | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|
| January | 222723 | 222664 | 232314 | 252532 | 272718 | 278426 |
| February | 203772 | 168164 | 195919 | 210628 | 228597 | 230581 |
| March | 221551 | 179772 | 208201 | 222799 | 239386 | 249828 |
| April | 167000 | 165352 | 169853 | 184735 | 195456 | |
| May | 150525 | 130536 | 148574 | 150145 | 160185 | |
| June | 176648 | 158972 | 169183 | 176360 | 189257 | |
| July | 198672 | 180792 | 199479 | 202362 | 212044 | |
| August | 168885 | 159025 | 168837 | 161648 | 173837 | |
| September | 117348 | 113083 | 120214 | 121057 | 127632 | |
| October | 124965 | 112320 | 126661 | 129086 | 139591 | |
| November | 153539 | 145249 | 158468 | 167135 | 179474 | |
| December | 183546 | 186650 | 202126 | 213572 | 225036 | |
| Jan - Dec | 2089174 | 1922579 | 2099829 | 2192059 | 2343213 | 758835 |

Source: 1. Costa Rican Tourism Institute

Among the key indicators for tourism are the average expenditure and average stay per person, in table 2 the values of these indicators are shown; from 2006 to 2012 for non-resident tourists who visited Costa Rica. To get the average expenditure per person recorded expenditure data in various areas such as food, lodging, transportation to the destination, shopping, entertainment and more.

**Table 2. Average expenditure per person and stay in Costa Rica for non-resident tourists**

| | AEPP (in dollars $) | Average stay (in nights) |
|---|---|---|
| **2006** | 1256,7 | 12 |
| **2007** | 1345,5 | 12 |
| **2008** | 1407,9 | 11,1 |
| **2009** | 1244 | 11,9 |
| **2010** | 1228,4 | 10,6 |
| **2011** | 1302,8 | 11 |
| **2012** | 1252,2 | 11,6 |

Source: 2. Costa Rican Tourism Institute

It is noteworthy that these data were taken from the informative newsletter tourism figures from the Institute of Costa Rican tourism.

Costa Rica has become a benchmark for ecotourism, for that reason besides being a country very visited, has been the basis of many case studies to study tourism, ecotourism, both its positive and negative impacts, in addition to set policy management protected areas. Some of the most relevant investigations carried out are: International Ecotourism and the Valuation of Tropical Rainforests in Costa Rica (Menkhaus & Lober, 1996), Ecotourism Demand and Differential Pricing of National Park Access in Costa Rica (Chase, Lee, Schulze , & Anderson, 1998), The use of choice experiments in the analysis of tourist preferences for ecotourism development in Costa Rica (Hearne & Salinas , 2002), Tourist Expansion and Development of Rural Communities: The Case of Monteverde, Costa Rica (Moragrega Martín, 2004).

Another clear example of ecotourism destination is Brazil, this country is considered the first among the 20 megadiverse countries of the world, home to more than 70% of the planet's biodiversity, there are a total 8.5 million km2. Of a country with a variety of natural parks, biosphere reserves and environmental preservation areas, including the Iguaçu National Park covers an area of 220,000 hectares, which has a waterfall of the same name, the Park "Chapada dos Veadeiros" is the habitat of endangered species such as pampas deer, deer

Pantanal the jaguar and maned wolf, among others, the National Park of the “Chapada Diamantina”, the “Lençois Maranhenses National Park” is considered one of the natural wonders not only in Brazil and the world; dune formations reveals breathtaking landscapes, countless lakes with blue and green water that contrast with the white sand dunes. Besides there are six UNESCO world heritage sites in Brazil, Salvador de Bahia, Ouro Preto, Rio de Janeiro – Carioca landscapes between the mountain and the sea, Iguaçu Falls, Fernando de Noronha and Atol das Rocas, and Serra da Capivara National Park.

Brazil is a bird paradise, has 1750 species and 200 endemic species. Brazil has the largest number of endemic bird species in South America and the third largest number of bird species in the world. Throughout the Brazilian territory you can find the main concentrations of wild birds. In the southwest region are the Iguazu Falls; to the east is the Serra do Mar, with its Atlantic Forest, home to over 160 species of endemic birds. In the central region, southwest of the country is the Pantanal, which is the area of swamps world's largest fresh water with a rich fauna, particularly with a great diversity of birds. In the northern region of Brazil is the Amazon rainforest, which develops around the Amazon River and contains 20% of freshwater in the world, hosting a huge number of bird species, some of them not yet discovered.

Whale watching is another activity that can be performed in Brazil, have a program and legislation to whale watching in Brazil, and this has become a sustainable tourism, and that thousands of tourists reach its shores each year to perform this activity. One of the modalities of ecotourism that has grown over the years is speleotourism or exploring caves and caverns, and being Brazil a country with 4,500 caves, of which 53 are able to receive tourists has gained space in this activity, most of the caves are located within national parks.

Ecotourism in Joao Pessoa is a great way to enjoy this city, in addition to its beautiful beaches and cultural attractions that this small city in Brazil, there is here a project to preserve the manatee or peixe-boi as it known in Brazil, which is one of the species that live in rivers and is most endangered, this project is called Peixe Boi, here a nature reserve for the preservation and management of the manatee was built, is an area of environmental protection.

In the Amazon rainforest ecotourism is an activity that contributes both to the awareness of travelers and the communities, in addition to income generated by this activity helps to preserve this heritage. In the jungle not only can enjoy nature, you can also find lots of aboriginal tribes in Brazil, these tribes have managed to remain completely isolated, that is why their cultural heritage remains intact, ecotourists have a unique experience when they participate in this activity. Inside the rainforest you have several options to visit, from hiking for a day, short stays in shelters, long stays in rustic lodges or camping in the jungle; all this while respecting the environment and cultural ethnic groups that are living in the jungle.

Speaking of Brazil cannot leave out Curitiba, which is considered the greenest city in Brazil, 52 square meters of green area per inhabitant, is well above the minimum of 16 square meters per inhabitant recommended by the United Nations. Curitiba has several programs that strengthen environmental awareness environmental conservation reference to environmental policies, they are necessary to generate a "sustainable development".

In Brazil is growing faster the ecotourism than the common tourism. This is due to the interest that tour operators have put in activities that do not degrade the environment. This

has earned its election as best destination for adventure tourism, by the National Geographic, twice in 2006 and in 2009.

Brazil has won more awards for its sustainable tourism practices, such as the Cristalino Jungle Lodge that is a destination in the Amazon for ecotourists, that is located in the middle of a 28,167 acre private reserve, and it combines unique experiences, sustainability and comfort. It was selected as one of the "25 Best Eco lodges 2013" by National Geographic Traveler magazine and also was the winner of the World Savers Award, presented by Condé Nast Traveler in 2008, and was selected as one of the best hotels in Brazil by National Geographic Traveler in 2011.

In Brazil there is also the association of " Hoteles Roteiros de Charme, which includes 62 hotels, inns and ecological refuges in 16 states.

> Since 1999 its Code of Ethics and Environmental Conduct was adopted, recognized nationally and internationally, developed in close cooperation with the Tourism Program, based in Paris, of UNEP (United Nations Environment Programme), UN environment agency, with whom the Association has formal cooperation agreement since 2003. Is an Affiliate Members of the World Tourism Organization (Roteiros de Charme, 1999)

This association proposed educational activities, promotes environmental awareness among employees, customers and the local community, and supports local initiatives, such as government and civil society actors. All these efforts aligned in the quest for sustainable tourism and development in the communities in which they operate their associated facilities.

The International Ecotourism Society support a business model chosen by local communities, is the case of Prainha do Canto Verde, is a small fishing village in Ceará, it is located in the northeast of Brazil. In this community are 200 families, they offer a variety of activities such as: inns, eco-walks, boat excursions, cultural immersion, artisan fishing, community activities, handicrafts, music, theatre, workshops, cooking, etc. every year they received approximately 1000 tourists, and this activity supports to improve the quality of life for the local people. A research that the TIES realized in this place shows that the community earn about 15 – 20% of their total revenue for ecotourism. This initiative helps the community to defend their land, because with the ecotourism they can protect it against overdevelopment, disorderly mining and the deforestation.

Currently, in many countries ecotourism represents a new niche of tourism market, constituting itself in a chance to offer a new product alongside the traditional tourism, and Brazil has not been the exception, over the years, international visits have been increasing as shown in table 3:

**Table 3. Number of arrivals of nonresidents to Brazil**

| Year | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|
| **Number of arrivals** | 5,050.000 | 4,802.217 | 5,161.379 | 5,433.354 | 5,676.843 | 5,813.342 |

Source: 3. Yearbook of tourism activities 2009 - 2014 UNWTO

In South America in 2013 Brazil has a market share of 28%, representing the highest revenue in the region (see table 4), in the previous years has reported the following values:

**Table 4. Revenue of Brazil international tourism**

| Year | 2010 | 2011 | 2012 |
|---|---|---|---|
| **International tourism revenues (USA Dollars $)** | 5,702.000 | 6,555.000 | 6,645.000 |

Source: 4. Tourism in the Americas. UNWTO 2013

These data establish that the tourism industry in Brazil has been very important because they generate a considerable amount of revenue.

Since Brazil's biodiversity and recognition has gained as an ecotourism destination and adventure, have conducted several studies to analyze these activities and their impacts, levels of conservation, management of areas and parks etc., to mention some: "An evaluation of Ecotourism in Amazonas, Brazil" (Wallace & Pierce, 1996), "Ecotourism and Conservation: Two Cases from Brazil and Peru" (Stronza & Pêgas , 2008), "(Eco) turismo en unidades de conservación en Brasil: El caso de la Sierra de Itabaiana-SE (Menezes, 2005), "Fear and Adventure Tourism in Brazil" (Carnicelli-Filho, Schwartz, & Tahara , 2010).

Costa Rica and Brazil are an example of that the tourism contributes to improve the quality of life of a country, and that the ecotourism has gained importance over the years, due to the tendency for the conservation and preservation of environment has been increasing at present, constituting a motivation for when choosing and planning a trip.

In Europe there are also important ecotourism experiences, such as Greece that is an example of a country referent of biodiversity and conservation.

Greece is a wonderful ecotourism destination with over 300 Blue Flag labeled beaches, ancient ruins, traditional architecture, and gorgeous vineyards. The coastline is approximately 16,000km, 7,500 km belong to the islands in the Greek archipelago, and high mountain ranges, and Greece is one of the most biodiverse countries in Europe. 50,000 species of animals live in Greece. Approximately 22% of its plants and 25% of its animals are endemic, about 700 species of animals and over 900 species of plants are protected due to their uncommonness and the essential role they play in the natural environment; the Mediterranean Monk Seal is one of the most endangered species on the planet, so far Greece is home to almost half of the world's population. There are also groups of traditional peoples, like the Vlachs and the Sarakatsani.

Today ecotourism is a very popular option in Greece and the government gives its importance as this type of tourism has helped to spread the life of peoples and traditional rural towns. So it has huge swaths of land designated as new national park areas like, Alonnisos Marine Park, Olympus, Pindus, Vikos-Aoös, and Zakynthos Marine Park, and have even adopted new laws to protect these lands and has also placed emphasis on volcanoes, gorges, caves and such sites.

The city of Crete offers the possibility to know the island of Milia, a green area where there is not electricity, the water is provide by the natural springs, and there are organic farms, and

the island of Zakynthos or Zante, one of the Ionian islands that is well known for the Caretta sea turtles that come to its waters in summer to breed and lay their eggs on the white sand beaches of the Bay of Laganas.

The Greek National Tourism Organization says that:

> The tourist has the opportunity- to wander around aesthetic forests or explore national parks that are not only in the mountainous hinterlands of the mainland, but also on certain islands or near rivers and lakes, to enjoy the wonderful monuments of nature, such as gorges, caves and waterfalls, to observe and admire rare bird species that are nesting or seeking refuge in coastal ecosystems and wetlands, to study the highly diverse floral life of the Greek countryside to visit the unique sea parks which provide shelter to two protected species, the Mediterranean Monk seal (Monachus monachus) and the sea turtle (Caretta caretta), to participate in extreme sports (canoe-kayak, rafting, monoraft, hydrospeed), to find accommodation in standard agrotourist units in various regions of the country that afford visitors the opportunity to become familiar with local architecture, cultural and gastronomic tradition, as well as products, farming activities and the daily life of the local inhabitants.

In 2013 according UNWTO Tourism Highlights the growth in absolute terms was led by Southern and Mediterranean Europe, which reported some 11 million more international arrivals (+6%) and Greece recorded a robust growth (+16%). And the data of the Border Survey conducted by the Bank of Greece, during the period January-June 2014 arrivals of non-residents from abroad increased by 15.6% compared with the same period in January-June 2013

The importance of ecotourism has transcended to the scientific field, there have been several studies on this phenomenon and how it affects society, the environment and the economy of a place. The ecotourism literature is concentrated on ecological impacts, conservation, biodiversity, community ecotourism, rural developing, and policy analysis among others. In the study "Twenty years on: The state of contemporary ecotourism research" (Weaver & Lawton, 2007) mentions:

> When the term 'ecotourism' (or sometimes 'eco-tourism') first began to appear regularly in the English language academic literature in the late 1980s, no one could have predicted the prominent position that this then obscure niche product would come to occupy 20 years later within the tourism sector and more specifically as a topic of investigation within the field of tourism studies.

That was the thinking of the authors of this article, and now eight years later is may show that has grown even more the interest in studying ecotourism as a promising activity, both for those who live it, and for those who enjoy it.

The ecotourism has shown to be a strong force in the field of ecological restoration that`s what (Blangy & Mehta, 2006) affirms, other researchers says that ecotourism is a vehicle to generate economic growth that is compatible with sustainable natural resource use (Chase, Lee, Schulze , & Anderson, 1998), also the ecotourism contribute directly with its economic benefits to the conservation of some species of animals (Lindsey, Alexander, T. du Toit, & Mills, 2005) and as well others academics says that the majority of tourists and tour operators are in favor of ecotourism activities that might benefit local rural communities (Gurung & Seeland, 2008).

Among the methodologies most used concerning to the economy and ecotourism are contingent valuation, (Chen & C.Y., 2012), (Peng-Wei & Jing-Bo , 2012) cost and benefit analysis (Gossling, 1999), travel cost model (Menkhaus & Lober, 1996), contingent ranking (Bahrain Rawi, 2012), and discrete choice models.

The choice experiments are a useful tool in the analyses of tourist preferences in relation to a specific place or area, and have more direct links with economic theory (Hearne & Salinas , 2002). The choice experiment is implemented as a stated preference technique that may be suitable for the valuation of ecosystem services (García Llorente , Martín López, Nunes, Castro, & Montes, 2012), also, through the choice experiments the tourist preferences can be analyzed in the development of new tourism sites or in enhancing existing ones in developing countries (Chaminuka , Groeneveld, Selomane, & van Ierland , 2012). The estimation of discrete choice models is required in order to analyze individual preferences.

The aim of this work is to contribute to this body of knowledge by analyzing the demand for ecotourism products in Ecuador's southeastern region, province of Zamora Chinchipe, using data obtained from surveys conducted during the period August-September 2014, which provide information about the preferences of visitors to the area, through discrete choice experiments.

The specific objectives are: i) to make a descriptive analysis of this market and to study the visitor's profile, ii) to analyze the factors that determine demand as well as their relative importance; and iii) to determine the willingness to pay for ecotourism products.

To achieve the above objectives, different discrete choice models will be estimated in order to determine visitors' preferences using data obtained from an efficient choice experiment.

The rest of this thesis is organized as follows. Chapter 2 highlights the importance of ecotourism product development in Ecuador and in the province of Zamora Chinchipe, where the case study is conducted. The demand analysis is presented in chapter 3. In chapter 4, the willingness to pay for ecotourism products are obtained, and finally section 5 concludes.

## 2. THE IMPORTANCE OF ECOTOURISM IN ECUADOR

The increasing orientation of tourists to visit natural areas is essentially based on the search for new experiences, in their desire to be with nature, as well as a growing concern about the situation and problems of environmental sensitivity.

Ecotourism has boomed in recent years, and among countries that have become known as good destinations for this activity are the countries of South America, whose main attractions are based on nature, indigenous culture and history, as stated by the TIES (The International Ecotourism Society , 2015):

> "We work with hotels and tour operators in Argentina, Bolivia, Brazil, Chile, Costa Rica, Ecuador and Peru who make conservation, sustainability and community development a priority. Because we work directly with locally owned companies who employ the people who live there, the money spent by our clients stays within the community. Our providers are involved in reforestation projects, conservation initiatives and low-ecological footprint programs like incorporating recycling, biodegradable cleaning and bath products and low to no energy devices to power their day-to-day operations."

Ecuador has the largest animal and plant diversity in the world, 10% of all species of plants on earth are concentrated in an area that represents only 2% of the total surface of the planet. Only in Amazon region exists around 8200 species, and identified 2725 species of orchids. Approximately 3,800 vertebrate species, 320 species of mammals, 350 species of reptiles, 375 amphibians, 800 species of freshwater fishes, 450 species of saltwater fish and 1550 species of birds have been documented in Ecuador. Collect 18% of all species in the world, nearly 15% of endemic species in the world are in the mountains, the coast and the Amazon, also is home to more than a million species of insects. Of the twelve key biodiversity areas identified by the naturalist Norman Myers, three are in the continental Ecuador. Ecuador's 2008 constitution was the first in the world to legally recognize the Rights of Nature.

National parks, reserves and wildlife refuges are attracting more and more attention from tourists due to its educational, recreational and aesthetic values. In Ecuador 10 national parks, 14 nature reserves, a refuge for wildlife and recreation area, are considered natural heritage and protected spaces by the state. Its extension approaches 4,669,871 hectares of land and maritime surface 14,110,000, divided into four regions. Biodiversity is the main wealth of these areas, although there are different populations both in urban areas, as in rural the indigenous and peasant.

Ecotourism is beneficial for a country like Ecuador because it is a possibility to increase the attraction of protected areas, because it provides an economic reason for protecting them, besides it provides to local population economic incomes by improving their level of life and encouraging them to respect and conserve protected areas. Kutay (1992) cites environmental benefits of community participation, arguing that a close working relationship between the local community and the industry will provide the means to support conservation efforts.

As can be seen in Illustration 1, the Ecuador is divided into four regions, Coast, Highlands, Amazon and Galapagos Island or Insular region. Ecuador's Amazon region has an area of 120,000 square kilometers that is extending in the western edge of the Amazon River, and is covered by lush rainforest. The Amazonian ecosystem is considered one of the richest plant and animals habitats in the world, the variety of macro and micro habitats is amazing, since muddy lakes until endless forests.

**Illustration 1. Ecuador Map**


Source: 5. www.forosecuador.ec

The Amazon is one of the richest regions of the country, for its culture and associated knowledge, and for its biodiversity; water and mineral resources. Among its main attractions are the different protected areas and the variety of ethnic groups that exist.

The province of Zamora Chinchipe is located in the southeast of the Ecuadorian Amazon, the geographical position has generated an immeasurable and unknown biodiversity with a high degree and cultural richness, and make this area a favorable environment for the development of ecotourism activities, that have great economic importance to constitute a mechanism of growth. Tourism is a possible alternative to exit the postponement and enter as protagonists in equal conditions. This area has a vast natural and archaeological heritage, because it has a range of possibilities that can be visited for different activities such as: archeology, adventure, culinary, agrotourism, beach, community, health, cultural, bird watching, ecotourism, etc.

It is considered necessary and urgent to begin to define development alternatives based in the enormous richness and diversity of the natural resources on which human capital have a leading role in their own development, with participatory and ongoing activities in which the cultural and environmental revaluation are the main characteristics of the area, meanwhile is integrating communities in a collaborative and inclusive framework.

The identity of different ethnic groups existing in the province is being lost, the main causes are acculturation, racism, and displacement of native centers. Ecotourism is a means to perform the rescue and preservation of indigenous culture, including knowledge, biodiverse resources and techniques used by native peoples and nationalities, in order to have a population with ethical, moral, identity values and high esteem.

### *2.1 Development of ecotourism products in the South Eastern region of Ecuador. Research background.*

In the year 2013 the Universidad Técnica Particular de Loja developed a project "Identification and enhancement of an ecotourism route in the cantons Zamora, Centinela Del Condor, Yantzaza and Yacuambi in the province of Zamora Chinchipe"

Is important to take into account that these cantons are located in the area of influence of large-scale mining projects, hence the need to consider as priorities in the project. Additionally, the circuit is part of the conservation initiative called Connectivity Corridor Podocarpus - Yacuambi which is being developed by the autonomous government parish of the cantons involved.

The objectives of this project were:

- Diagnose and characterize the ecotourism potential of natural, cultural resources and physiography of the area.
- Analyze existing tourism infrastructure.
- Generate information for the planning of productive and environmentally sustainable tourism projects.
- To value an ecotourism route in the north of the province of Zamora Chinchipe to contribute to economic development and conservation of the natural capital of the province.
- Be a means to integrate the communities as major players in the economic development of the canton, identifying proposals that energize the content of the route to the target market is broader.
- Affirm and strengthen national identity, different identities, multinationality and multiculturalism.
- Design strategies to promote and disseminate the circuit.

The methodology that was used was divided in five stages: In the first stage for an information base on tourism resources possessed by each canton semi-structured interviews with opinion leaders and authorities in the area investigated were performed. Then the eco touristic vocation of the area was characterized by identifying the natural, cultural, monumental and other resources which can be exploited in a tourism way. The methodology for inventory attractions proposed by the Ministry of Tourism was used, this process orderly records the physical, biological and cultural factors that have attractive. Also in this stage the maximum load capacity of an ecotourism site of the route was determined.

The second stage consisted in diagnose the currently infrastructure that exist in the area, a compilation of data from secondary sources such as registers, municipalities and various organizations was performed, and then an in-situ contrasting was done touring the cantons to verify the information collected.

In the third stage productive and environmentally sustainable tourism projects were determined. The project profiles arise from a socio-economic and tourist diagnosis of cantons involved in eco tourist route, the same as was done by gathering information from secondary sources and field in which the following activities were carried out: validation of tourist inventory, classification of tourist attractions, georeferenced points considered of interest to tourism, meetings with representatives of the parishes of the cantons involved and with the

community leaders. These visits allowed to be close to the groups, associations or communities in order to identify with them development proposals. Participatory methodology with communities was then used, and SWOT analysis with the research team, allowing a complete diagnosis of the attractions of the area and to identify precisely those that make up the route.

The design of the route was done in the fourth stage, based on the inventory of tourism resources, availability, characteristics and quality of existing infrastructure, such as hosting services, food and beverages and guide tours, like it was taken into account the connectivity that exist in the area.

And in the fifth stage promotion and dissemination strategies of the route were designed, by creating promotional material as a printed and digital brochure route, accompanied by a reportage video of the two routes designed.

The results of this project were:

- Inventory of tourist attractions and updated cadastre of the area.
- Identified two proposals of potential projects in the area.
- Ecotourism route of the southern Amazon region of Ecuador.
    - — Mysticism. - Cultural Route Composed of 8 attractions, 5 cultural events category and 3 natural sites.
    - — Agro tourist and cultural route. - Composed of 7 attractions ranging cultural events and one natural site category.

Due to the acceptance and results that had this project, in 2014 was decided to continue the activities that were developing in the area, and thus continue working for the construction of ecotourism products that enable development for communities identified. The main objective for the second stage of this project is generate community development in the cantons Zamora and Yacuambi since the valuation of ecotourism as a source of income and a factor of improvement quality of life.

The objectives of this project were:

- Exploit in a sustainable way the natural and cultural attractions in Napurak community and the San Carlos de las Minas parish that are described in the project 2013, "Identification and valuation of a tourist route Zamora cantons, Centinela Del Condor, Yantzaza, Yacuambi" by the Participatory groups.
- Recover and promote the ancestral knowledge of the Shuar communities.
- Understand and practice environmental interpretation by participatory groups.

A diagnosis of the strengths and weaknesses of the members of the community Napurak was conducted. After that, selection and training was held for members of the community according to their affinity with the following tourist activities: group management, tourism management, food handling, basic service techniques, environmental awareness, accounting for inflows and outflows of money trainings were conducted.

Then in participatory workshops the tourism product was designed with the community.

The results of this project were:

- Identification of the Community tourism product Napurak

- Identification of the requirements of ecotourism equipment from its socio-culture, worldview, environmental conditions and their technological, structural characteristics.
- Participatory groups identify the conservation of nature as element of sustainable development and environmental interpretation as a tool to show attractively tourism products.

Once the possibilities of exploitation of tourism products, and the main attractions of the area, were defined a demand study was conducted to analyze the preferences of visitors to the area.

## 3. DEMAND ANALYSIS

### *3.1 The choice experiment*

Discrete choice experiments are created with the purpose of analyzing the independent effect of different attributes upon certain observed outcomes or choices (Rose & Bliemer, 2004). A typical choice experiment consists in a sample of individuals that complete different hypothetical choice tasks according to some behavioral rule. In many experimental settings the utility maximization is considered, therefore the task consist in choosing the alternative with the highest utility, and alternatives are defined in terms of the different values, or levels, that the attributes can take.

In our case, the experiment consisted in the creation of twelve choice scenarios defined by two hypothetical ecotourism products each. Thus, the alternatives were defined in terms of the following attributes: price, hiking, participation in rituals, tasting local cuisine, visit to crafts center and experience of community life. The attributes and levels considered for this purpose are presented in Table 5. As can be seen, all attributes were defined at three levels with the exception of price that had six. For the selection of both, attributes and levels, the attractions identified in the area of Zamora-Chinchipe during the preliminary phase of the project were considered.

To obtain the combination of attribute levels defining the choice situations, an efficient design using the softwage N-gene (Choicemetrics, 2009). In order to obtain realistic choice scenarios, some constraints were added to the design. Thus, the ecotourism products showed to the visitors consisted in two or three attractions each. An example of one choice scenario is presented in Table 6, where the individual had to choose among package A, package B or none of the two.

Also, to make the scenarios more credible, some pictures were showed to the respondents to help them to better understand the characteristics of the different products. These pictures are presented in Table 7.

The creation of efficient designs is focused on the minimization of the sample size required to obtain asymptotically efficient and reliable parameter estimates; or alternatively, minimize the standard error of the parameter estimates for a fixed number of choice observations. Our choice experiment was based on the minimization of the D-error. For this, we have to provide parameter's prior information and the type of model to be estimated.

In this regard, our design was generated for a multinomial logit model capable to account for non-linear effects in qualitative attributes. Parameters' priors were chosen according to some qualitative information in order to obtain reasonable willingness to pay figures for potential visitors of the area.

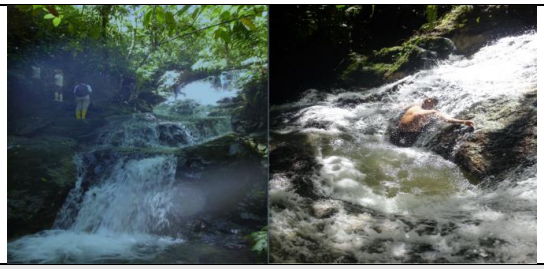
**Table 5. Attributes and levels.**

| ATTRIBUTES | LEVELS | DESCRIPTION |
|---|---|---|
| ***Cost of activity ($)*** | 1 | 35 |
| | 2 | 40 |
| | 3 | 45 |
| | 4 | 70 |
| | 5 | 75 |
| | 6 | 85 |
| ***Hiking*** (waterfalls, scenic beauty, flora, fauna) | 1 | Not included |
| | 2 | 2 hour scenic route.<br>✓ You will see one waterfall, primary forest and may take a bath in the crystal clear waters flowing down from the mountains Chimbutza.<br>✓ The difficulty level is medium and you will walk tour 2 ½ km.<br>✓ Includes native guide and lunch (water, chocolate, fruit and biscuits) |
| | 3 | 4 hour scenic route.<br>✓ You will use Tarabita (funicular) to cross Yacuambi River.<br>✓ You will observe endemic flora and fauna and enjoy a panoramic view of the area.<br>✓ The difficulty level is high and you will walk 5km.<br>✓ It includes native guide, lunch and dinner (water, chocolate, fruit and biscuits) |
| ***Participation in rituals*** | 1 | Not included |
| | 2 | Dancing |
| | 3 | Dancing+ritual in cascade+sanation |
| ***Tasting local cuisine*** | 1 | Not included |
| | 2 | Tasting a basic menu:<br>✓ Ayampaco + Chicha + membrillo juice |
| | 3 | Tasting a full menu:<br>✓ Ayampaco + Palmito broth with creole chicken + Chicha + membrillo juice |
| ***Visit to crafts center*** | 1 | Not included |
| | 2 | View and/or purchase |
| | 3 | View and / or purchase and participate in the development of local crafts |
| ***Experience of community life*** | 1 | Not included |
| | 2 | 1 day performing activities related to:<br>✓ Agriculture / livestock / gastronomy, includes food (lunch and dinner in the afternoon). |
| | 3 | 2 days performing activities related to:<br>✓ Agriculture / livestock / gastronomy / psiculture and river fishing / poultry / hunting (15 USD), includes food and lodging |

**Table 6. Example of choice scenario.**

| Attributes | Description Package A | Description Package B |
|---|---|---|
| **Cost** | 40 | 75 |
| **Hiking** | **LEVEL 3**<br>4 hour scenic route.<br>✓ The difficulty level is high and you will walk 5km. | Not included |
| **Rituals** | Not included | **LEVEL 3**<br>Dancing / Ritual in cascade / Sanation |
| **Gastronomy** | **LEVEL 3**<br>Full menu | Not included |
| **Crafts** | Not included | **LEVEL 3**<br>View and / or purchase and participate in the development of local crafts |
| **Community life** | Not included | **LEVEL 2**<br>1 day |
| **I choose ① Package A ② Package B ③ None of the two** | | |
| **Reason in the case of choose ③** | | |

## Table 7. Graphical information

| ***Hiking*** | |
|---|---|
| ***Level 2*** | ***Level 3*** |
|  |  |
| ***Participation in rituals*** | |
| ***Level 2*** | ***Level 3*** |
|  |  |
| ***Tasting local cuisine*** | |
| ***Level 2*** | ***Level 3*** |
|  |  |
| ***Visit to crafts center*** | |
| ***Level 2*** | ***Level 3*** |
|  |  |
| ***Experience of community life*** | |
| ***Level 2*** | ***Level 3*** |
|  |  |

### *3.2 The questionnaire and data collection*

The survey that was applied consists of five parts: the first one is about travel information, the second part is the choice experiment, the third corresponds to the environmental perception, and the fourth is concerning to ecotourism in general and the last part is about socioeconomic information.

To calculate the sample, the formula for infinite populations was used:

$$n = \frac{Z^2\, pq}{e^2}$$

$$n = \frac{(1.96)^2\ (0{,}5)(0{,}5)}{0{,}05^2}$$

$$n = 384.16$$

Where:

Z= is the confidence interval

p=choice probability

q= 1-p

e= estimation error

n= Sample size

According to the Census of population and housing 2010, of the National Institute of Statistics and Census of Ecuador, the corresponding urban populations to Loja is 170280 and for Cuenca is 329928, as can be seen in table 8.

To determine the number of surveys that had to apply in both Loja and Cuenca, the percentage of population that corresponds to each canton of the total was established and after was multiplied by the sample size, as indicated below:

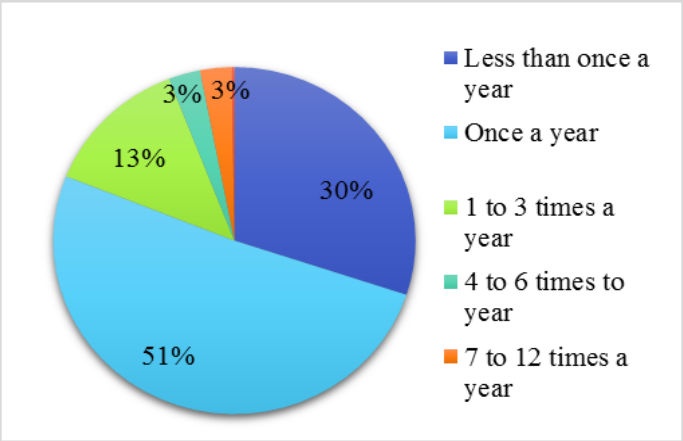
**Table 8. Surveyed population**

| | Population | Percentage | Sample size (Percentage * 384,16) |
|---|---|---|---|
| **Loja** | 170280 | 34,04 | 130,78 |
| **Cuenca** | 329928 | 65,96 | 253,38 |
| **Total** | 500208 | 100 | 384,16 |

The number of surveys conducted in each parish is distributed according to the population of each of them, and distributed in equal number of men and women at random. In total 459 surveys were carried out.

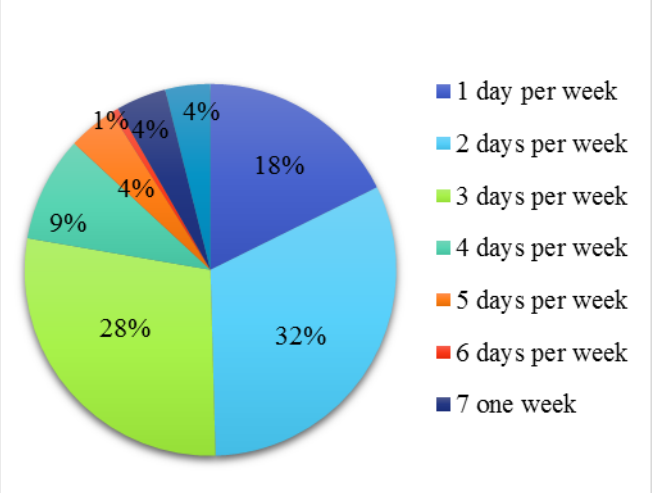
### *3.3 Descriptive analysis of the sample*

The first part of the survey was intended to obtain information about the variables related to the trip as shown below. The first one relates to the frequency of travel, and results demonstrate that 51% of respondents travel once a year, and 30% make less than one trip per year (see Graphic 1).



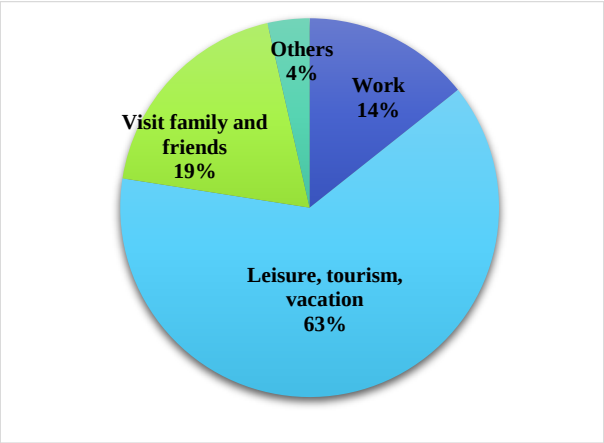

**Graphic 1. Trip Frequency**

Regarding the average stay, one two and three days were the results with highest percentage with 18%, 32% and 28% respectively (Graphic 2).




**Graphic 2. Day stay**

Leisure, tourism and vacation, is the trip purpose why people travel to Zamora Chinchipe for 63% of the respondents. Within the category others, the reasons were grouped as: studies, research, health and procedures (Graphic 3).

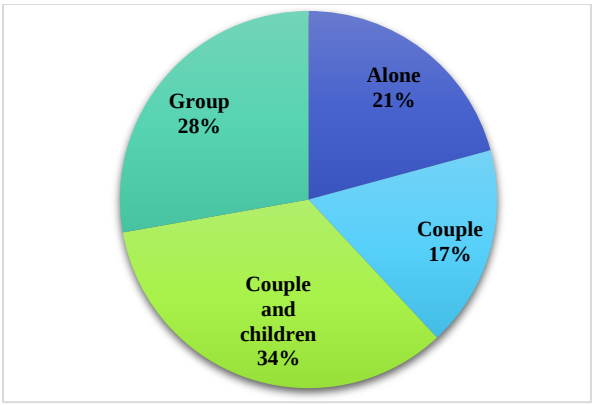



**Graphic 3. Purpose of the travel**

Of the 459 respondents, 51 traveled to Zamora Chinchipe because it was part of a tour package, and the 17.65% of these people paid $100, and 11.76% paid $150.

During the trip the activities that the most of the respondents carried out or (will carry) in Zamora Chinchipe were visit to thermal spas (19.29%), taste the typical food of the area (16.16%) and hiking in natural sites (11.47%)

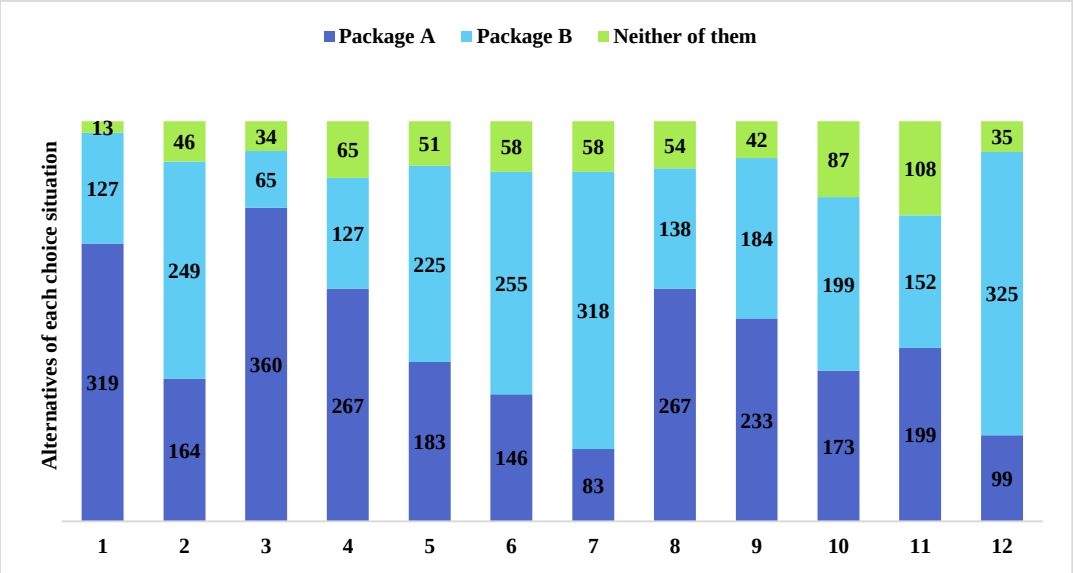
As can be seen in Graphic 4, most of the individuals prefer to travel in family or in group, with percentage equal to 34% and 28%, respectively.




**Graphic 4. Composition of the trip**

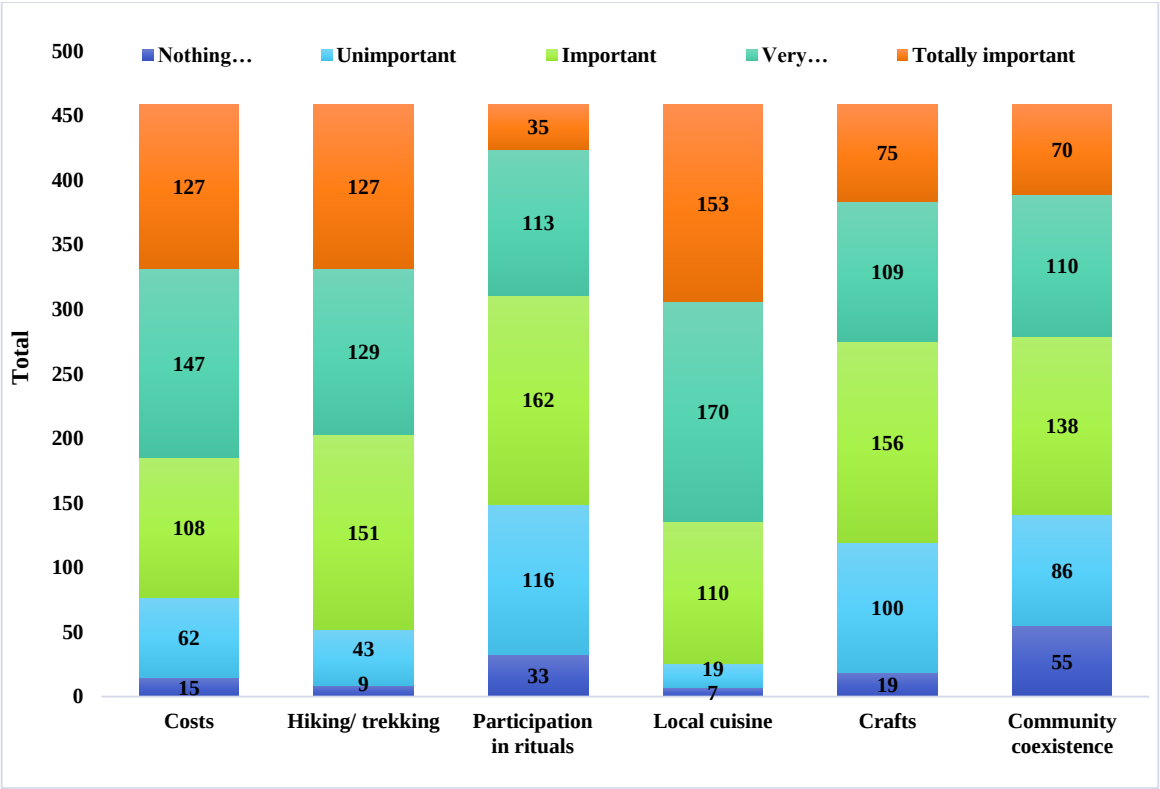
The second part of the survey was dedicated to the choice experiment were responses in the 12 different scenarios were collected. The distribution of choices across the scenarios is presented in the Graphic 5. in the responses a In the first scenario the option A was the one that obtained the highest percentage of choice as well as on tasks 3, 4, 8, 9 and 11. In

scenarios 2, 5, 6, 7, 10 and 12 the option with the highest percentage was B. It is also important to highlight that scenario 11 exhibit the highest proportion of no choice responses, notwithstanding the number of individuals who did not choose any of the packages offered was relatively low in most of the scenarios. This means that the characteristics of the ecotourism products offered to individuals resulted attractive to them.



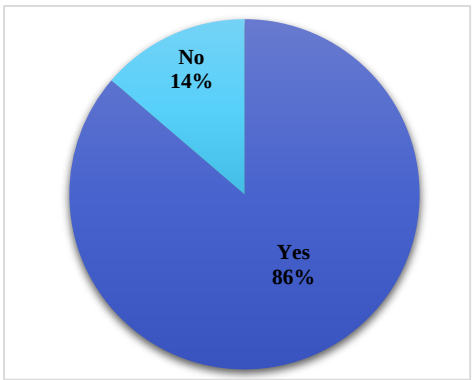

**Graphic 5. Choice situations**

After completing the choice experiment, respondents were asked to rate the level of importance that each attribute had in their choices. In this regard, cost, hiking, and tasting local cuisine were the attributes that exhibit the highest level of importance. These attributes were considered very or totally important for more than 56% of the sample. In contrast, the participation in rituals, experiencing community life and visit to crafts center were rated with a low level of importance for the highest proportion of individuals in comparison with other attributes. In fact, these attributes were considered unimportant or nothing important for more than 119 individuals, approximately, 26% of the sample.



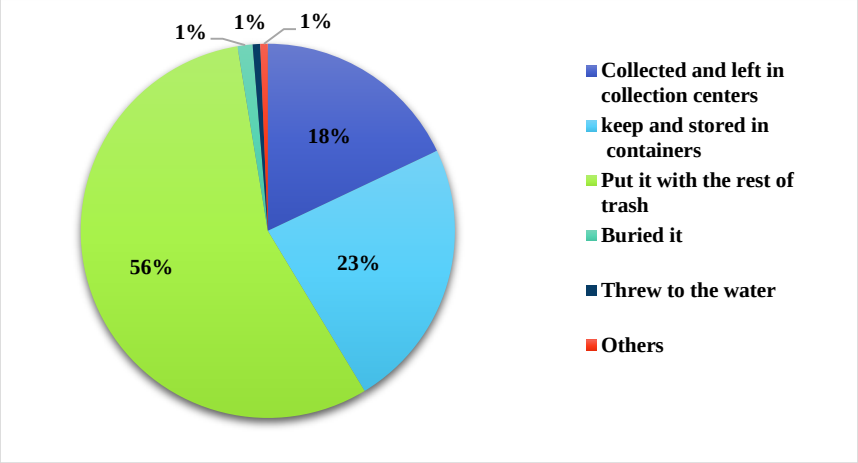

**Graphic 6. Degree of importance of the attributes**

The third part of the survey was intended to analyze respondents' attitudes towards the environment. Regarding garbage classification, the majority of the interviewed (86%) answered that they do (see Graphic 7).




**Graphic 7. Waste sorting**

However, this result contrasts with the way of disposal of batteries or stacks, where most of the people (56%) declared putting them with the rest of the trash, which is not an environmental friendly practice (see Graphic 8).

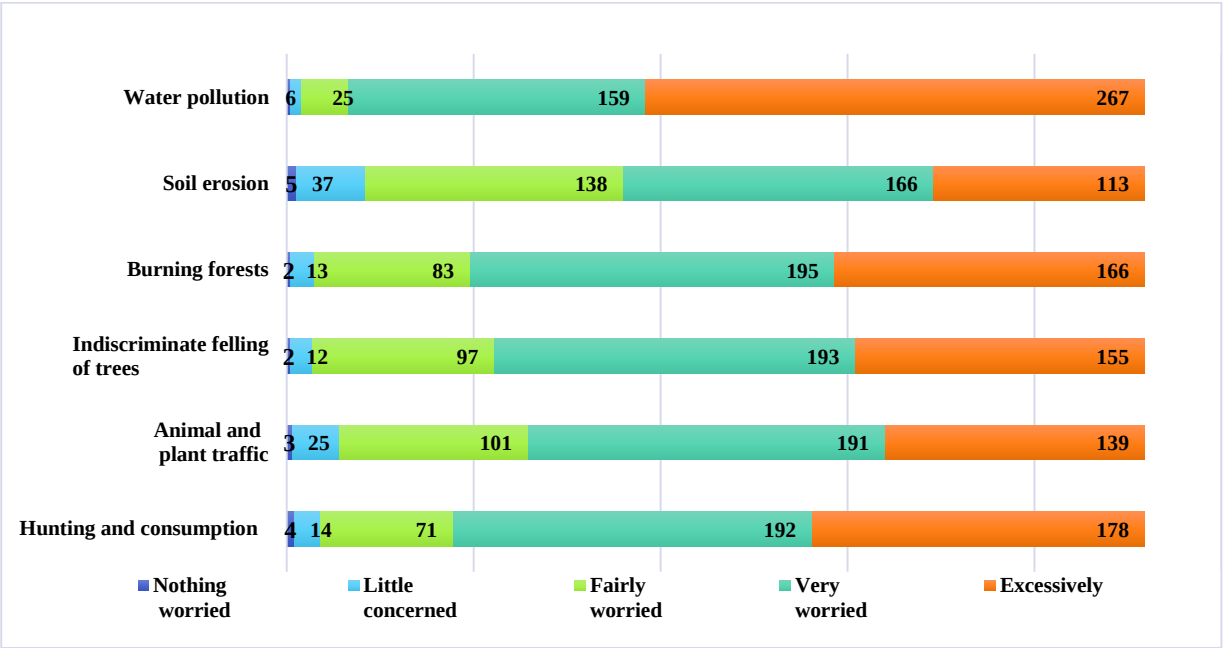



**Graphic 8. Ways of disposal batteries or stacks**

Regarding other waste, such as oil and/or grease, most of the people kept and stored it in container (56%) or left it in collection centers (14.19%).

Unplug appliances and turn the lights off are the energy saving practices more used by the individuals with 34.61% and 45.96% respectively. Also 40% of respondents when purchasing appliances rated as very important that these are of energy saving features.

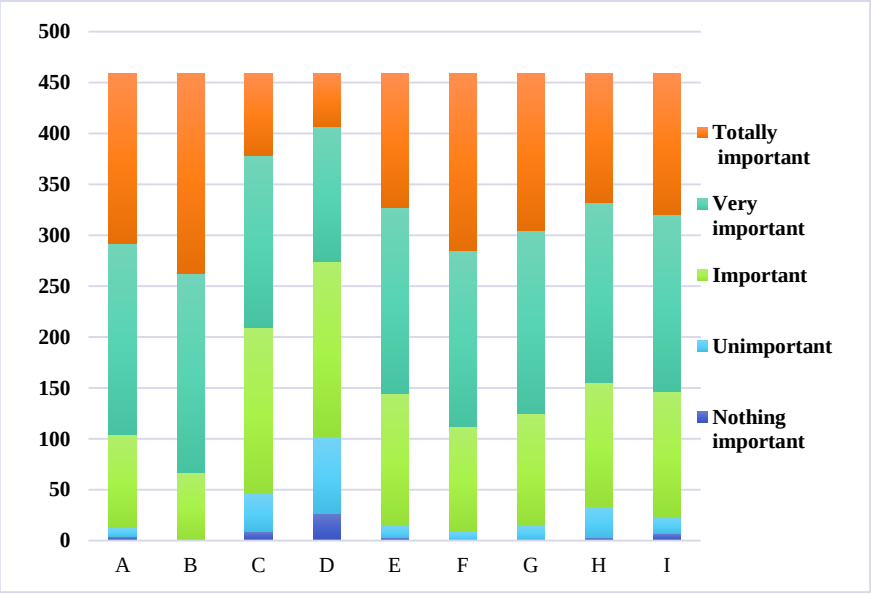
The degree of concern that respondents have in their home regarding water pollution is very high. It is worth to point out that near 60% of the individuals scored it as "Excessively", Soil erosion, burning forest and other environmental damages also exhibited a very high degrees of concern.




**Graphic 9. Level of concern**

Regarding visit preferences, individuals prefer mostly protected areas (42.65%), and ranches, hotels, hostels, etc., with ecological purposes (34.50%).

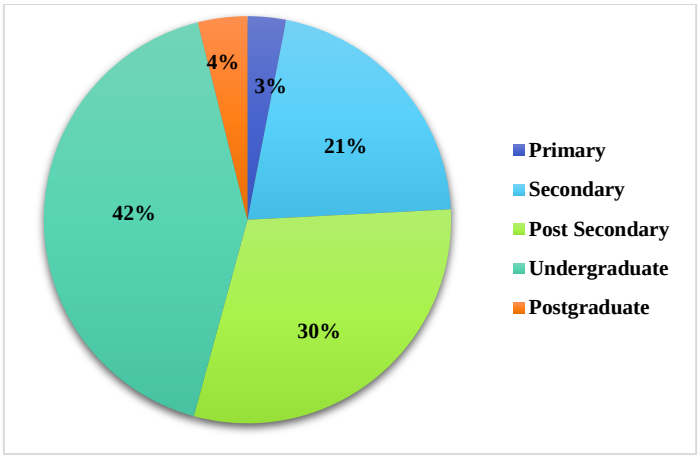
As can be extracted form results in Graphic 10, perform farming activities traditionally and with low impact (D) is important for the respondents, and is very important for them the connection between human beings and nature (A), know and share the customs and traditions of indigenous peoples (C), promote development and economic growth of the communities where ecotourism is developed (E), watch birds and other species in their natural habitat (G), discover the flora and its medicinal use (H), and recover trails and routes for ecotourism purposes (I). But is totally important the preservation of nature (B), and enjoy the grandeur of the mountains and landscape by walking nature trails (F).



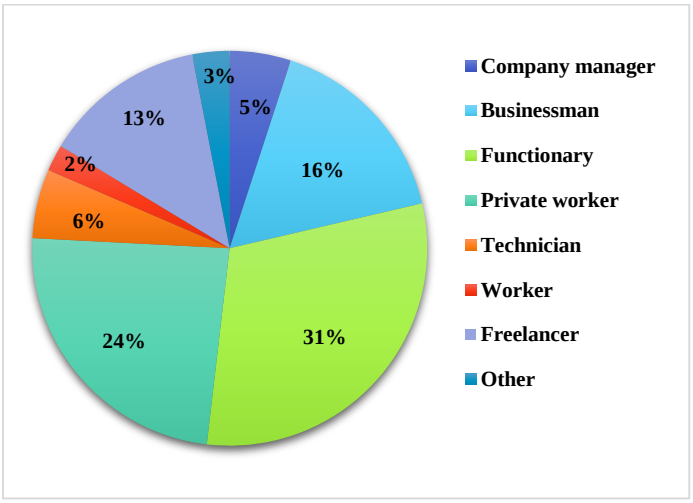

**Graphic 10. Degree of importance**

Finally, in the last part of the survey some sociodemographic information is collected. Thus, 50% of the interviewees were men, aged between 32 and 45 years with an average of 38 years.

The majority of the people have an undergraduate level of education (see Graphic 11), and regarding occupation, most of the individual were civil servants (31%) and private workers (24%), having this result a close relation with the level of education previously analyzed (Graphic 12). Finally, for 34% of the sample family income lies between 501 and 999 dollars per month, being the average income in our sample of 1184 dollars.




**Graphic 11. Level of education**




**Graphic 12. Occupation**

## *3.4 The demand model*

### 3.4.1 Theoretical framework

#### *3.4.1.1 Discrete choice theory*

Discrete choice theory (Mc Fadden , 1981) assumes that individuals consume both continuous and discrete goods, being the later represented by the choice among a set of discrete alternatives mutually exclusive. According to Lancaster (1966) postulates, the utility of the alternatives depends on the levels of the attributes that characterize them. Thus, under the utility maximization behavioral rule, the individual must choose the bundle of continuous goods and the discrete alternative that maximizes his utility, given his constraints.

As the analyst does not know, for each individual, all of the variables that are influencing the choice, neither the exact way that these influence, probabilistic choice mechanisms are required to in order to model individual choices.

#### *3.4.1.2 Random utility theory (Probabilistic choice theory)*

The random utility theory is based in that one individual always opt for the alternative with the highest utility. The utility that reports to individual *n* the alternative *j* is $U_{nj.}$ This utility is fully known by the one who makes the choice, but partially unknown for the analyst who is trying to model individual's preferences. From the economic point of view, $U_{nj}$ is a conditional indirect utility function.

In this regard, the utility has two components, the observed one, called systematic component that will depend on a number of observed attributes as well as on the socioeconomic characteristics of the individual $V_{iq}$ , and a random part, unobserved by the analyst that will be treated as a random error $E_{iq}$.

$$U_{iq} = V_{iq} + E_{iq}$$

The individual will only choose the alternative with the highest utility from all the other alternatives in the choice set. The alternative *i* is chosen, if and only if:

$$V_{iq} + E_{iq} \geq V_{jq} + E_{jq} \leftrightarrow V_{iq} - V_{jq} \geq E_{jq} - E_{iq}$$

And the analyst can only obtain the probability of choosing the alternative *i as:*

$$P_{iq} = P(E_{jq} - E_{iq} \leq V_{iq} - V_{jq}; j \neq i)$$

$$P_{iq} = P(E_{jq} \leq V_{iq} - V_{jq} + E_{iq}; j \neq i)$$

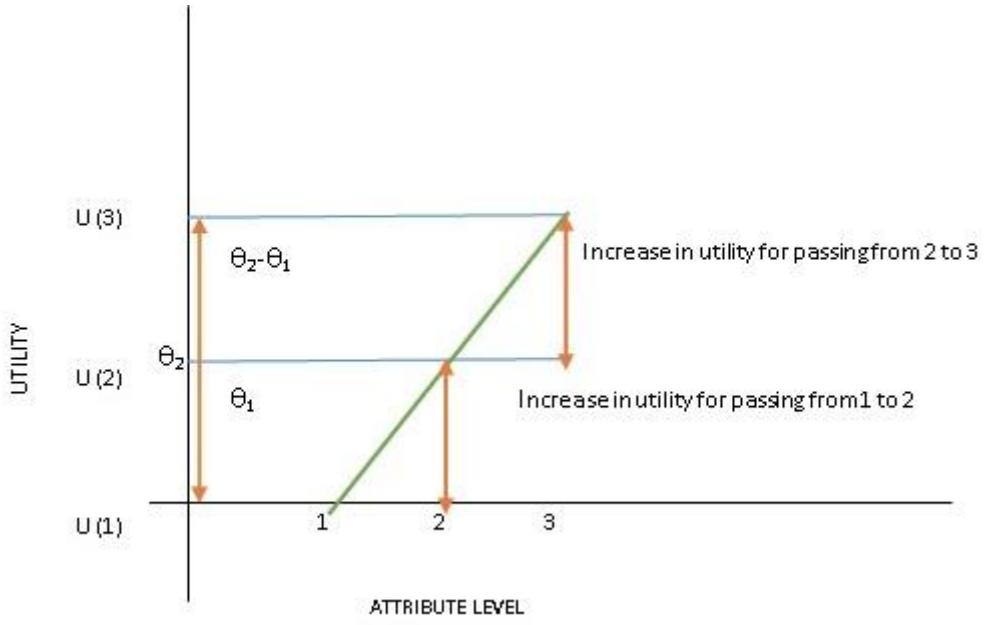
When the error is distributed identically and independently following the Gumbel distribution, the well-known multinomial logit model is obtained. Less restrictive hypotheses about the distribution of the random errors yield more flexible choice models such as those belonging to the Mixed Logit family.

### 3.4.2 Modelling preferences for ecotourism products

The modeling strategy starts by analyzing models accounting for linear and non linear effects, and eventually testing for their statistical significance.

#### *3.4.2.1 Linear effects model*

Linear effects models are based on the fact that the impact of passing from level 1 to level 2 is identical to that of passing from level 2 to level 3 for qualitative attributes (see Graphic 13).




**Graphic 13. Linear effects model**

For these models the specification of the utility is as follows:

$$U_1 = \theta_p P_1 + \theta_s S_1 + \theta_R R_1 + \theta_G G_1 + \theta_A A_1 + \theta_E E_1$$

$$U_2 = \theta_p P_2 + \theta_s S_2 + \theta_R R_2 + \theta_G G_2 + \theta_A A_2 + \theta_E E_2$$

$$U_3 = \theta_{ASC3}$$

Where P is the price of the alternative, S represents the level of hiking, R that of rituals, G that of gastronomy, A that of crafts and E that of experience of community life; and θs are the unknown parameters. As the third alternative is the do nothing option, only one alternative specific constant is specified in this alternative accounting for the status quo preference.

The estimation results are presented in the Table 9. This model corresponds to a linear effects Multinomial Logit Model with a linear-in-the-parameter utility specification. All the parameters estimates corresponding to qualitative attributes present a positive the correct sign and are significant at a confidence level higher than 95%. The cost parameter ($\theta_P$) instead presents a negative sign as expected.

**Table 9. Estimation results. Linear effects model**

| Attributes | | Estimate (t-test) |
|---|---|---|
| **Hiking (S)** | $\theta_S$ | 0.664 (17.27) |
| **Experience of community life (E)** | $\theta_E$ | 0.196 (4.85) |
| **Gastronomy (G)** | $\theta_G$ | 0.512 (11.75) |
| **Cost (P)** | $\theta_P$ | -0.0109 (-9.37) |
| **Crafts (A)** | $\theta_A$ | 0.256 (6.35) |
| **Rituals (R)** | $\theta_R$ | 0,329 (7.97) |
| $\rho^2$ | 0.165 | |
| **Adjusted** $\rho^2$ | 0.164 | |
| ***l**(0)** | -6051.156 | |
| ***l**(θ)** | -5050.605 | |
| **Observations** | 5508 | |

### *3.4.2.2 Non–linear effects model*

When the non-linear effects specification is considered, the impact on utility of passing from level 1 to level 2 is different than that of passing from level 2 to level 3 (see Graphic 14).

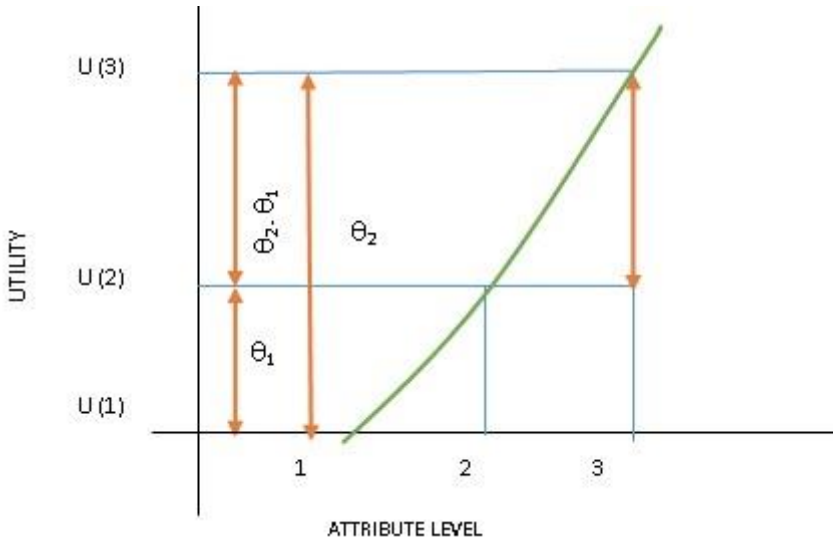
In this case, the utility specification is as follows:

$$U_1 = \theta_P P_1 + \theta_{S1} S_1^1 + \theta_{S2} S_1^2 + \theta_{R1} R_1^1 + \theta_{R2} R_1^2 + \theta_{G1} G_1^1 + \theta_{G2} G_1^2 + \theta_{A1} A_1^1 + \theta_{A2} A_1^2$$

$$U_2 = \theta_P P_2 + \theta_{S1} S_2^1 + \theta_{S2} S_2^2 + \theta_{R1} R_2^1 + \theta_{R2} R_2^2 + \theta_{G1} G_2^1 + \theta_{G2} G_2^2 + \theta_{A1} A_2^1 + \theta_{A2} A_2^2$$

$$U_3 = \theta_{ASC3}$$

Where $X^1$ is the dummy equal to 1 when the level of the attribute $X$ is 2 and 0 otherwise; and $X^2$ is the dummy equal to 1 when the level of the attribute $X$ is 3 and 0 otherwise.




**Graphic 14. Non-linear effects model**

In the Table 10 the estimation results of the nonlinear effects model are presented. Here you can find two parameters for each attribute, for example in the case of hiking we have $\theta_{S1}$ and $\theta_{S2}$. The first parameter $\theta_{S1}$ measures the impact on utility of passing from level 1 to level 2, and $\theta_{S2}$ that of passing from level 1 to level 3. Thus, according to this model, enjoying a 2 hour scenic route increases the individual's utility by 1.05 units; and enjoying a 4 hour scenic route raises the utility to 1.19 units. The difference between these two parameters is interpreted as the impact of passing from level 2 to level 3. Thus, in order to obtain consistent results, the second parameter must be higher than the first. For this model, all estimates are consistent and significant at a significance level higher than 95%, with the only exception of the first parameter of crafts. As in the former case, all parameters were estimated with the expected sign.

**Table 10. Estimation results. Nonlinear effect model**

| Attributes | | Estimate (t-test) |
|---|---|---|
| **Hiking (S)** | $\theta_{S1}$ | 1.05 (10.78) |
| | $\theta_{S2}$ | 1.19 (8.35) |
| **Experience of community life (E)** | $\theta_{E1}$ | 0.198 (2.43) |
| | $\theta_{E2}$ | 0.307 (2.01) |
| **Gastronomy (G)** | $\theta_{G1}$ | 0.780 (11.57) |
| | $\theta_{G2}$ | 0.924 (6.17) |
| **Cost (P)** | $\theta_{P}$ | -0.00872 (-4.95) |
| **Crafts (A)** | $\theta_{A1}$ | 0.219 (1.70) |
| | $\theta_{A2}$ | 0.548 (4.43) |
| **Rituals (R)** | $\theta_{R1}$ | 0.337 (3.87) |
| | $\theta_{R2}$ | 0.697 (5.03) |
| $\rho^2$ | 0.179 | |
| **Adjusted** $\rho^2$ | 0.177 | |
| ***l**(0)** | -6051.156 | |
| ***l**(θ)** | -4970.451 | |
| **Observations** | 5508 | |

In order to test for the statistical significance of the non-linear effects, we need to check whether in fact all the effects of the second model are present in all the attributes:

This is equivalent to test if the following condition is held:

$$\theta_2 = 2\theta_1;$$

$$\theta_2 - 2\theta_1 = 0$$

Or, in contrast:

$$\theta_2 - 2\theta_1 \neq 0$$

For this, we undertake a hypothesis test with the following null hypothesis:

$$H_0: \theta_2 - 2\theta_1 = 0$$

Facing the following alternative hypothesis

$$H_1: \theta_2 - 2\theta_1 \neq 0$$

The statistic used in this contrast is:

$$t = \frac{\theta_2 - 2\theta_1}{\sqrt{Var(\theta_2 - 2\theta_1)}} = \frac{\theta_2 - 2\theta_1}{\sqrt{Var(\theta_2) + 4Var(\theta_1) - 4Cov(\theta_2, \theta_1)}}$$

And the decision rule at the 95% confidence level is:

If $|t| < 1.96$ accept $H_0$ i.e. there are linear effects in the attribute.

If $|t| > 1.96$ reject $H_0$ i.e. there are not linear effects in the attribute

Results of this test are presented in Table 11

**Table 11. Results of test of no-linearity**

| **Attributes** | $H_0: \theta_2 - 2\theta_1 = 0$ | |
|---|---|---|
| | **t -test** | **Decision** |
| Hiking | -9.931 | Reject |
| Experience in community life | -0.76014 | Accept |
| Gastronomy | -5.948 | Reject |
| Crafts | 0.6829 | Accept |
| Rituals | 0.23524 | Accept |

According to the test results, nonlinear effects are only perceived for hiking and gastronomy attributes. This means that for experience in community life, crafts and rituals, the effect of passing from level 1 to level 2 is not significantly different of that of passing from level 2 to level 3. This contrast with results obtained for hiking and gastronomy where the effect of passing from level 1 (i.e. when the activity is not offered) to level 2 is substantially higher than that passing to a higher level.

### *3.4.2.3 Mixed linear non-linear effects model*

In light of results obtained in the previous section, the specification of a mixed linear non-linear effects model is suggested. Thus, the former model will be re-estimated but now incorporating the constraints given by the null hypothesis when this is accepted. The estimation results of this model are presented in the table 12.

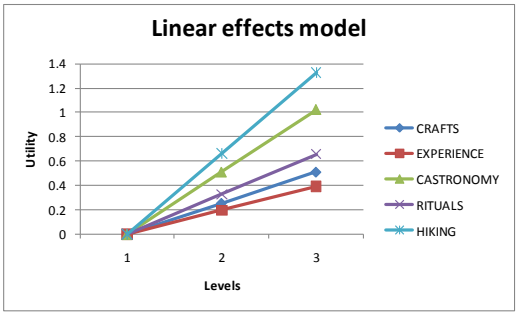
**Table 12. Estimation results. Mixed linear non-linear model.**

| **Attributes** | | **Estimate (t-test)** |
|---|---|---|
| **Hiking (S)** | $\theta_{S1}$ | 1.12 (17.97) |
| | $\theta_{S2}$ | 1.31 (15.67) |
| **Experience of community life (E)** | $\theta_{E1}$ | 0.218 (4.90) |
| | $\theta_{E2}$ | 0.435 (4.90) |
| **Gastronomy (G)** | $\theta_{G1}$ | 0.816 (14.39) |
| | $\theta_{G2}$ | 1.04 (10.35) |
| **Cost (P)** | $\theta_{P}$ | -0.00857 (-7.03) |
| **Crafts (A)** | $\theta_{A1}$ | 0.317 (7.27) |
| | $\theta_{A2}$ | 0.634 (7.27) |
| **Rituals (R)** | $\theta_{R1}$ | 0.406 (9.33) |
| | $\theta_{R2}$ | 0.811 (9.33) |
| $\rho^2$ | 0.178 | |
| **Adjusted** $\rho^2$ | 0.177 | |
| ***l**(0)** | -6051.156 | |
| ***l**(θ)** | -4971.109 | |
| **Observations** | 5508 | |

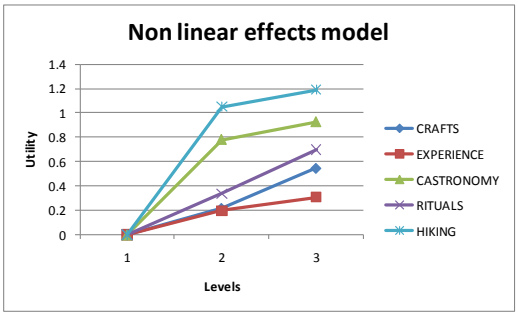
Like in the previous model, all parameters were estimated with the expected sign and all estimates are consistent and significant at a significance level higher than 95%. Given the introduction of parameter constraints, as we have pointed out, now the effect is not linear for hiking and gastronomy. Thus, In this case not offering hiking activities against offering this product at the intermediate level (level 2) increases the individual's utility by 1.12 units. On the other hand if a higher level with more hiking activities is offered, that is the move from

level 2 to level 3, the utility is increased 0.19 units, being this increment substantially lower. A similar effect is perceived for gastronomy, where offering this attribute at the intermediate level increases the utility by 0.82 units, whereas improving this attribute to the highest level increases the utility by 0.22 units.

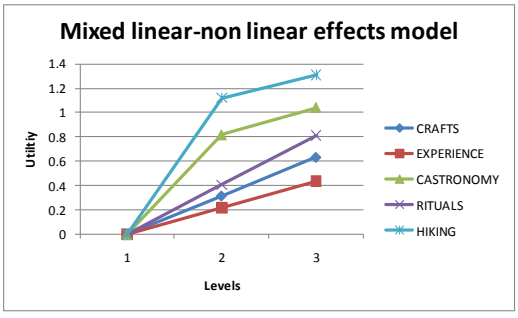
In order to compare the magnitude of the impact of the different attributes on the utility, for the three models analyzed, these effects are depicted in Graphics 15, 16 and 17.




**Graphic 15. Attributes impact. Linear effects model**




**Graphic 16. Attributes impact. Non linear effects model**




**Graphic 17. Attributes impact. Mixed linear-non linear effects model**

A common characteristic of these three models is that the attributes which produce the highest impact on the utility are those for which the nonlinear effects are proved, that is to say

hiking and gastronomy. In particular, in the case of intermediate level (level 2) the impact on the utility of these two attributes is more than twice the impact produced by other attributes when nonlinear effects are considered. In this regard, it is also important to point out that the experience of community life is the attribute producing the lowest impact for visitors of the area under analysis.

In order to use model results for the evaluation of different ecotourism policies, these impacts must be evaluated in monetary terms. For this, in the next section the willingness to pay for different ecotourism products are obtained.

## 4. WILLINGNESS TO PAY FOR ECOTOURISM PRODUCTS

Discrete choice models can be used to calculate the amount that a respondent would be willing to pay for a particular good or service. The willingness to pay (WTP) measures are express in monetary terms, the changes in the utility produced by changes in the attributes. These measures can be obtained once the utility function of the different alternatives is estimated.

The WTP for continuous variables is calculated as the ratio of the marginal utility of the attribute and the marginal utility of price as:

$$WTP = \frac{\partial U / \partial \theta}{\partial U / \partial P}$$

When the resulting value is a negative number (as in all the attributes in our case), the interpretation of the willingness to pay should be in absolute terms since the individual is willing to pay a positive amount of money to obtain improvements in the attribute. In the linear effects model, all variables are treated as continuous, thus, for example, in the case of the WTP for hiking we obtain:

$$WTP = \frac{\partial U / \partial \theta}{\partial U / \partial P} = -\frac{\theta_S}{\theta_P}$$

$$WTP = -\frac{0.664}{(-0.0109)}$$

$$WTP = 60.91743119$$

It is important to note that in this model the individual's willingness to pay for moving from level 1 to level 2 is the same as the willingness to pay for moving from level 2 to level 3 in monetary terms. The values obtained for all the attributes are seen in the Table 13.

**Table 13. Willingness to pay estimations. Linear effects model**

| ATTRIBUTES | WTP |
|---|---|
| Hiking (S) | $60.92 |
| Experience of community life (E) | $17.98 |
| Gastronomy (G) | $46.97 |
| Crafts (A) | $23.49 |
| Rituals (R) | $30.18 |

For the non-linear effects model to obtain the WTP for passing from one level to another we consider the difference in the utility in monetary term that is, divided by minus the coefficient of price, which is equal to the marginal utility of income. Thus, the WTP for passing from level 1 to level 2 is obtained as:

$$WTP_{1-2} = \frac{U^2 - U^1}{(-\theta_P)}$$

In the case of the WTP for hiking as an example, we obtain:

$$WTP_{1-2} = \frac{U^2 - U^1}{(-\theta_P)} = \frac{\theta_{S1} - 0}{(-\theta_P)} = \frac{\theta_{S1}}{(-\theta_P)}$$

$$WTP_{1-2} = \frac{1.05}{(-0.00872)} = 120.412844$$

$$WTP_{1-3} = \frac{U^3 - U^1}{(-\theta_P)} = \frac{\theta_{S2} - 0}{(-\theta_P)} = \frac{\theta_{S2}}{(-\theta_P)}$$

$$WTP_{1-3} = \frac{1.19}{(-0.00872)} = 136.467888999$$

$$WTP_{2-3} = \frac{U^3 - U^2}{(-\theta_P)} = \frac{\theta_{S2} - \theta_{S1}}{(-\theta_P)}$$

$$WTP_{2-3} = \frac{1.19 - 1.05}{(-0.00872)} = 16.05504587$$

Table 14 shows the WTP figures obtained for the nonlinear and the mixed linear nonlinear effects models.

It is worth to note that in the mixed model when the effect is linear for an attribute, the WTP for improving the attribute from level 1 to level 3 the value obtained when passing from level 1 to level 2. For nonlinear attributes (hiking and gastronomy) the WTP figures obtained with these two models are substantially higher than those obtained by the linear effects model.

**Table 14. Willingness to pay estimations. Non - linear and mixed linear non - linear models.**

| ATTRIBUTES | NON – LINEAR EFFECTS | | MIXED LINEAR NON – LINEAR MODEL | |
|---|---|---|---|---|
| | **1 – 2** | **1 – 3** | **1 – 2** | **1 – 3** |
| **Hiking** | 120.41 | 136.47 | 130.69 | 152.86 |
| **Experience of community life** | 22.71 | 35.21 | 25.44 | 50.76 |
| **Gastronomy** | 89.45 | 105.96 | 95.22 | 121.35 |
| **Crafts** | 25.11 | 62.84 | 36.99 | 73.98 |
| **Rituals** | 38.65 | 79.93 | 47.37 | 94.63 |

In general, we think that the willingness to pay figures obtained in the analysis represent rather high values for a country such as Ecuador where the average family income is $893.00[1]. A possible explanations of this result could be explained by the socioeconomic profile of the average visitor of the area which belongs to a high-middle income segment. Notwithstanding these estimates are pretty consistent with the profile of tourists who more visit this area, they are considered within the economically active population, which are public and private sector officials in addition to an academic level of higher education. In addition, when comparing our WTP figures with market prices for similar products in other areas of the country our results turn more consistent. For example, if we offer a touristic product that has hiking, gastronomy and the experience of living with the community with the estimated values the total price of the package would be about $324.95 and "Cotococha Amazon Lodge" offer products with similar characteristics with prices ranging from $275.00 to $400.00 (http://www.cotococha.com/), as the same as the travel agency "SelvaVida" (http://selvavidatravel.com) that offers packages with different activities; such as rituals and the price is about $170.00. However, a more in deep research must be undertaken in order better understand the factors defining preferences for ecotourism products.

[1] Encuesta Nacional de Ingresos y Gastos de los hogares urbanos y rurales 2011- 2012

## 5. CONCLUSIONS

In this thesis we have carried out a first approach to the analysis of the demand for ecotourism products in the province of Zamora Chinchipe located in the southeastern region of Ecuador, where local population and indigenous communities could find a good opportunity to increase their income, improve their living standards, and help in the conservation of protected areas. In the analysis we use data from a discrete choice experiment which faced visitors to the choice among two hypothetical ecotourism packages characterized by six attributes, namely, price, hiking activities, participation in rituals, tasting of local gastronomy, visit to crafts centers and experience community life; and the status quo represented by the non-choice option.

Data collection was carried out during the development of a research project financed by the "Universidad Técnica Particular de Loja" where I have the opportunity to participate as a member of the research team of the tourism section. The surveys were conducted in the cities of Loja and Cuenca because they represent the main market of Zamora Chinchipe's province.

Choice experiments offer the advantage of obtaining information from each respondent who faces a series of choice scenarios characterized a number of attributes that have different levels. In our survey we interviewed 459 individuals that provided useful information, such as their travel preferences, their attitudes regarding certain environmental issues, and socioeconomic information. This information was supplemented with that resulted from the choice experiment where individuals selected the option that was consider more attractive according to their preferences, under 12 different choice scenarios.

The demand analysis is based on the estimation of different Multinomial Logit models considering linear and non-linear effects in the explanatory attributes. The main conclusions derived from the analysis are the following:

i) In spite of considering an experimental design with potential for measuring non-linear effects in all qualitative attributes (as all the attributes were defined at three levels), in our case these non-linear effects only resulted significant for activities related to hiking and tasting of gastronomy. For the rest of the attributes, a marginal improvement is identically perceived independently of the departure point.

ii) Regarding attributes importance, again hiking and gastronomy where the ones that produced the highest impact on tourists' utility. Community experience as presented in the experiment has not been highly valued by respondents, and the same happens with the rituals and crafts.

iii) We obtained willingness to pay figures for the attributes considered in our analysis that resulted consistent with market prices of similar products offered in the area. As expected, the activities with highest value were hiking and gastronomy. This means that people visiting the area greatly values these two activities from the rest, thus promoting it would lead to higher revenues.

iv) Results of our analysis provide useful information for local authorities responsible of tourism departments to promote the development ecotourism products in the area.

Ecotourism activities are a strategic product designed to be sold in a market segment where people have a high average income. It is important to point out that in Ecuador, the tourism expenditure of the nature tourism segment provided in the Amazon, which combines

experience with indigenous communities, is greater than that carried out by the mass tourism segments, such as sun and sand tourism that occurs in the cost areas.

The research carried out in this dissertation provides preliminary results that open the door for future research. Few applications of choice experiments are known in the field of ecotourism. In fact, this case study represents a precedent in Ecuador which encourage us to continue under these research methodologies.

These are some the lines that could be developed in future research:

i) Analysis of systematic and random taste heterogeneity as well the incorporation of panel correlation effects by estimating more flexible choice models of the family of Mixed Logit.

ii) Analysis of Latent class models who can help us to detect the existence of latent behavior regarding the perception of the attributes and their willingness to pay, not accounted by the classical analysis of taste heterogeneity.

iii) Analysis of Hybrid choice models incorporating information on individual's attitudes regarding environment conservation.

**Acknowledgment**

To the “Universidad Técnica Particular de Loja” because the information that was used in this study was obtained through the research project “Generar desarrollo comunitario en los cantones Zamora y Yacuambi a partir de la valoración del ecoturismo como fuente de ingresos y mejora de la calidad de vida” of the tourism section of this university, making possible the implementation of surveys whose information is analyzed in this paper.

## 6. REFERENCES


Bahrain Rawi, S. (2012, 06). The Use of Choice Modelling in Assessing Tourists Destinations: A Case Study of Redang Marine Park (RMP) Malaysia. 1-357. California, United States . Retrieved 04 25, 2015

Blangy, S., & Mehta, H. (2006, 05 08). Ecotourism and ecological restoration. *Nature conservation*(14), 233 - 236. doi:10.1016/j.jnc.2006.05.009

Carnicelli-Filho, S., Schwartz, G. M., & Tahara , A. K. (2010). Fear and Adventure Tourism in Brazil. *ELSEVIER Tourism Management*(31), 953 - 956. doi:10.1016/j.tourman.2009.07.013

Ceballos Lascuráin, H. (1993). *IUCN, International Union for Conservation of Nature.* Retrieved 04 07, 2015, from IUCN, International Union for Conservation of Nature: https://portals.iucn.org/library/efiles/html/Tourism/section5.html

Chaminuka , P., Groeneveld, R., Selomane, A., & van Ierland , E. (2012). Tourist preferences for ecotourism in rural communities adjacent to Kruger National Park: A chocie experiment approach. *Tourism management, 33*, 168-176. doi:10.1016/j.tourman.2011.02.016

Chase, L. C., Lee, D. R., Schulze , W. D., & Anderson, D. J. (1998, November). Ecotourism Demand and Differential Pricing of National Park Access in Costa Rica. *Land Economics, University of Wisconsin Press, 74*(4), 466 - 482. Retrieved 04 11, 2015, from http://www.jstor.org/stable/3146879

Chen , W. Y., & C.Y., J. (2012, 02). Contingent valuation of ecotourism development in country parks in the urban shadow. (T. a. Francis, Ed.) *International Journal of Sustainable Development & World Ecology, 19*(1), 44-53. doi:10.1080/13504509.2011.588727

Choicemetrics. (2009). *Choicemetrics.* Retrieved from www.choicemetrics.com

García Llorente , M., Martín López, B., Nunes, P., Castro, A., & Montes, C. (2012, 09 18). A choice experiment study for land-use scenariois in semi-arid watershed environments. . *Journal of Arid Environments , 87*, 219-230. doi:http://dx.doi.org/10.1016/j.jaridenv.2012.07.015

Gossling, S. (1999). Ecotourism: a means to safeguard biodiversity and ecosystem functions. *Ecological economics, 29*, 303-320. Retrieved 04 27, 2015

Greek National tourism organization. (2012). *GNTO*. Retrieved 04 28, 2015, from http://www.gnto.gov.gr/

Greek National Tourism Organization. (2014). *Greece all time classic*. Retrieved 04 26, 2015, from http://www.visitgreece.gr

Gurung , D., & Seeland, K. (2008). Ecotourism in Bhutan: Extending its benefits to rural communities. *Annals of tourism reseaarch, 35*(2), 489-508. doi:10.1016/j.annals.2008.02.004

Hearne , R. R., & Salinas , Z. (2002). The use of choice experiments in the analysis of tourist preferences for ecotourism development in Costa Rica. *Journal of Environmental Management, 65*, 153-163. doi:doi:10.1006/jema.2001.0541

Henly, A. (2011). *On Earth*. (N. R. Council, Producer) Retrieved 04 10, 2015, from http://archive.onearth.org/article/can-ecotourism-survive-in-costa-rica

Instituto Nacional de Estadísticas y Censos. (n.d.). *Ecuador en cifras*. Retrieved 04 30, 2015, from http://www.ecuadorencifras.gob.ec/

International forum of Ecotourism. (2004). *CANAECO Camara Nacional de Ecoturismo y Turismo Sostenible de Costa Rica* . Retrieved 04 09, 2015, from http://www.canaeco.org/en/ecotourism-and-sustainable-tourism

Kutay, K. (1992). Ecotourism Marketing: Capturing the demand for Special Interest Nature and Culture Tourism to Support Conservation and Sustainable Development.

Lindsey, P. A., Alexander, R. R., T. du Toit, J., & Mills, M. (2005). The potential contribution of ecotourism to African wild dog Lycan Pictus conservation in South Africa . *Biological Conservation, 123*, 339-348. doi:10.1016/j.biocon.2004.12.002

Mc Fadden , D. (1981). Econometrics models of probabilistic choice. (Cambridge, Ed.) *53*, 198 - 272 . Retrieved 05 20, 2015, from http://www.jstor.org/stable/2352205

Menezes, L. C. (2005, September ). (Eco) turismo en unidades de conservación en Brasil: El caso de la Sierra de Itabaiana-SE. *Estudios y Perspectivas en Turismo, 14*(3), 197 - 218. Retrieved 04 12, 2015, from http://www.redalyc.org/articulo.oa?id=180713883001

Menkhaus, S., & Lober, D. J. (1996). International Ecotourism and the Valuation of Tropical Rainforests in Costa Rica . *Journal of Environmental Management , 47*, 1-10. Retrieved 04 11, 2015

Moragrega Martín, L. (2004, August). Tourist Expansion and Development of Rural Communities: The Case of Monteverde, Costa Rica. *Mountain Research and Development, 24*(3), 202-205. Retrieved 04 11, 2015, from URL: http://www.jstor.org/stable/3674553

Peng-Wei , W., & Jing-Bo , J. (2012, 03 11). Tourists' willingness to pay for biodiversity conservation and environment protection, Dalai Lake protected area: Implications for entrance fee and sustainable management. *Ocean & Coastal Management, 62*, 24-33. doi:10.1016/j.ocecoaman.2012.03.001

Rose, J., & Bliemer, M. (2004). *The design of Stated Choice Experiments: The Stateof Practice and Future Challengues.* University of Sydney and Logistic Studies , Institute of Transport .

*Roteiros de Charme*. (1999). Retrieved 04 11, 2015, from http://www.roteirosdecharme.com.br/

Sarouhan, T. (2003). *Go visit Costa Rica*. Retrieved 04 09, 2015, from Go visit Costa Rica: http://www.govisitcostarica.com/travelInfo/ecotourism.asp

Stronza, A., & Pêgas , F. (2008). Ecotourism and Conservation: Two Cases from Brazil and Peru . *Human Dimensions of Wildlife* (13), 263 - 279. doi:10.1080/10871200802187097

The British Ecotourism Market. (2002). *World Tourism Organization Network*. Retrieved 04 06, 2015, from http://sdt.unwto.org/content/ecotourism-and-protected-areas

The International Ecotourism Society . (2015). *The International Ecotourism Society*. Retrieved 04 06, 2015, from The International Ecotourism Society: https://www.ecotourism.org/what-is-ecotourism

United Nations. (1998, December 6). *United Nations World.* Retrieved 04 08, 2015, from United Nations World: http://www.un.org/documents/ecosoc/res/1998/eres1998-40.htm

Wallace, G., & Pierce, S. (1996). An Evaluation of Ecotourism in Amazonas, Brazil. *Annals of tourism research , 23*(4), 843-873.

Weaver, D., & Lawton, L. (2007, March 7). Twenty years on: The state of contemporary ecotourism research. *Tourism management* , 1168-1179. doi:10.1016/j.tourman.2007.03.004