

Vol. 18, Nº 2 Julio–Diciembre 2022

Print version ISSN – 0717 – 6651, Online version ISSN – 0718 – 235X

RiAT

Revista Interamericana de Ambiente y Turismo
Interamerican Journal of Environment and Tourism

Research paper

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(Ecuador)

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user-generated content on TripAdvisor.
The case of Holguin destination

Mapping of the scientific production on maintenance
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Literature Review

Perspectives on short break destinations and their
contribution to local-regional economic development:
a literature review

A systematic review of cultural ecosystem services and
valuation methods.

Innovation and creativity in the tourist offer: challenges
and perspectives for Holguin tourism destination, Cuba

Scientific Note

Sondondo Ayacucho Valley – Peru: Approach of a
Tourism Based on Agrobiodiversity

Editada por:

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Revista Interamericana de Ambiente y Turismo
Interamerican journal of Environment and Tourism

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ISSN versión impresa: 0717-6651 / ISSN versión online: 0718-235X

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Vol. 18, N° 2 Julio-Diciembre 2022

Print version ISSN – 0717 – 6651, Online version ISSN – 0718 – 235X

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Climate Change and its Influence on Tourism Fluctuation in the Araucania region of Chile

El Cambio Climático y su influencia en las fluctuaciones del turismo en Chile

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Received: 2022-11-01

Accepted for publication: 2022-11-04

Published: 2022-12-31

ABSTRACT

The increasing rates of climate change have repercussions in different sectors economics of a nations. For the tourism industry, climate change affects its destinations, since it changes the flora and fauna, relief, and vegetation of the area.

This paper analyses the impact of climate change on tourism fluctuations in the Araucanía Region of Chile. This analysis was conducted through descriptive research, of longitudinal scope and a mixed approach with a predominantly quantitative approach. Variables caused by climate change that influence tourism fluctuations in the Araucanía region were analysed.

The methodology contemplated the collection of statistical and bibliographic data. In addition, the development of a multiple linear regression model to explain the incidence of climate change on tourism, with "Overnight stays" as the study variable (y) that represents Tourism and "maximum temperatures and precipitation" as explanatory variables (x) that represent the climate change. To achieve this, data was obtained from January 2010 to December 2019. The results showed that climate change does affect in a positive way the tourism, since it has an impact on the arrival of tourists to the region, through an increase in the maximum temperature that entails an increase in overnight stays, consequently in tourism in the Araucanía Region.

Keywords: Tourism, climate change, overnight stay, maximum temperatures, precipitation.

RESUMEN

Los crecientes índices del cambio climático repercuten en diferentes sectores económicos de una nación. Para el sector Turismo, el cambio climático afecta sus destinos, ya que produce cambios en la flora y fauna, relieves y vegetación de la zona.

En este documento se analiza la incidencia del cambio climático en las fluctuaciones del turismo en la Región de la Araucanía, Chile. El análisis se realizó mediante una investigación descriptiva, de alcance longitudinal y de enfoque mixto con predominancia cuantitativa.

La metodología contempló recopilación de datos estadísticos y bibliográficos, además, el desarrollo de un modelo de regresión lineal múltiple para explicar la incidencia del cambio climático en el turismo con "Pernoctaciones" como la variable de estudio (y), que representa el turismo y "temperaturas máximas y precipitaciones" como variables explicativas (x) las que representan el cambio climático. Para lograrlo se obtuvieron datos desde enero 2010 hasta diciembre 2019. Los resultados demostraron que el cambio climático sí afecta el turismo de manera positiva ya que existe incidencia de este en la llegada de turistas a la región, a través de un aumento de la temperatura máxima que conlleva un aumento de pernoctaciones y por ende del turismo en la Región de la Araucanía.

Palabras clave: Turismo, cambio climático, pernoctaciones, temperatura máxima, precipitaciones.

INTRODUCTION

Over the years, climate change has gained great relevance and has been established as the greatest issue in the current world. Governments from different parts of the world have promoted strategies to mitigate its effects since it impacts several of the socioeconomic areas of countries, together with the tourism industry which in the last years has established itself as one of the fastest growing economic sectors worldwide, as in the case of tourism in Chile. "The effects of climate change can be observed in the environmental variables that affect mainly, coastal areas mountainous places or small islands, places that are considered as the main generators of economic benefits in the tourism industry" (Tourism Environmental Staff, 2016).

This study focuses on the Araucanía region of Chile. That is why it is relevant to mention that Chile is a tricontinental country, which territory is located in the western and southern areas of south America, between parallels 17° 30' and 56° 30' south latitude. Thus, it includes Easter Island in Oceania, and extends to the south in Antarctica, in an area between the 53° and 90° meridians of west longitude and up to the South Pole (Ministry of the Environment, 2018). "The South American territory of Chile as a huge variety of climates altered by numerous environmental factors which give the country very peculiar characteristics. In general terms, the South American Chilean territory presents features of a temperate climate with some essential variations that are mainly produced by latitude and altitude, giving rise to the desert, tropical, Mediterranean, temperate and polar climatic systems, mainly" (Ministry of the Environment, 2017).

Due to the characteristics of its peculiar climate, Chile presents a variety of landscapes from Desert, Patagonia, National Parks, Volcanoes, to Geysers among others. It makes it position itself within the busiest destinations in Latin America to practice tourism. According to the World Tourism Organization (UNWTO), "tourism includes activities carried out by people during their trips and stays in places other than their usual environment, for a consecutive period of less than one year, for leisure, business and other purposes" (World Tourism Organization, 1998).

On the other hand, climate change is a worldwide issue and Chile is not excluded from the probable consequences. According to a definition by United Nations Framework Convention on Climate Change (UNFCCC), it is defined as "a

change in climate attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is added to the natural variability of climate observed over comparable time periods" (United Nations, 1992). "Chile, according to the 4.8 article of the United Nations Framework Convention on Climate Change (UNFCCC), is considered a highly vulnerable country in the face of climate change phenomenon since it has low-lying coastal areas, arid, semi-arid and forest areas, susceptibility to natural disasters, areas prone to drought, urban areas with air pollution problems and mountainous ecosystems such as the Coastal and Andean mountain ranges. Added to the foregoing is the strong dependence of the main socioeconomic activities on the climate, mainly on water availability" (Centro UC Cambio Global, 2014).

The Araucanía region is a sector with a high tourism potential, since it offers consolidated, emerging and potential destinations (National Tourism Service, 2006). The natural environments of the region are well outlined and without great access. The coast of this region is rectilinear, very exposed to wind actions, with few bays suitable for port facilities. The coastal plains appear with little development, being able to appreciate some extensions to the Budi Lake. It is a unit of great scenic beauty, with an important area of state protected wildlife areas, a wide variety of nature attractions that allow the development of nature and adventure tourism. Rivers, lakes, waterfalls, valleys and Araucarias forest are located in this zone (Ministry of Public Works, 2017).

This region constitutes a transition area between Mediterranean climates with humid degradation and temperate-rainy climates with oceanic influence. The relief determines that climate factors vary both transversely and longitudinally, a fact that can be seen in the amount and distribution of rainfall. There are four sorts of climate in the region: warm temperate climate with short dry season, warm temperate rainy, cold-rainy temperate and ice climate due to height effect (SERNATUR, 2014). Hence all the mentioned characteristics in Araucanía region are optimal for conducting this research on the influence of climate change in tourism industry. Furthermore, Chile is considered a highly exposed country to climate changes (UC Global Change Center, 2014).

In this regard, this research analyzes whether climate chan-

ge has any impact on tourism in the Araucania region of Chile. The main reason supporting this research is that the Araucania region, located 700 kilometers south of Santiago de Chile, has fluid connectivity by land and air, point where the intense green of southern Chile is born, watched over by huge volcanoes that draw the profile of Andes Mountain, covering themselves with forest, lakes and rivers. This amazing nature is protected in national parks and reservations easy to get into it through an important route network. The region landscapes recall The Alps, adding skii resorts located in the slopes of active volcanoes and numerous hot springs in the surrounding areas. Its volcanic geography has contribute to create ideal settings for adventurous turism such as rapids, canyons and lava fields (SERNATUR, 2021).

Another significant factor is the presence of Mapuche ethnic group in Araucania region, a culture that has remained over the years. This esential characteristic makes the region a full of identity destination. According to data obtained by CONADI, there are a total of 1.973 communities spread all over the cities in the region. Thus, the highest percentage of communities is located Padre las Casas.

This research aims to answer the following question: How does climate change affects tourism in Araucania region?, hence the main research objective is to analyze turism fluctuations in Araucania region considering variables in climate change. The foregoing will be achieved through the implementation of three specific objectives. Firstly, it is proposed to identify the exact periods where largest amounts of tourist come into the region. Secondly, to stablish the consequences of climate change in tourist destinations in the Araucania region. Finallly, to determine whether climate change has a positive or negative impact on fluctuations in tourism in the Araucania region.

Climate is not only an impact factor, but also an essential resource for promoting tourism. Moreover, for most outdoor activities specially for water and snow sports in tourism. Climate variability and changes in weather patterns can directly affect the planning of tourism tours and daily operations. Unstable weather patterns in tourist destinations can significantly affect the well-being of tourists, their travel decisions even the flow of tourists (UNWTO, 2007b). Most tourists look for favorable weather conditions depending on the activities they want to do whether skiing, sunbathing, trekking, camping or sightseeing flora and fauna of the area.

This article is organized in four categories. Firstly, a theoretical framework that supports this research is presented. Secondly, the applied methodology to fulfill objectives is described. Thirdly, the results are displayed and finally, general conclusions regarding the influence of climate changes in Araucania region are presented.

THEORETHICAL FRAMEWORK

Climate change, regarding to anthropogenic influence on climate systems, has become the gratest challenge that humanity has faced. There is a scientific consensus on this phenomenon as an unequivocal fact: it has been caused by human activities, triggered by excessive emission of greenhouse gases (GHG) and other short-lived climate forcing. One of the key messages in the 5th Climate Assessment Report (AR5, 2013/14) by the Intergovernmental Panel on Climate Change (IPCC), states that "human influences on the climate system is clear and increasing, and its impacts are observed in all the continents. If left unchecked, climate change will increase the probability of threatening, widespread and irreversible impacts on people and ecosystems" (Ministry of the Environment, 2017 b).

According to United Nations, climate change refers to long term changes in temperature and weather patterns. These changes can be natural for example, thorough variations in the solar cycle. Nevertheless, since 19th century, human activities have been the main factor in climate change. Burning fossil fuels such as coal, oil and gas generates greenhouse gas emmisions that act like a blanket around the Earth, drawing in heat from the Sun and raising temperatures (Ministry of the Environment, 2017 a). Some examples of greenhouse gases that cause climate change are: carbon dioxide and methane. These gases are emitted by the use of gasoline or by heatting a building, land and forest clearing can also release carbon dioxide, landfills are a major source of methane emission, energy industries, transportation, building, agriculture and soil uses are among the main emitters (United Nations, n.d.). There are some gases that increase the temperature of the Earth and increase the greenhouse effect. These greenhouse gases (water vapor, CO₂, among others) can be added naturally or unnaturally. Throughout the history of Earth gases have been incorporated by volcanoes. Absence of CO₂ the Earth's temperature would be about 33° lower than it is today. However, CO₂ has been added in an artificial way as the result of human activities, mainly from the burning of fossil fuels. Therefore, it is fundamental to distinguish between the natural greenhouse event and

the enhanced greenhouse effect ever recognized as global warming (Tutii, 2011).

Global change has disastrous consequences for our planet and people. The rising in temperatures have been extremely dramatic. Severe weather patterns such as hurricanes, heavy rains and droughts, extreme colds, lack of water, storms, impacts on the exosystem (changes of habitats, animals, extinct species, new species); raising in sea level, increase of pests and diseases, agriculture troubles and consequently more hunger in the world (Tutti, 2011).

For this reason, the Meteorological Directorate of Chile, provides rates of extreme events of change climate, which it defines as: a set of indicators standardized, based on percentiles, thresholds and duration, those that allow to compare the changes that take place to global scale. The Change Detection Team of Experts Climate and Indices (ETCCDI) propose to analyze and monitor this set of rates in each country, since it has the advantage of crossing with indicators of vulnerability, related to potential impacts on different sectors, such as agriculture, health and wellness human, water resources, security, infrastructure, among others. Among the climate change rates are: Annual precipitation index, maximum daily precipitation, days with precipitation, maximum precipitation in 5 days, days with precipitation over 10 millimeters, days with precipitation over 20 millimeters, maximum length of days with rain, length maximum dry days, standardized drought index, rainy days, extremely rainy days, precipitation intensity, warm nights, cold nights, warm days, cold days, frosty days, summer days above 25°C, summer days above 30 °C, absolute maximum temperature, absolute minimum temperature, minimum maximum temperature, maximum minimum temperature, warm period, cold period, average maximum temperature, average minimum temperature, daily temperature range and heat wave (Chilean Meteorological Directorate, n.d.).

According to Águeda Esteban Talaya (2005), tourism is a complex system that is difficult to define since it comprises a set of activities of a different nature of an economic, social, geographic, cultural, sports, environmental and institutional nature. The tourism system, moreover, has a transversal and heterogeneous nature that gives it a certain singularity as an activity, since there is a strong interrelation between economic, social, natural, cultural and political factors. In addition, it points out that tourism is made up of four basic elements, the geographical-tourist

space, demand, supply and agents. All the fundamental factors and elements interact in a certain institutional and legal framework and in the same location: the tourist destination, where resources are shared for a certain period of time, which, together with the services used, make up the tourist offer. Space and time are the two main components on which tourism is based (Esteban, López, & Aguiló, 2013).

Tourism demands and consumes a geographical space. This comprises a physical substrate (the natural environment), composed of geophysical elements (climate, topography, geology, fauna, flora, relief, among others) and some created by human occupation known as geohumans (López, 1944). This geographical space can be both a support and a resource for tourist activity, but it can also be a location factor. All economic activity needs a territory to take place, in this case we speak of the geographical space as a support for tourist activities, but this does not mean that the role played by the space is indifferent in relation to the processes that take place in it (Sanchez, 1985). Due to its own characteristics, it will intervene as a location factor according to the different actions carried out in it. Tourist activities are not distributed homogeneously in space, but rather have location guidelines. The factors that explain their location are economic and non-economic (assessments, environmental perceptions) (Vera, López, Machena and Antón, 1997).

Tourism is also defined as: "an activity whose progressive growth has increasingly important impacts on the cultural, social and economic sphere of a country. This is so because it produces effects on the balance of payments, on investments and construction, and on the improvement of transportation, which in turn affects employment and, ultimately, the well-being of the members of a community." (United & Agencies, 2003). Due to the relationship that tourism has with the environment and with the climate, it is considered that, like agriculture, energy and transport, it is an economic sector that is very sensitive to climatic factors (UNWTO, 2007a). On the other hand, according to the National Geographic website, "climate refers to the average values of weather conditions for a specific place over a period of several years" (National Geographic, 2010). Likewise, Reixac indicates that "the climate is a natural tourist resource since it is an element that, through the activity of man and the means available to him, makes tourist activity possible and satisfies the needs of the demand" (Reixac, 2005).

In this context, it can be said that the climate is a very important factor for the development of tourism, as well as the weather, concepts that are usually confused instead of related. The climate is, what determines the adequacy of a certain area for tourism, it is established on a space and organizes its activities in the permanent picture of the climate of that place. On the contrary, it is the weather that determines the right time to carry out a tourist activity. The climate influences the environmental framework of the tourist activity due to the configuration of the vegetation, the morphogenetic processes, the distribution of the fauna, the flow of the rivers and the water supply. In turn, the climate exerts a great influence on the seasonality of tourist activity, long seasons allow a greater return on invested capital and infrastructure. A poor adaptation of tourist activity to weather conditions or a poor diversification of activities based on the different conditions recorded during the year enhance the problem of seasonality. This is exacerbated when the activities depend on the weather and are not only sensitive to it, as is the case of sun and beach tourism, sports winter and nautical, for example, cultural tourism does not present seasonality problems (Tutii, 2011).

Thus, Tutti (2011) points out that climate and weather influence tourism development for the following reasons:

- In the face of any tourist establishment, it is important to consider extreme weather events that are likely to put the lives of tourists and tourist facilities and infrastructures at risk. Although absolute safety in tourist activities is impossible, the non-consideration of the climatic characteristics of the tourist regions means that the tourist locations end up further enhancing the risks linked to the climate.
- The catastrophic nature of many natural episodes depends on inadequate human intervention in the geographic space. There are areas that are more vulnerable to climatic events due to lack of infrastructure.
- The climate in turn influences the creation of a certain type of infrastructure. Since tourism is movement by definition and tourists are increasingly dynamic, more efficient transport and communications are required, which depend on climatic and meteorological conditions for their proper functioning. The consideration of weather and climate conditions has been frequent in the construction projects of airports and coastal and river navigation facilities. However, the consideration of these conditions has been taken for the construction of land and railways.

Since when laying out these routes, issues of temperature, frost, humidity, rain, snowfall, due to erosion and road closures must be taken into account.

- The weather influences the feelings of the tourist. In some cases positive psychic reactions develop and in others negative. The tourist therefore chooses destinations that contain climatic elements, among them, that favor the sensation of enjoyment.
- At the same time, a climate or weather conditions that are too aggressive can generate situations of discomfort and even damage health. These characteristics become more evident in certain age groups. Health tourism as a tourist modality also values the climate from the point of view of health and comfort. In this type of tourism, the climate becomes the raw material to alleviate diseases or prevent their appearance.
- A good climate makes it possible to satisfy tourist needs, promoting these spaces.

Based on some reports of the European Environment Agency, the Special Report on Sustainability of the Tourism Industry of the World Tourism Organization and a selection of articles and documents considered key to understanding the potential impacts of climate change on the tourism sector, starting with the availability of drinking water, health aspects (especially due to the increase in the area affected by tropical diseases), reduction of biodiversity (especially sensitive for destinations based on ecotourism) and damage to infrastructure (Tutii, 2011). Extreme high temperatures, heat waves and heavy precipitation events are likely to become more frequent. It is also likely that future tropical cyclones (typhoons and hurricanes) will gain in intensity, with an increase in maximum wind speeds and precipitation (Intergovernmental Panel on Climate Change, 2019).

The three major factors in choosing a tourist destination are climatic conditions together with other factors such as economic conditions and political stability, social reputation of the destination and media coverage and environmental quality, the basis of such complex interactions on these factors is difficult to separate the weight of climatic conditions on the final decision. Climate factors related to tourism should include average and extreme temperatures during the day, hours of sunshine, humidity and rainfall conditions, and the occurrence of extreme weather

events such as storms and strong winds. In general, the three tourism sectors that will be most affected by climate change are “beach tourism”, “snow sports tourism” and “ecological tourism” (Tutii, 2011).

The tourism sector cannot tackle the problem of climate change on its own, so it must act within the framework of the general agenda of sustainable development on an international scale. A coherent regulatory strategy should be developed to disconnect the enormous tourism growth forecast for the coming decades from the increase in energy consumption and greenhouse gas emissions, so that tourism growth contributes to poverty reduction without ceasing to be decisive for the achievement of the United Nations Millennium Development Goals (UNWTO, 2007a).

In this regard, the Davos Declaration of October 2007, subsequently endorsed by the Assembly of the World Tourism Organization (UNWTO), affirms that the tourism sector must respond rapidly to climate change in the evolving framework of the United Nations, and progressively reduce its emission of greenhouse gases (GHG) in order to grow sustainably. To this end, measures must be taken to: mitigate their GHG emissions, derived especially from transportation and accommodation activities; adapt businesses and tourist destinations to changing weather conditions; apply existing and new techniques to increase the efficiency of energy use; collect financial resources to help poor regions and countries (United Nations, 2009).

STUDY AREA

Chile is a wealthy country in natural resources and landscape diversity, according to data from the National Tourism Service (SERNATUR). It has the driest desert in the world, 6,435 km of coastline, 15,790 lakes and lagoons, 24,093 glaciers, more than 270 hot springs, 139 active volcanoes, 1,509 peaks over 4,000 meters, 3,094 islands and islets, and 5 World Heritage Sites. Sufficient arguments to make Chile an interesting country, with great attractions, which translates into great tourism potential (Government of Chile, 2012).

According to the Tourist Competitiveness Index, prepared by the World Economic Forum, Chile is positioned at No. 52, out of a total of 140 countries. This index is a measurement that has been made every two years since 2006 to measure the factors and policies that help the sustainable development of tourism directly and closely related to the competitiveness and general development of each coun-

try. This series of indicators reflects the stability in terms of attractions and the potential that the country has to become a relevant alternative worldwide when talking about tourism (World Economic Forum, 2019).

Chile is divided in sixteen regions, where the Araucanía corresponds to the ninth. “It is located in the south of Chile, between parallels 37°35' and 39°37' south latitude and from 70° 50' west longitude to the Pacific Ocean, bounded to the north by the Biobío Region, for the south with the Los Lagos Region, to the east with Argentina and to the west with the Pacific Ocean” (National Council for Culture and the Arts, 2015). Araucanía is divided politically and administratively by 2 provinces, Cautín and Malleco, with a total of 32 communes; the last one created was Cholchol in 2004, and its regional capital corresponds to Temuco. It also constitutes the natural and proper space for settlements of the Araucanian people, where their social and cultural heritage is still preserved in some areas (Library of the National Congress of Chile, 2022b). “It has a total area of 31,842.30 square kilometers, equivalent to 4.2% of the national territory (American and Insular Chile). According to the 2017 Census, the population is 957,224 inhabitants and a density of 30.06 inhabitants per square kilometer” (Library of the National Congress of Chile, 2022b).

Its relief is determined by coastal plains, Coastal Mountain Range, Intermediate Depression, Foothills and Andes Mountains. The coastal plains are characterized by being extensive in the central zone, reaching their most significant development between the Moncul and Queule rivers, with an average width of 25 km, but in the extreme north and south they form a narrow strip. Meanwhile, the Cordillera de la Costa, which from the north to the Imperial River is called the Nahuelbuta Cordillera. This becomes a high-altitude barrier in the province of Malleco, “it is made up of metamorphic rocks with a crystalline basement and granitic rocks that outcrop in the North and South sections, where it reaches the highest altitudes” (INE, 2019). The intermediate depression, or Longitudinal Valley, has an undulating surface, interrupted by deep valleys and some island hills, such as Pidenco and Pangal. Between the mountain range and the longitudinal valley, the foothills is formed by a chain of low hills whose altitude is estimated between 600 and 1,000 meters. In the south of the region, there are foothill lakes, such as: Colico, Caburgua and Villarrica. Finally, the Andes mountain range is characterized by heights of over 2,000 meters, dominated by the volcanoes that constitute it and give it the characteristics of an active volcanic

mountain range, these are: Tolhuaca (2,780 m), Lonquimay (2,822 m), Llaima (3,050 m) and Villarrica (2,840 m) (Library of the National Congress of Chile, 2022c).

The National Emergency Office of the Ministry of the Interior (ONEMI) indicates that; the coastal mountain range has a temperate oceanic climate characterized by abundant relative humidity and rainfall between 1,000 and 1,500 mm; while in the Cordillera de los Andes the cold high-altitude climate predominates, distinguished by an increase in precipitation of 3,000 mm per year and low temperatures throughout the year, above 1,500 meters above sea level solid precipitation and temperatures are below 0°C, dry periods last from one to two months. On the other hand, the Nahuelbuta range of hills traps the oceanic influence and the humid winds, reducing rainfall and increasing dry periods. While in the north of the region the climate is warm temperate with less precipitation (Library of the National Congress of Chile, 2022a). "The climatic characteristics of the region allowed the development of a true southern forest in the past but that was later intervened by human activities, replacing them with grasslands for livestock and crop fields" (SERNATUR, 2014). Consequently, many lands were deforested, which presented soil erosion in the Nahuelbuta Mountain Range. Nowadays efforts are being made to preserve nature and that is why 13 State Protected Wilderness Areas have been designated, among these are 5 National Parks, 6 Nature Reserves and 2 national monuments (CONAF, 2022).

In this region the predominant economic activity corresponds to agriculture. The forestry and agricultural production stands out together with the traditional cereal crops, such as wheat, barley, oats and rye, lupine and potato. Followed by livestock production, especially the bovine sector. Forestry activity has also experienced growth with a greater presence in the province of Malleco, while in the province of Cautín the activity of construction and services have stood out above the others. (Library of the National Congress of Chile, 2022b).

The natural environments of La Araucanía are well outlined and without great access difficulties, as occurs in the extreme regions of Chile (Ministry of Public Works, 2017), which allows the development of nature and adventure tourism. According to CONAF data, the Araucanía Region is characterized by having a great wealth of attractions that we can categorize into:

Main attractions:

- National Parks: Villarrica, Huerquehue, Conguillío, Tol-

huaca, Nahuelbuta.

- National Reservations: Villarrica, Malalcahuello, Alto Bio-bío, Malleco, China Muerta y Las Nalcas.
- Volcanoes: Tolhuaca, Lonquimay, Llaima, Villarrica, Lanín y Quetrupillán.
- Lakes: Conguillío, Colico, Villarrica, Caburgua y Calafquén.
- Rivers: Biobío, Trancura, Toltén.
- Monuments Ñielol y Contulmo.

Additional Attractions

- Hot spring: Malleco, Malalcahuello, Manzanar, Huife, Montevivo, San Luis, Peumayen, Menetúe, Trancura, Sierra Nevada.
- Snow covered volcanoes of Sollipulli and Quetrupillán.
- Lagoons: Quillehue, Tinquilco, Quililo, Captrén, Galletúe, Icalma and Budi.
- Rivers: Cautín, Imperial, Trancura, Allipén, Moncul among others.

In the Araucanía region exist four border crossings, three of them are: Pino Hachado, Icalma and Mamuil Malal, which are permanently enabled, and Reigolil, which is temporarily enabled. "The region's landscapes are reminiscent of the Alps, but with ski resorts located on the slopes of active volcanoes and numerous hot springs in the surrounding area. Its geography modeled by volcanoes has created ideal settings for adventure tourism such as rapids, canyons and lava fields" (SERNATUR, 2022).

METHODOLOGY

This study follows a non-experimental design with a mixed approach with predominantly quantitative, descriptive and longitudinal scope since it is based on the observation of data in a given period of time, with the purpose of investigating how climate change affects the fluctuations of tourism in the Araucanía Region. For the collection of information and according to the mixed approach of the study, two research techniques were used: (i) Bibliographic references of experts and research already carried out to carry out the qualitative analysis to complement the research; (ii) Compilation of statistical bibliographic data for the quantitative analysis for the variables that represent tourism and variables that are indicators of climate change.

The used bibliographical references were those that demonstrate and explain the concepts to better understand the consequences and benefits that climate change has on tourist destinations in Araucanía region. In addition, the evolution of visits to protected wild areas (ASPE) was used in order to confirm the results obtained from the collection of statistical bibliographic data.

The collection of statistical bibliographic data had the goal of identify the fluctuations of tourism in the Araucanía region in the face of variations in climate change between the periods that comprise January 2010 to December 2019 based on the statistics obtained from the data repository of the National Institute of Statistics of Chile (INE) and the Meteorological Directorate of Chile. With this information, a database was created with the aforementioned period (see table 1), working these on a bimonthly basis, through a multiple linear regression, it is intended to determine if climate change has a positive or negative impact on the fluctuations of tourism in the Araucanía.

Consequently, 3 variables were defined. Firstly, tourism, maximum temperature and rainfall: (i) Tourism is measured by "Overnight stays", this consists of the total number of nights that passengers stay in tourist accommodation establishments in the region of the Araucanía. Secondly, (ii) "maximum temperature" which indicates the maximum temperatures recorded in the Araucanía region, which are measured in Celsius degrees; (iii) Finally, the third variable is the "rainfall" that corresponds to the amount millimeters of rain that fell monthly in the defined period of time, both the variable maximum temperature and rainfall are based on the Maquehue Station, Temuco Ad. (380013) of the Chilean Meteorological Directorate.

As mentioned above, the Meteorological Directorate of Chile proposes 26 rates to measure climate change, within these the maximum temperature and rainfall variables were chosen as the variables responsible for representing climate change for the purposes of this investigation. Meaning that these variables contain a large amount of relevant information associated with climate change. According to the annual report on the evolution of the climate in Chile for the year 2020, high temperatures are related to hot days, which in turn allow the analysis of impacts related to fires, human and animal comfort, and above all influences resources of water (Chilean Meteorological Directorate, 2021).

See chart 1.

Chart 1: Data Base.			
Date	Overnight stays	High temperatures	Rainfall
2010 January- February	154.178	22,70	154.178
2010- March- April	19.078	19,70	19.078

2010- May-June	21.198	13,30	21.198
2010- July-August	31.033	12,10	31.033
2010- Sept.-October	33.191	16,20	33.191
2010- Nov-December	40.220	19,60	40.220
2011- January- February	145.806	25,40	145.806
2011- March-April	31.408	19,55	31.408
2011- May-June	19.973	12,95	19.973
2011- July-August	31.817	11,95	31.817
2011- Sept.-October	38.417	16,45	38.417
2011- Nov-December	41.893	22,60	41.893
2012- January- February	152.029	25,95	152.029
2012- March-April	41.862	20,35	41.862
2012- May-June	29.283	13,50	29.283
2012- July-August	45.928	12,00	45.928
2012- Sept.-October	43.807	16,80	43.807
2012- Nov-December	46.884	21,10	46.884
2013- January- February	160.010	26,50	160.010
2013- March-April	44.169	21,00	44.169
2013- May-June	29.411	13,00	29.411
2013- July-August	46.387	11,95	46.387
2013- Sept.-October	46.202	17,00	46.202
2013- Nov-December	53.643	22,55	53.643
2014- January- February	187.871	25,20	187.871
2014- March-April	46.282	19,10	46.282
2014- May-June	33.264	13,20	33.264
2014- July-August	49.078	12,40	49.078
2014- Sept.-October	48.863	16,25	48.863
2014- Nov-December	51.655	21,30	51.655
2015- January-Feb	175.008	27,10	175.008
2015- March-April	49.989	23,60	49.989
2015- May-June	43.010	14,35	43.010
2015- July -August	61.523	12,85	61.523
2015- Sept.-October	60.973	16,80	60.973
2015- Nov-December	80.009	21,50	80.009
2016- January-Feb	177.075	26,65	177.075
2016- March-April	69.127	22,25	69.127
2016- May-June	48.574	14,75	48.574
2016- July-August	108.512	12,90	108.512
2016- Sept.-October	100.567	18,10	100.567
2016- Nov- December	105.818	22,00	105.818
2017- January-Feb	240.492	25,75	240.492
2017- March-April	102.033	21,10	102.033
2017- May-June	88.790	12,55	88.790
2017- July-August	113.380	13,25	113.380
2017- Sept.- October	97.464	15,55	97.464

2018- Nov- December	101.788	21,30	101.788
2018- January-Feb	234.921	26,55	234.921
2018- March-April	94.941	19,90	94.941
2018- May-June	72.991	12,95	72.991
2018- July-August	96.918	12,45	96.918
2018- Sept.-October	88.851	16,50	88.851
2018- Nov- December	98.990	21,75	98.990
2019- January-Feb	170.226	26,25	170.226
2019- March-April	71.495	21,40	71.495
2019- May-June	58.200	14,35	58.200
2019- July- August	84.326	13,60	84.326
2019- Sept.- October	75.263	17,20	75.263
2019- Nov- December	75.718	22,35	75.718

Source: Own elaboration through Meteorología de Chile, Instituto Nacional de Estadísticas.2022

RESULTS

The main results of the study are presented below, grouped into two sections (i) qualitative analysis and (ii): multiple regression analysis

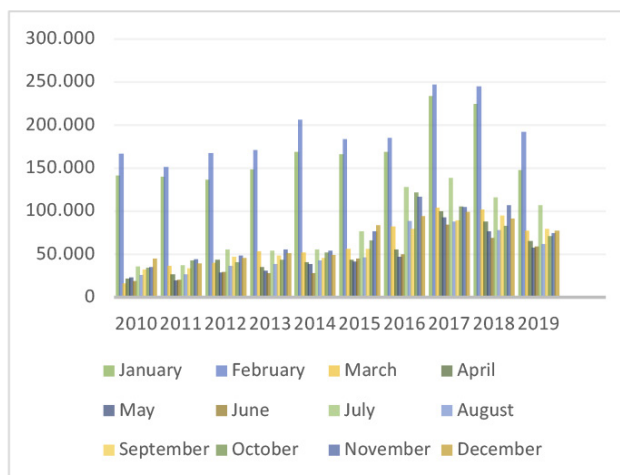
(i) Qualitative analysis.

Tourism can be considered seasonal in Chile, since it occurs in some seasons of the year, with the exception of some places such as Easter Island. In the Araucanía region, this is enhanced in two periods: summer and winter, specifically in the months of December, January, February and July. In the ninth region, the months of June, July, August and even September have a snow season, so all winter sports are enhanced in these months, since ski centers are enabled and open to the public, Pucón, Corralco and Las Araucarias ski center, located in the communes of Pucón, Curacautín and Vilcún respectively. While, in the summer, precisely in the months of December, January and February, outdoors activities carried out near the lakes from Villarrica, Caburgua, Lican Ray, Collico and Tinquico predominate. In this way, tourists seek to alleviate the heat and have fun practicing activities such as kayaking, rafting, swimming, boat rides, catamarans, and launches. On the other hand, this area offers diverse panoramas, since it has a series of national parks enabled for camping and different trekking route Also, it has an exquisite culture with a predominance of the original Mapuche people, so practicing ethnic tourism is one of the preferred options along with gastronomic tourism with the realization of typical gastronomic fairs of the regiones for those who like to connect with nature.

Graphic 1 “Evolution of overnight stays in tourist accommodation establishments in the IX Region”. Overnight stays correspond to the total number of nights that passengers stay in the tourist accommodation establishment. The evolution of overnight stays in the Araucania Region in the corresponding period between the years 2009-2019, shows a marked seasonality in the summer months, December-February, and the winter season June-August, these peaks of visits occur in the summer and winter vacation times, taking advantage of the geographical attributes of the area.

Both national and international tourists within the region have been increasing steadily in terms of overnight stays. However, the national tourist is the most relevant at the industry level since it occupies the largest share of overnight stays in the region, reaching 80% of the total of these; therefore, the remaining 20% of the total overnight stays correspond to foreign tourists.

Graphic 1. Evolution of overnight stays in tourist accommodation establishments in the IX Region.



Source: Own elaboration data taken from INE. 2022.

In Table 2, the variations that have been seen during the years in overnight stays show an increase in comparison to the ones of 2010 to 2017, which had variations ranging from 3% to 30%, reaching a total of 1,487 in 2017. 892 overnight stays, almost doubling the overnight stays in 2010, which was equivalent to 597,793. The years 2018-2019 had negative variations, the number of overnight stays decreased by approximately 400,000 overnight stays.

Chart 2. Annual growth rate of overnight stays in the Araucanía Region.

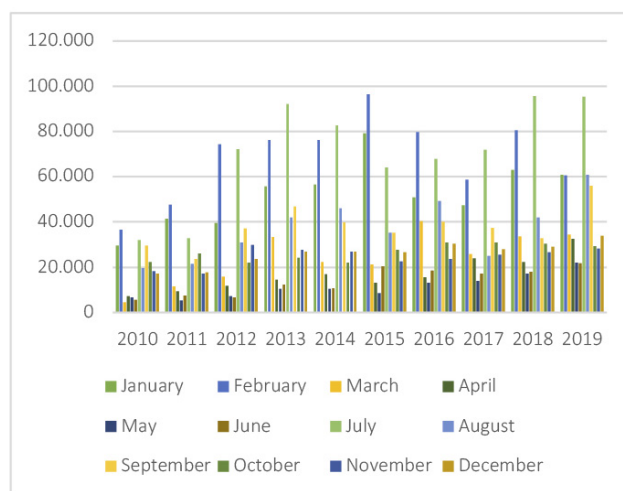
Year	Annual Total	% previous year	Year	Annual Total	% previous year
2009	514.181		2015	941.022	13%
2010	597.793	16%	2016	1.219.344	30%
2011	618.624	3%	2017	1.487.892	22%
2012	719.583	16%	2018	1.375.220	-8%
2013	759.640	6%	2019	1.070.453	-22%
2014	834.023	10%			

Own Elaboration.2022

As observed in Graph 2 "Visitors to Protected Wilderness Areas" (ASPE), each year the number of people who attend these spaces within the region increases. Visitors come for various reasons, to connect with nature, the desire for adventure, rest from the busy city life, observe biodiversity, among other reasons. In La Araucanía, the protected areas include five National Reserves, these are: Villarrica, Malleco, China Muerta, Alto Biobío and Malalcahuello; five National Parks: Conguillío, Villarrica, Tolhuaca, Nahuelbuta and Huerquehue; and a National Monument: Cerro Ñielol. All of these are scenarios that offer enriched landscapes, with different climates and diverse flora and fauna, which is what makes them attractive for people who visit them.

Two periods can be distinguished with the highest increases in visitors. As in graph 1 "Evolution of Overnight Stays IX Region", these increases occur in the months of December to March and June to September, which coincide with the summer and winter seasons in the territory of Chile. These wild areas offer delight with beautiful views of hills and volcanoes, walk through ancient forests of araucarias and other native trees in the area, allows you to contemplate rivers, lakes, lagoons, waterfalls and waterfalls. Moreover, during the summer captivate with their warm colors and in winter they offer a snowy view, they also give rise to the observation of animals, amphibians and birds such as: güiña, pumas, culpeo fox, chilla fox, woodpeckers, peregrine falcon, condor, harriers, peuco nuco, short-stream duck, darwin frog, toad four-eyed, many of which can only be seen in this territory.

Graphic 2. Visitors of protected wild areas in the IX Region.



Source: Own elaboration taking data from CONAF 2022.

(ii) Multiple regression analysis.

In table 3 "Correlations between indicators of climate change (maximum temperature and rainfall) and overnight stays in the Araucanía Region, Chile" it can be interpreted that, in terms of the correlation between overnight stays and rainfall (Y, X1), is -0.337, this indicates that there is an inverse relationship, so that before an increase in rainfall there will be a decrease in tourist overnight stays. Additionally, it could be said that when considering a large amounts of rainfall, it is most likely that the number of tourists arriving in the region will be negatively affected compared to periods in which there is less rainfall. The level of significance is 0.008, it is less than 0.05, which shows that the relationship is very significant, however, the intensity of the relationship is weak, so it is estimated that the rainfall variable by itself does not explain the variation in a good way. variable overnight stays.

The existing correlation between the variables Overnight stays and maximum temperature (Y, X2), is 0.643, it is observed that it is a moderate-high, positive and direct relationship. This indicates that when one variable increases the other also does, so it follows that, given an increase in maximum temperatures, there will be an increase in overnight stays by tourists in the region. The significance is less than 0.05, so there is a very significant relationship. The relationship is high, which indicates that the maxi-

mum temperature variable is capable of explaining the overnight stays variable to a great extent.

Finally, Rainfall and Maximum Temperature (X1, X2), with an index of -0.79, indicates that there is a high and inverse relationship, this indicates that before an increase in maximum temperature there will be a decrease in rainfall. The intensity of the negative relationship is high with a significance level of 0.000 less than 0.05, so it is significant.

Chart 3. Correlations between climate change indicators (maximum temperature and rainfall) and overnight stays in the Araucania Region, Chile.

		Overnight stays	Rainfall	Highest T°
Overnight stays	Pearson	1	-,337**	,643**
	Correlation			
	Sig.		,008	,000
Rainfall	Pearson	-,337**	1	-,790**
	Correlation			
	Sig.	,000		,000
Highest temperatures	Pearson	,643**	-,790**	1
	Correlation			
	Sig.	,000	,000	

Source: Own elaboration - Cálculo del Análisis de Correlación de Pearson, SPSS Statics 21. 2022

Table number. 4 "Description of variables independently" shows the behavior of each variable individually. For the first variable **Overnight stays**, it can be said that on average there are 80,197 bimonthly overnight stays, an average that is above the median, which indicates that there is a greater number of bimonthly stays where overnight stays are lower than high, the typical deviation indicates that the variable moves + 52,836 around the mean, so in short, the variable is in a range 27,361 < 80,197 < 133,033. In the measures of dispersion we find the asymmetry, which with a value over 0 with, 1.308 indicates that the data have a positive asymmetric shape, that is, that the greatest dispersion of data is to the right and the greatest concentration to the left. ; Regarding the value of kurtosis, it is 1.24 > 0, graphically it takes a leptokurtic shape, that is, a shape elongated upwards.

As for the **Rainfall** variable, it can be noted that on average the amount of bimonthly rainfall is equivalent to 83.13 mm. This average is above the median, which suggests

that, like the previous variable, there is a greater number of bimonthly with low numbers than high. Within the measures of dispersion is the standard deviation, which indicates that the variable moves + 57.4 mm. around the mean, so the variable is in a range of 25.73 mm. < 83.13mm. < 140.53mm. Regarding the asymmetry index, it has a value of 0.747, which indicates a positive asymmetry, in terms of kurtosis, the index is -0.496, which graphically tends to a mesokurtic shape, that is, the curve has a normal degree of pointing.

Finally, in the **Highest temperature** variable, it is observed that on average bimonthly it rises to 18.48 ° C and this average is very close to the median, which means that the average of the variable is representative, in terms of its standard deviation which indicates that the variable moves + 5 ° C approximately around the mean, so the variable is in a range of 13.48° < 18.48° < 23.48°. The Asymmetry has a value of 0.198, which rectifies that the mean of the variable is representative, since the value of the asymmetry is very close to 0; Regarding kurtosis, this measure has a value less than 0 > -1.249, which graphically demonstrates a platykurtic shape, that is, a flattened shape, a slightly pronounced curve and without noticeable variations.

Chart 4. Description of variables independently.

	Overnight stays	Highest Temperatures	Rainfall
Mean	80196,6167	18,4875	83,1308
Typical error	6821,15636	0,62242	7,41707
Median	61248	18,6	59,15
Variance	2791690443	23,2446	3300,774838
Typical description	52836,45	4,8213	57,4524
Minimum	19077,5	11,95	0,35
Maximum	240492	27,10	221,95
Asymmetry	1,308	0,198	0,747
Kurtosis	1,242	-1,248	-0,496

Source: Own elaboration. Measures of central tendency of the variables. SPSS Statistics 21. 2022

The coefficient of determination R2, is a measure of goodness of fit, which explains the variability of the dependent variable that is explained by the model, manifests with a 95% accuracy the association of the variables. In other words, for the proposed regression model, with the explanatory variables, maximum temperature and rainfall,

49.2% of the variance of the overnight stays variable is explained, it is an intermediate impact coefficient, that is, moderately low, but considering that the rest of the overnight stays variable could be explained by many other variables and that, since there are no more studies on the same, it is considered valid to continue with the model, in order to allow the existence of a base model for possible future studies.

Regarding the Durbin-Watson indicator, it helps us to verify autocorrelation. This analysis is necessary to verify that one variable is not contained in another, since this situation brings with it an oversizing or inflation of the R2, Ra2 and Anova indicators, which would finally result in a loss of reliability in the model, that is, under this framework the estimates will not be true and/or will not be close to reality. This coefficient takes as measurement scale the following ranges; $Dw. = 2$ there is no autocorrelation; $1.5 \leq Dw. \leq 2.5$ exists, but does not damage the model; $3 \geq Dw.$ there is autocorrelation. Based on the above, the Durbin-Watson statistic applied to the model has a magnitude of 1.947, that is, it is in the range where there is no autocorrelation between the variables. See chart 5.

Chart 5. Summary of the model.

R	0.701
R squared	0.492
R corrected square	0.474
Estimacion error	38315,105273
Durbin-Watson	1,947

Source: Own elaboration, SPSS Statistics 21. 2022

Table 6 shows the ANOVA, this through significance measures the sensitivity of the variables, for the regression model studied. In this case, it indicates that it significantly improves the prediction of the dependent variable overnight stays, with a p-value of 0.000 less than 0.05, so when executing the hypothesis test: H_0 = The variables are independent and H_1 = The variables are not independent, H_0 is rejected and H_1 is accepted, with $Sig. 0.000 < 0.05$, it is estimated that the variables explanatory maximum temperature and rainfall are linearly related to the dependent variable overnight stays and therefore the model can be continued.

Chart 6. ANOVA

	Suma de cuadrados	gl	Media cuadrática	F	Sig.
Regression	8103104048 4,817200	2	40515520242,4 08600	27,5 9823	0,00
Residual	8367869564 7,866120	57	1468047292,06 7827		
Total	1647097361 32,683320	29			

Source: Own elaboration, SPSS Statistics 21. 2022

In Table 7 "Model coefficients, part 1", the non-standardized coefficients will help us to formulate the model equation (see figure 1. Model equation). The standardized coefficients indicate that the most powerful variable for the model corresponds to the maximum temperature and then the precipitation variable.

For the coefficients of the regression model, the "t" scores indicate that the variables considered contribute significantly to the model, since there is statistical evidence that the maximum temperature and rainfall influence overnight stays, since H_0 is rejected in each situation, with significances 0.005 and 0.000 respectively, which are lower than the alpha of 0.05.

Regarding beta, it indicates the behavior of the variables as a whole. Therefore, the most important variable for the model is "maximum temperature", which has a beta of 1.002890 while the second variable "precipitations has a beta of 0.455045, therefore, it shows us that the variable temperature maximum does not have a good relationship with the other variable as a whole.

Chart 7. Model coefficients, part 1

Not standardized coef		Typified coef.	t	Sig.
B	Error	Beta		
Consta	-	41416,13	-	0,000
nt	157782,970 53	361	3,8096	
Rainfall	418,484718	141,5606 15	0,455045	2,9562 0,005
Highest	10990,7020	1686,898	1,002890	6,5153 0,000
temper	34	996	2	
ature				

Source: Own elaboration, SPSS Statistics 21. 2022

The zero-order correlation states the relationship that each explanatory variable "X" (rainfall and maximum temperature) has on its own with respect to the study variable "Y" (overnight stays). Table 8 "Coefficients of the model, part 2" indicates that maximum temperature has a relationship strength of 64.3%. Consequently, it is the one that has the greatest relationship with overnight stays and below it is followed by rainfall with -33.7%. . See table 8.

It is known that the order of entry of the variables generates a modification in the relationship that each of them has, this order can affect the behavior by increasing or decreasing. In addition, in the partial correlations, the correlation between two variables is interpreted, keeping the third constant, that is, with fixed data to remove the effects of that third variable on the model, but without eliminating it. In this case, as maximum temperature, it is the one that has the greatest relationship with overnight stays, it is the first strong variable that enters the model. Then, in the presence of maximum temperature, the model in general is affected, increasing from 64.3% to 65.3% in the presence of the other variable (rainfall), although it is not such a significant increase, it indicates that the method works correctly. The same happens with rainfall, if this variable entered first, counting on the presence of the maximum temperature variable, the strength of the relationship with overnight stays increases from -33.7% to 36.4%, however, in this way It is verified that the best option is to introduce the maximum temperature variable into the model first, since although there is a significant increase in the relationship, the explanatory percentage is still higher when the maximum temperature variable enters the model first.

Finally, the semi-partial correlation explains the behavior of the model and the percentage that manages to interpret the second variable in the presence of the first. In this case, we have already defined that maximum temperature was the first variable to be introduced into the model, so that, with the entry into the model of the second rainfall variable, the relationships with overnight stays were modified as follows: maximum temperature decreases its relationship with overnight stays at 61.5%, while rainfall decreases to 27.9%. With these data, it is again demonstrated that there is a greater relationship between the variables when the maximum temperature variable enters the model first, since that is when the relationship of all the variables with res-

pect to overnight stays is higher, recognizing that this is the best model, since with the presence of both explanatory variables it is possible to better explain the study variable.

Tabla 8. Coeficientes del modelo, parte 2.

Modelo	Correlaciones		
	Orden cero	Parcial	Semiparcial
Constante			
Temperatura	0,643483	0,653334	0,615101
Máxima			
Precipitaciones	-0,337065	0,364607	0,279092

Fuente: Elaboración propia, SPSS Statistics 21. 2022

Figure 1 "Equation of the model", shows the equation of the multiple linear regression model, in which, mathematically speaking, when rainfall and maximum temperature tend to zero, it can be deduced that overnight stays in Araucanía would be zero, since the constant is -15.7823. For the case of b1= 418.48 rainfall, when rainfall is increased by one millimeter, keeping everything constant, the overnight stays increase by 418 and for b2= 10,990.70 maximum temperature, if the temperature increases by one unit, overnight stays will increase by 10,991 overnight stays, keeping everything else constant.

Figure 1. Model equation:

$$Y_{(Turismo/cc)} = -157782,97 + 418,48 + 10990,70tm + \mu$$

According to Table 9 "Collinearity statistics" the inflation factors of the variance of each variable are less than 10, so there is statistical evidence that there is no multicollinearity. For collinearity to exist, the tolerance must be close to zero and VIF ≥ 10.

With this assumption it can be seen that there is no collinearity between the maximum temperature and rainfall variables since the maximum temperature variable has a tolerance of 0.376173 far from zero with a VIF of 2.6583 less than 10 and the rainfall variable has a tolerance of 0.37617 far from zero with a VIF of 2.6583.

Chart 9. Collinearity statistic.

	Confidence intervals of 95%		Collinearity statistics	
	Lower limit	Upper limit	Tol.	VIF
ConstaNT	-240717,347559	-		
		74848,59350		
Rainfall	135,014476	701,954960	0,37617	2,6583
Highest temperature	7612,745062	14368,65900	0,37617	2,6583

Source: Own elaboration, SPSS Statistics 21. 2022

A Kolmogorov-Smirnov test is performed, which belongs to the group of goodness-of-fit tests, applied to the residuals and is a test that allows to verify whether the sample scores follow a normal distribution or not, that is, that corroborate the existence of normality in the sample.

For this, two hypotheses are established:

- H0: the distribution is normal.
- H1: the distribution is not normal.

Chart 10. Normality tests

Estadistics	Kolmogorov-Smirnov	
	gl	Sig.
0,091	60	0,20

Source : Own elaboration, SPSS Statistics 21. 2022

To verify this, statistically the p-value, must be greater than the alpha, that is, greater than 0.005. In this case $0.020 > 0.005$ for which H0 is not rejected, from this it is inferred that there is statistical evidence that the sample and the residuals are normal. See table 10.

DISCUSSION

According to the obtained data the impact of climate change in the tourism sector is manifested in the loss of natural tourist attractions and the increase in extreme events, which dissuade tourists from visiting the country taking into account that nature is the main travel reason why tourists decide to visit Chile. Therefore, the variation in temperatures and rainfall, the loss of biodiversity and the occurrence of extreme weather events are considered threats of climate change that affect the tourism sector.

In words of the Study Center of the Pontificia Universidad

Católica de Chile, "Climate change represents one of the greatest threats facing modern society. However, our ability to perceive the signals of environmental changes and their impacts on the functioning of complex systems is quite limited, which usually results in late and incomplete responses that ultimately, in the case of climate change, they allow the most pessimistic scenarios of greenhouse gas emissions to become feasible, as well as their worst consequences" (UC Global Change Center, 2014). These consequences can be presented in various ways, such as; a rise in sea level, ocean acidification, accelerated melting of glaciers, polar ice caps, and continental ice sheets; the migration and extinction of species of flora and fauna; changes in the climate system, especially in precipitation regimes, changes in flow regimes and freshwater terrestrial systems, changes in the frequency and intensity of extreme weather events, changes in crop productivity, among others (Center UC Global Change, 2014).

For Chile, a country with high tourist attractiveness both nationally and internationally, recognized by the World Travel Awards as the Best Adventure Tourism Destination in the world continuously since 2016 (World Travel Awards, 2022). The weather is an important factor for the development of the tourism industry. The climate is a determining condition of this type of heritage, since its characteristics give life to the offer and tourist attractions of nature, as well as conditioning the seasonality of tourism throughout the country. Undoubtedly, climate change entails impacts on nature, where its correlation with the behavior of local and receptive tourists is a great unknown, which will generate a geographic and seasonal redistribution of visitor flows, putting the national tourism industry at risk " (Ministry of the Environment, 2020). The way in which climate change manifests itself will have repercussions on tourism, both in tourist destinations and in tourists, because some activities are especially sensitive to climate, such as skiing (lack of snow), going to the beach (cold), fishing (wind). Climate is the support for tourism and the most important element in the tourism product. At the same time, the climate contains a factor of risk since it can prevent tourists from carrying out any activity or simply stop going to a tourist destination (Ivanova, 2010).

In fact, climate change, far from stalking tourism as a remote future threat, is already beginning to leave its mark in different ways on destinations around the world and is influencing current decisions in the tourism sector (UNWTO, 2007a). The Intergovernmental Panel on Climate

Change (IPCC) in 2007 concluded that there will also be changes in extreme events as a result of climate change. This will include higher maximum temperatures, more hot days, greater intensity of cyclones and hurricanes, changes in precipitation, as well as longer and more severe droughts in various regions worldwide (Ivanova, 2010).

The Ministry of the Environment, together with other national and international organizations, developed an Atlas of Climate Risks for Chile (ARClím), which consists of a platform that allows observing a set of risk maps related to climate change for Chile, considering the impact of climate change between historical periods (1981-2010) and future periods (2035-2060). In this way, for the tourism sector, 4 impact chains are expected: loss of winter tourist attractions in high mountain centers, loss of tourist attractions due to forest fires, erosion on beaches and loss of tourist attraction in sun and beach destinations. (Ministry of the Environment, 2020). All these are scenarios that are already manifesting in the area.

The Araucanía region "is one of the rainiest regions in Chile; however, in ten years the reality for the inhabitants of La Araucanía has had a substantial change" (Navarro, 2017), that one of the rainiest regions of Chile is in rainfall deficit can only mean that what is affecting the planet it is already something serious, due to the absence of water it can cause the lakes and rivers to begin to dry up along with all the abundant vegetation that, precisely, is what makes the region attractive. This in the future may mean a decrease in the arrival of tourists to the area.

A clear example corresponds to the decrease in the waters of Lake Caburgua in the commune of Pucón. Lake Caburgua is one of the most desired beaches by tourists, in 2017 the low level of water in its flow became evident, for which the mayor of the area promised to conduct an investigation in order to find its origin, which later remained unspecified. In 2021, the investigation was resumed by an Agreement between the Association for the Protection and Conservation of Lake Caburgua and the Austral University, which showed that "the hydroclimatic variables show downward trends in recent years, an issue that supports the decrease in level of Lake Caburgua. However, the diversion of the waters of the Trafampulli, which until 2009 discharged part of its waters into the lake, exacerbates the climatic effect in the lowering of the lake's level" (Ulloa & Iroumé, 2021). If this situation continues, it will bring with it very serious consequences for the entire en-

vironment, beginning with alterations to the ecosystem of the flora and fauna that resides and directly affecting the economy of the people who are dedicated to the marketing of tourism in the commune.

On the other hand, "in Chile the increase over the average temperature trend has been constant mainly in recent years, a linear trend of +0.14 °C per decade has been observed" (Dirección Meteorológica de Chile, 2021). Since 2011 the years have been consecutively warmer than normal. The historical data record increases in temperatures in the central valley and the mountain range, while the coastal stations indicate a slight cooling, although without statistical significance. (Chilean Meteorological Directorate, 2021). In this sense, Chile and therefore the Araucanía region, has been tremendously affected by these rises in temperature. Although it is true, tourism is an area that benefits from high temperatures in summer, this is because at this time the tourist seeks good weather to be able to choose their destinations and practice activities. In addition, there are other effects of the rise of temperatures in tourist destinations that negatively affect tourism, translating these effects into the progressive decrease of snow resources and water resources available to the population and the ecosystems dependent on it.

Protected wilderness areas in the region have been affected by climate change. In recent times, different forest fires have been witnessed at the regional level, which completely modify the tourist attractions of these areas. These fires are not only caused by the action of the human being, since it has been proved that in 2015, Tolhuaca National Park was affected by electrical storms that attacked the region, phenomena that are not common in this area, causing a large-scale fire. In addition to these events, there are other factors that affect wetlands, flowering processes, flora and fauna. These areas are undergoing very gigantic transformation processes, which will generate in the medium term that tourism will be much more affected by these situations. Undoubtedly, the diversity of landscapes that it offers, from mountains with volcanoes, streams and lakes, to the great vegetation and varied fauna, which will clearly be modified. In addition, as high temperatures create the right environment for the initiation and subsequent spread of fires, this means that each summer season the ONEMI must declare preventive alerts. All of the above is due to the fact that the earth's temperature has been increasing uncontrollably over the last few years, in fact, the annual global land and ocean temperature has

increased by 0.08°C per decade since 1880, while since 1981 the rate has increased to 0.18°C per decade, according to the annual climate change reports prepared by the Climate Change Office of the Climatology Section of the Chilean Meteorological Directorate.

It is essential to mention that these relevant facts regarding the climate affect water resources. In 2011, the MOP (Ministry of Public Works) published the ENRH (National Strategy for Water Resources 2012-2025) since, within the global context, Chile is considered a privileged country in terms of water resources. There are 1,251 rivers, more than 15,000 lakes and lagoons, which contain good quality water and are regulators of the flows in the basins, it also has great availability of groundwater, which as a whole, exceeds 8 times the world average per available capita, however, according to a study by the OECD (Organization for Economic Cooperation and Development) Chile is the country with the greatest diversity of administrative authorities involved in the management of this resource, so it is necessary to regulate in some way and considering that economically, Chile projected a growth rate of between 4% and 5% for the year 2013, it was inevitable to carry out an action that would mitigate the effects produced by the growth of productive sectors dependent on water.

The effects that the advance of climate change has caused in the world are varied and clearly the Araucanía region is not exempt from this, the increase in temperature has caused that in winter times, all week rains and snow, sunny and warm days are given, which are convenient for economic sectors such as tourism. On the contrary, a negative scenery for forestry, agricultural and livestock sectors, even more prejudicial for the ecosystem and biodiversity that inhabits the area. Perfect scenarios are developed for severe climatic events to occur, such as: droughts and the start of forest fires due to heat waves. Therefore, it is necessary that the authorities concern themselves with developing ecological awareness in society and inculcate respect for nature, promoting measures that seek preservation and conservation in all that this encompasses.

To face this situation, several countries, including Chile, have agreed to work together through international assemblies, such as; The United Nations Framework Convention on Climate Change, this consists of a treaty that establishes the basic obligations to combat climate change, in which 196 countries participated plus the countries that make up the European Union, it was signed at

the Earth Summit in 1992 and entered into force in 1994, where Chile joined the same year. Another instance, corresponds to the Paris Agreement, signed in December 2015 and adopted by 195 countries, where it aims to limit the increase in temperature below 2 °C compared to the pre-industrial era, and ideally limit this increase to a maximum of 1.5°C., Chile ratified the Paris Agreement in February 2017. Likewise, the Conference of the Parties (COP) is held, which is a supreme decision-making body of the Convention, the countries meet annually to review the progress in the implementation of the Convention where other instruments are proposed, evaluated and approved. support its establishment.

All the guidelines set out in international assemblies to curb climate change are adopted by the Chilean Ministry of the Environment, created in 2012, which "is the State body in charge of collaborating with the President of the Republic in the design and application of policies, plans and programs in environmental matters, as well as in the protection and conservation of biological diversity and renewable natural and water resources, promoting sustainable development, the integrity of environmental policy and its normative regulation" (Ministry of Environment, 2014). This is how, through this body, mitigation and adaptation plans have been implemented. The first, with actions, measures or activities that seek to reduce the sources of greenhouse gas emissions and the second with actions, measures or activities that seek to reduce the vulnerability of natural and human systems, moderating the negative impacts and/or taking advantage of the beneficial effects.

Nowadays, climate evolution reports are made annually, which have been developed within the framework of the National Climate Change Action Plan 2017-2022, committed by Chile before the United Nations Framework Convention on Climate Change, to comply with with the specific objective "Improve the monitoring system of the main climatic variables at the national level as an information base for the monitoring of climatic evolution in Chile" (Ministry of the Environment, 2017a).

CONCLUSION

Araucanía is a rich country in diversity of attractive natural areas for people, due to its type of climate, geography and lakes. In this region you can see the sea and the mountain range in a few hours, ski looking at a lake, enjoy the

hot springs, attend the various charms of the cities: such as museums, casinos, churches, among others, access a wide range of restaurants, visit the Italian colonizing experience and get to know the culture of the Mapuche people, the activities that can be carried out are varied and at any time of the year.

In the present study, the proposed model showed as a result that climate change does have an impact on tourism in the Araucanía region with a corrected R square of 47.4% and that this turns out to be positive, that is, more people arrive due to high temperatures caused by climate change. This can be understood because the region is very abundant in lakes, making it the ideal place to cool off. Although the R-squared corrected for the model is not that good, it is effective for performing the analysis thanks to an anova with a significance level of 0.000 rejecting H_0 = the variables are independent and accepting H_1 = the variables are dependent. This indicates that the X variables are sensitive to the increase in overnight stays (Y) and, in turn, are the variables that best explain the model. As for beta, it indicates the behavior of the variables as a whole. Therefore, the most important variable for the model is "maximum temperature", which has a beta of 1.002890 while the second variable "precipitations" has a beta of 0.455045 which again indicates that temperatures high are the factor that most influences tourism in a positive way.

Regarding the variables x and y, their level of collinearity can be said that, although it exists, with a Durbin-Watson of 1.947 and a significance between the variables of 0.000, it does not affect the model and this can be corroborated with the tolerance level and VIF of the variables. For maximum temperature the tolerance is = 0.522 and VIF=1.914, in the same way for rainfall with a tolerance= 0.376173 and VIF=2.65835. Staying in the ranges where there is no collinearity. Therefore, accurate or close to reality estimates can be expected when the model is applied, since the analysis shows that there are no variables that contain another, so it is not necessary to eliminate variables, make measurement changes in them or modify the sample section.

On the other hand, in the region, according to the data collected, the greatest arrival of tourists occurs in the summer months, December-February and winter season June-August, they occur in the summer and winter vacation season, it is shown a marked seasonality in the years corresponding to 2010-2019; it can be attributed to

the tourist attributes and multiple tourist services of the region. This, today, generates a positive impact for the tourism industry and the economy, generating a greater presence of people in the various attractions of the area (volcano, lakes, parks, reserves, etc.) and in turn generates work, since it is labor intensive, especially for women and young people, it encourages entrepreneurship and innovation, promoting local development.

Based on the previous studies and bibliographic sources, it can also be concluded that climate change has affected tourism in the region of La Araucanía, due to the fact that its natural attractions have intervened, as is the case of forest fires which are considered extreme events of climate change and have affected national parks such as the P.N. Tolhuaca. Similarly, Lake Caburgua waters decrease, which is attributed to rainfall, to the intervention of the human being to the increase in temperatures in the region, which has caused changes in the biodiversity of the area. All these effects cause a chain of events that begin with the change in the ecosystem, with an associated decrease in the attractiveness of the area, therefore a decrease in the attendance to these places.

According to the statistical results, there is no effect of climate change on the fluctuations of tourism in the selected period in La Araucanía, this is possibly due to the fact that there is no effect of the maximum temperature variable on overnight stays (tourism), or to the fact that temperatures do not have a relationship in the fluctuations of tourism. This can be explained by causality, since in the times when there is a greater fluctuation of tourists it is also where the vacation period exists, which generates in itself an increase in tourist demand in the region. Whether in summer or winter, so it would be more related to a cause and effect situation.

Tourism in 2019 contributed 3.3% of GDP to the Chilean economy, which is equivalent to \$6,489 billion according to SERNATUR data. Tourism for Chile, may become one of the main economic activities in the future, as is the exploitation of copper today, but with relevant difference, since it grows with a strong added value and generates dynamic effects at all levels of the country. If it is not maintained and continues to develop in a sustainable way, a great opportunity would be wasted, since the impacts that climate change can generate can be serious, generalized and irreversible in people and ecosystems. However, today they are working on options to mitigate its effects in

Chile and several countries worldwide, so that the impacts of climate change remain controllable, creating a clearer and more sustainable future.

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Governance issues around agricultural land use and water demand for irrigation in the Vinces river basin (Ecuador)

Problemas de gobernanza en torno al uso agrícola del suelo y la demanda de agua para riego en la cuenca del río Vinces (Ecuador)

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Received: 2022-08-19

Accepted for publication: 2022-11-01

Published: 2022-12-31

ABSTRACT

The Vinces river basin has a high agricultural aptitude, this has allowed the intensive development of agricultural crops that provide a significant amount of foreign exchange for the country at the cost of strong pressure on the water resource for irrigation and that have displaced important native vegetation. In this context, it is necessary to exercise governance in such a way as to guarantee the management and territorial development of the basin. The objective of this work is to identify the governance problems related to the agricultural use of the land and the demand for water for irrigation of crops in the Vinces river basin. The present investigation entailed the analysis of the current situation of the general administration of the water basins in Ecuador and especially of this important basin in the center of the country, the analysis of the conceptual frameworks of governance and the compilation of digital geoinformation with its subsequent processing in Geographic Information Systems, the tabulation of official statistical information and field verification of the management of agricultural crops. The main agricultural coverage of the basin under study expressed by the agricultural crops of banana, cocoa and oil palm exert great pressure for the space and water of the basin for irrigation in the long period of summer drought. The figures collected from the historical water concessions for irrigation of the basin by the environmental authority do not reflect the true volume used by the agricultural sector

Keywords: Basin, Hydrographic Demarcation, Agricultural Crops, Governance, GIS.

RESUMEN

La cuenca del río Vinces presenta una alta aptitud agrícola, esto ha permitido el desarrollo intensivo cultivos agrícolas que aportan una cantidad importante de divisas para el país a costo de una fuerte presión sobre el recurso hídrico para su riego y que han desplazado importante vegetación nativa. En este contexto es necesario ejercer una gobernanza de forma tal que garantice el manejo y desarrollo territorial de la cuenca. El presente trabajo tiene por objetivo identificar los problemas de gobernanza relacionados con el uso agrícola del suelo y la demanda de agua para riego de los cultivos en la cuenca del río Vinces. La presente investigación conllevó el análisis de la situación actual de la administración general de las cuencas hídricas en Ecuador y de manera especial de esta importante cuenca del centro del país, el análisis de los marcos conceptuales de gobernanza y la recopilación de geoinformación digital con su posterior procesamiento en Sistemas de Información Geográfica, la tabulación de información estadística oficial y verificación en terreno del manejo de los cultivos agrícolas. Las coberturas agrícolas principales de la cuenca en estudio expresadas por los cultivos agrícolas de banano, cacao y palma aceitera ejercen gran presión por el espacio y el agua de la cuenca para el riego en el largo periodo de estiaje de verano. Las cifras que recoge las concesiones históricas de agua para riego de la cuenca por parte de la autoridad ambiental no reflejan el verdadero volumen empleado por el sector agrícola.

Palabras clave: Cuenca, Demarcación Hidrográfica, Cultivos Agrícolas, Gobernanza, SIG.

INTRODUCTION

In a first approximation, governance is a way of governing, that is, a process that favors state-society interactions. As is known, the state space is not its only field of application or meaning. In general, the notion of governance designates the set of institutional procedures, power relations and modes of management, public or private, formal and informal, that regulate the action of political bodies (Mazurek et al., 2009).

Governance is defined as the process of interaction between strategic actors, with a more sociological and political key due to the play of institutions and organizations, according to (Leca, 1996: 339), it is "the interaction of a plurality of governing actors who are not all state or even public", being the criteria of good governance transparency, participation and accountability, thus opening the possibility of carrying out transactions in an environment where collective rules are elaborated, decided, legitimized, implemented and controlled by these actors.

According to Albo and Falconi (2009), it is the intermediate level of decentralization that allows a better systemic and intersectoral vision of public management at the territorial level. For this, they define four axes of actions: i) the coordination and articulation of the demand at an integrated territorial level such as the hydrographic basin; ii) administration of public resources to achieve territorial economic development; iii) the articulation of power between actors in the territory; iv) the construction of a shared territorial vision. The construction of a territorial social pact, spaces for agreement and dialogue are essential conditions for the generation of governability. The ultimate goal lies in promoting territorial competitiveness and sustainable human development. This brief introduction allows to establish an analysis grid that helps a deeper understanding of water problems. Similar to the proposal by the Integrated Management of Water Resources assuming its postulates but emphasizing the multiple actors and agents involved.

In Ecuador, the existence of self-sufficient public organizations is evident, with a low degree of coordination of actions among themselves and no coordination with private actors and civil society. Municipalities, universities, unions, the provincial council, private companies, ministerial directorates, act without seeking coordination with other actors, which generates inefficiency and duplication

of efforts. Hence, strengthening the intermediate level of government is key, so that development policies and projects do not remain isolated initiatives and/or documents that are not executed.

In the definition of intermediate government, the territorial vision is highly relevant. This concept is what contributes to the systemic and intersectoral vision of public management at the territorial level. In this sense, the territory is defined as the space of human fulfillment, of social construction; with cultural, political, social and economic ties, which is not limited to the political division of the State. In this definition, it should be noted that the construction of territories is not restricted to the provincial or local administrative sphere, but that actors can be articulated to intervene and manage a space based on hydrographic basins, commonwealths, ecological regions (paramos, mangroves, etc.), cultural and political affinities.

Through Executive Decree No. 90, it is established that the integrated management of water resources will be exercised in a decentralized manner by hydrographic demarcations, basins or sub-basins, through the water resources management agencies by hydrographic basin and their respective authority, which will be established by the National Secretary of Water and its functions, attributions and competences will be established in the functional organic regulation of the entity (SENAGUA, 2010).

The objective of this work is to identify the governance problems related to the agricultural use of the land and the demand for water for irrigation of crops in the Vines river basin.

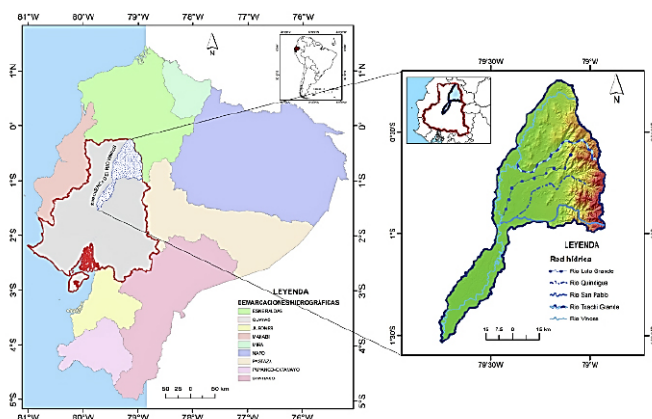
MATERIALS AND METHODS

Study area

Through Agreement No. 2010-66, the National Secretary for Water establishes and delimits nine hydrographic demarcations, within which is the Guayas Hydrographic Demarcation (Figure 1a) whose limits are: a) NORTH: Latitude 0°14'48.29" S; Longitude 79°22'37.55" W; b) SOUTH: Latitude 2°51'7.52" S; Longitude 79°18'11.51" W; c) EAST: Latitude 2°6'35.75" S; Longitude 78°37'20.26" W; and, d) WEST: Latitude 2°11'6.87" S; Longitude 81° 0'31.57" W. The Guayas Demarcation will have the Quevedo Zonal Center that will be in charge of: the lower, middle and upper basin of the Juján River, lower, middle and upper

basin of the Vincennes river (Figure 1b), upper basin of the Bahahoyo river, basin of the Quevedo river, basins of the Los Amarillos, La Soledad, San Antonio, San Pablo, Lulú, Toachi Grande, Baba, Las Juntas, Catarama, Simbe, Lechugal, Umbe and the Ñauza, Convento, Chilintomo Grande and Las Saibas estuaries.

Figure 1. a) Guayas Hydrographic Demarcation and b) Vinces river basin.



The Vines river basin is located from the center to the north-east of the Guayas hydrographic demarcation, with an area of 426,800 hectares, covering 267.96 km of distance in its main water axis, running north-south (Figure 1b). The Baba, Lulo and San Pablo rivers flow towards it. Administratively, the basin includes the provinces of Santo Domingo de los Tsáchilas, Cotopaxi and Los Ríos, it has an eminently agricultural land use with the presence of tropical and subtropical export crops such as abacá, rice, bananas, coffee, cocoa, corn, oil palm among others.

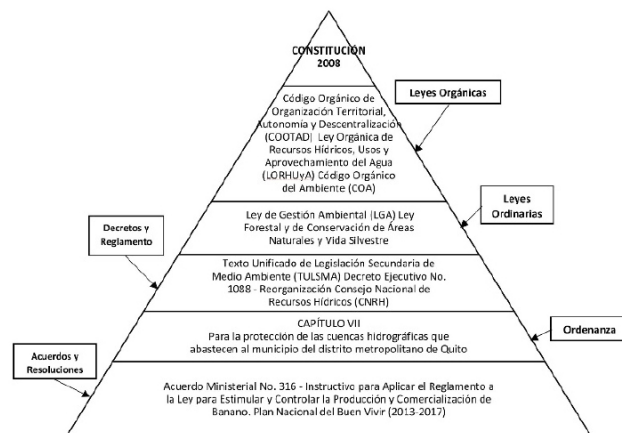
The analysis of the problem of governance of the use of agricultural land in the basin will be addressed by analyzing the map of actors and the current regulations related to the management of watersheds in Ecuador, then the conceptual framework of governance that must be applied will be defined. to the management of the Vinces river basin. The current use of the soil in the study area will be carried out based on the MAGAP project (2014), estimating the demand for water for irrigation by the main agricultural crops in the basin based on the analysis of the concessions granted to the users of the basin by the Secretariat of Water (SENAGUA) in recent decades. Data were also taken from the Regional Hydraulic Plan of the Guayas Hy-

drographic Demarcation (CISPRD, 2016) corresponding to the water supply and demand for irrigation of agricultural crops in the basin under study, data that will be analyzed together with the surface of the main crops. of the Vincennes river basin (MAGAP, 2014) considering the irrigation requirements per ha/year, especially in the summer season, which required extensive verification in the field.

RESULTS

The regulations for watershed management in Ecuador applied the Kelsen scheme (Reyes, 2013). This scheme is based on the hierarchy of legal norms as established by the 2008 Constitution, followed by the different legal bodies applicable to the issue of watershed management in Ecuador (Figure 2).

Figure 2. Kelsen's pyramid of the applicable legal framework in Ecuador.



Within the legal regulations in force in Ecuador, the one that stands out for its relationship with the agricultural use of the Vinces river basin is the Ministerial Agreement No. 316 of April 16, 2004, which includes the Codification of the Law to Stimulate and Control the Production and Marketing of Banana, Plantain (Barraganete) and other related musaceae intended for export, in this regard Chapter V in its General Provisions in Article 25 states:

It is prohibited to carry out new plantings of bananas. Its transgression will give rise to the application of the sanction contemplated in the Reformatory Law to the Law to Stimulate and Control the Production and Commercialization of Bananas, Plantains (barraganete) and other related

mushrooms destined for export. The sanction will be one hundred and fifty (150) minimum general living wages per hectare, as provided by the law issued on July 24, 1997 and published in Official Gazette No. 124 of August 6, 1997. Reference is made to the fact that banana plantations classified as organic, planted until the date of issuance of these regulations, will be registered with the area planted to date and will not be the subject of any sanction.

The Municipal GAD (Decentralized Autonomous Government) of the canton of Valencia, whose jurisdiction is entirely within the Vines river basin, stands out from the rest of the cantonal GADs of the basin for having in force the reform of the ordinance that declares the protection and management of hydrographic basins and micro-basins of the Valencia canton so that in the rural sector a protection

zone or protection strip is declared and no type of construction is allowed according to the following category: Rivers 30 meters; Flow estuaries in winter and summer 15 meters; Flow estuaries only in winter 10 meters; Medium flow estuary 9 meters; Estuary of little flow 6 meters; Rising stream (stream) 3 meters; Ravines 10 meters; Large sink slope 50 meters in diameter around; Small sink slopes (water hole) 25 meters in diameter around; Lagoons and lakes 10 meters from its shore.

The Ordinance mentions that the aforementioned protection margins must be planted by native species, for which a tax exemption will be applied from the property taxes of those protected areas but if, on the contrary, those strips are occupied with banana or African palm crops, the surcharge will be 300% on property taxes.

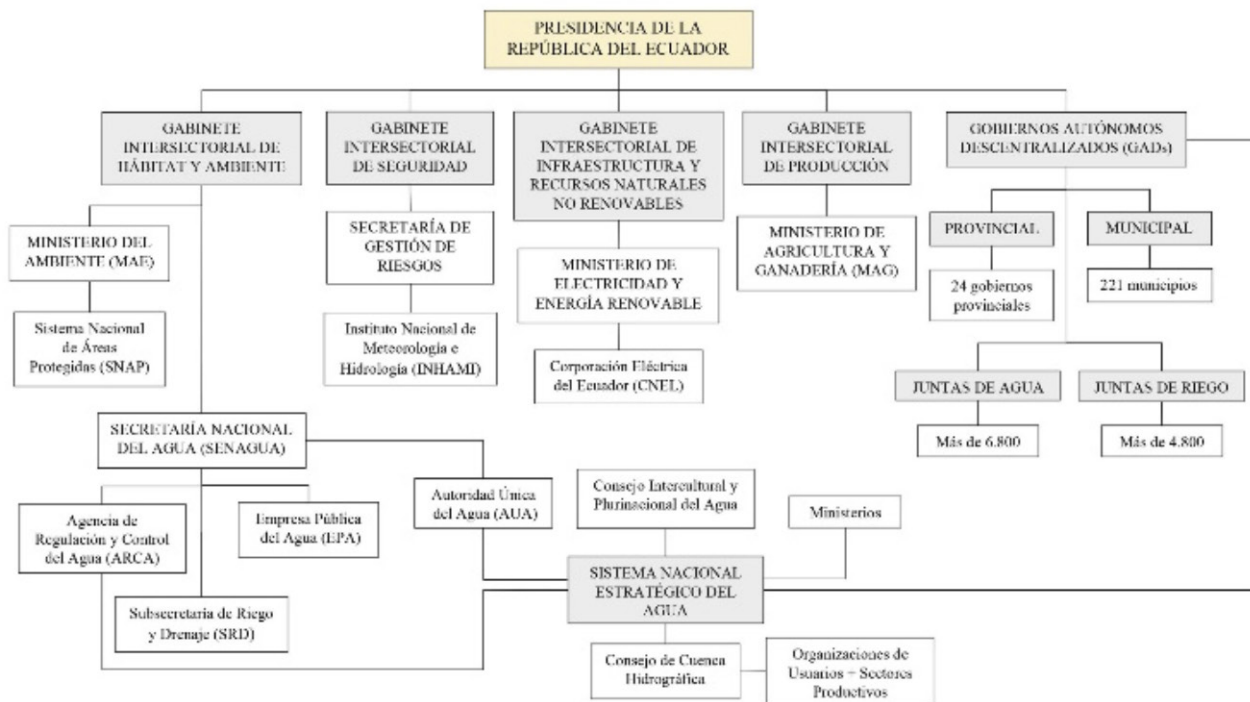


Figura 3. Mapa de actores políticos actuales en la administración de las cuencas hidrográficas en Ecuador.

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According to the PPRD (2016) the legal frameworks ratify the Secretary of Water, as the sole authority of the country's Water Resources, through its EPA and ARCA agencies, while the Ministry of Agriculture, Livestock, Aquaculture and Fisheries (MAGAP), through the Undersecretary of Irrigation and Drainage (SRD), is designated as responsible at the national level for the use of Water Resources in Irrigation and Drainage, oriented to parcel irrigation at the national level, productive promotion and food sovereignty, in the same way The MAE assumes the responsibility of directing environmental regulations, and in emergencies, the General Secretary of Risks will assume leadership.

In the current scheme of political actors linked to the management of hydrographic basins from the point of view of the use of water resources in the Vinces river basin, institutions such as the MAE, MAGAP, the provincial GADs and the cantonal GADs have direct influence. However, regarding the management of agricultural land use in the Vinces river basin (Figure 5, Table 1), there is currently no institution that is fully in charge of this aspect.

For the lack of governance in the management of agricultural land use in the Vinces river basin, we will start from the concept of governance with a territorial ordering framework. According to Mazurek (2009), decentralization opens the doors to the concept of territory and land use planning, posing new challenges. Firstly, to have a territorial vision, secondly, to have governance and governance instruments for the territory, and thirdly, to implement a territorial development strategy.

According to Abdo - Falconi (2019), the reform of the State must include the institutionalization and strengthening of the role of the intermediate level of government, necessary to advance the development of the country from the territories, promoting the construction of a new model of provincial decentralized public management. , territorial

and national because modern democracy not only requires effective and active decentralization, but also efficient management and accountability to society.

In Ecuador, at least 18 of the 22 provincial GAD Provincial Autonomous Governments have provincial development plans at different levels, most of which have not been implemented, and it is necessary for their execution to strengthen the institutional capacities of the territories and decisively promote decentralization and state reform.

In order for the Provincial Autonomous Government of Los Ríos, GPDLR, to be able to apply efficient governance on agricultural land use in the Vinces river basin, it is necessary to empower this intermediate government, for this purpose CONCOPE, which is the representative political organization responsible for promoting the development of the province, through the formulation of public policies, the management of the territory, the construction of governance between actors and levels of government, the promotion of Economic Development and Sustainable Human Development, this objective image of CONCOPE in practice it is not fulfilled, therefore the solution is to promote certain strategic processes that support the approval of a new Provincial Regime Law; progressively assume new roles and competencies through the decentralization process; institutional strengthening; and, advance in the challenge of a new State structure, based on a decentralized public management model.

The GPDLR, in its capacity as intermediate government, must comply with four lines of action: The first includes the management of hydrographic basins and micro-basins, where its function is to order and articulate an adequate use and preservation of water resources; additionally, the management of natural resources and provincial information systems. The second axis is to manage public resources and provide quality services, for which it must manage revenues transparently and provide quick and timely solutions to complaints about the administration and operation of cantonal councils. The third axis is the articulation of power, one of the most relevant; For this, it will be necessary to gradually transfer the provision of services to the closest level of management, and that the provincial governments focus on the horizontal and vertical articulation of actors, between different levels of government and between actors in the territory. . The fourth axis is related to the direction of development and the construction of governability from the territories, through employment

generation and redistribution policies; the implementation of provincial participatory planning systems and the consensual construction of provincial agendas.

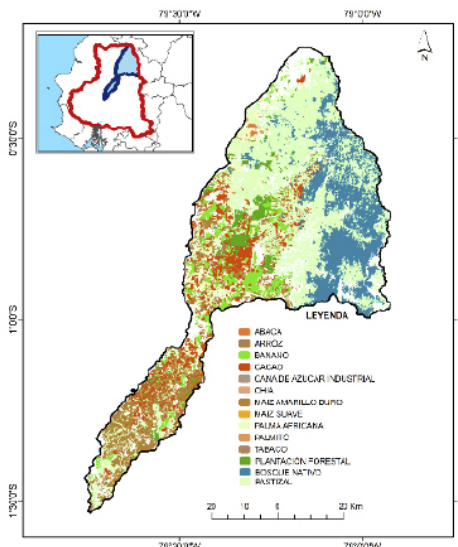


Figura 4. Uso agrícola de la cuenca del río Vices (MAGAP, 2014).

CULTIVO	SUPERFICIE (HA)	%
MAIZ SUAVE	0.180	0.0001
PALMITO	22.020	0.0173
CANA DE AZÚCAR INDUSTRIAL	27.820	0.0218
CHIA	58.130	0.0456
ABACA	87.860	0.0690
MAIZ AMARILLO DURO	159.580	0.1253
CACAO	242.400	0.1903
ABACA	507.810	0.3988
BANANO	681.980	0.5355
PALMITO	740.590	0.5816
CACAO	753.800	0.5919
PALMA AFRICANA	1034.500	0.8124
TABACO	1368.510	1.0746
BANANO	2280.880	1.7911
MAIZ AMARILLO DURO	2366.380	1.8582
ARROZ	3444.170	2.7046
PALMA AFRICANA	4537.450	3.5631
PALMA AFRICANA	14971.510	11.7566
BANANO	20969.230	16.4664
CACAO	35132.820	27.5885
MAIZ AMARILLO DURO	37958.080	29.8071
TOTAL	127.345,700	100.0000

Tabla 1: Superficie por cultivos agrícolas de la cuenca del río Vices

Demanda de agua para riego

El volumen de agua para riego de cultivos agrícolas, para la cuenca del río Vices corresponde a 573,06 hm³ según CISPDR (2016) (Fig. 5). Este volumen fue distribuido de acuerdo a los cultivos agrícolas existentes en la cuenca del río Vices (Fig. 6).

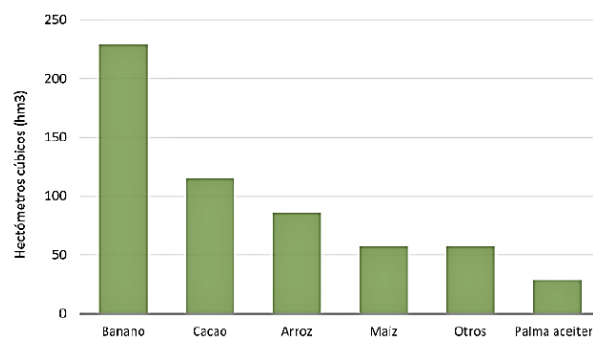


Figura 5. Distribución de 573,06 Hm³ agua para riego de cultivos agrícolas en cuenca del río Vices

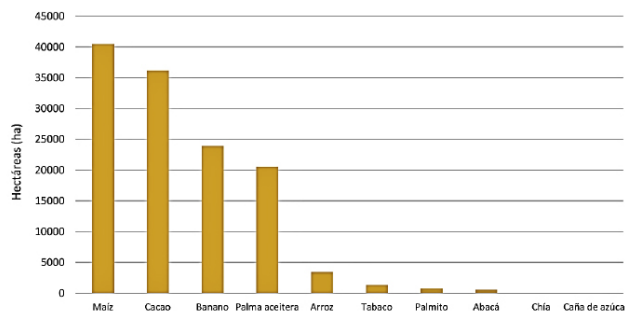


Figura 6. Distribución de cultivos agrícolas en 127.345,70 ha en cuenca del río Vices (MAGAP, 2014).

La Secretaría Nacional el Agua (SENAGUA) ha otorgado concesiones de agua para riego en el período comprendido entre los años 1980 – 2018 para la cuenca del río Vices de acuerdo a lo indicado en la figura 7.

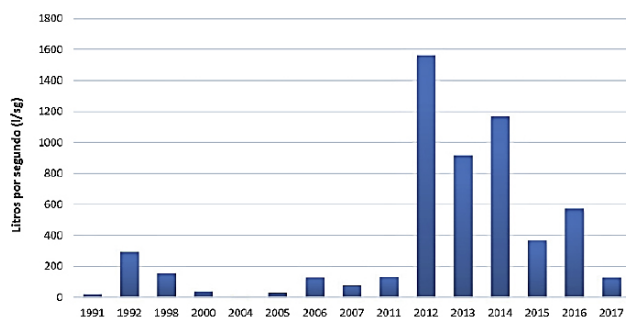


Figura 7. Concesiones de agua (l/seg) para riego de cultivos agrícolas en cuenca del río Vines, período 1980 - 2018.

En la figura 7, se observa una importante variación interanual de las concesiones de agua por parte de la Secretaría Nacional del Agua debido a que en el período comprendido entre los años 1991 y 2011 no hubo mayor control para los usuarios agrícolas por la dificultad que le significaba esta labor a los órganos de control de carácter centralizado, propiciándose que de manera clandestina se abusara del recurso hídrico para el riego agrícola. A partir del 2008, luego que por decreto ejecutivo 1088 se creó la Secretaría Nacional del Agua (SENAGUA), esta situación cambió gracias a la puesta en funcionamiento de las oficinas descentralizadas de atención a la ciudadanía, como es el caso de la oficina de atención al cliente de Quevedo, la misma que inició con un proceso de emisión y control de concesiones de agua para riego de manera equitativa en la cuenca del río Vines de acuerdo a la extensión de superficie de terrenos de los productores agrícolas (SENAGUA, 2011).

DISCUSSION

Territorial governance demands the creation of a decentralized planning system, where national planning functions fall to the central government, provincial planning functions to the intermediate level, and cantonal planning to the municipalities; establishing feedback and articulation mechanisms between the different levels. The intermediate or provincial governments must assume the administration and territorial management of their redoubt, applying successful territorial initiatives and leading participatory planning processes. In this context, INCLAM

(2012) points out that in the Chira-Piura basin, in accordance with the provisions of the Organic Law of Municipalities (LOM, Law No. 27972), local governments play very important roles in the management of water resources. , as a consequence of its powers in terms of organization of physical space and land use (article 70 of the LOM) and in matters of sanitation, sanitation and health (article 80 of the LOM).

Ingo Gentes (2008) mentions that water management systems arise from a basic need for distribution and conservation of water resources among the different actors, therefore integrated water management requires a stable political-institutional system that articulates the different hierarchical levels of administration, in this part the local level is fundamental for the process of control and monitoring since there are systems of communication and social control at the local level, decisive for an integrated management of water resources despite the fact that the technical information and hydrological comes mainly from national instances (on land use, effective distribution of use rights among the actors, etc.).

The customer service center of the Secretary of Water, SENAGUA for the Vines river basin, according to its statistics, states that water concessions are currently granted according to the extension of the crops, being 1.2 l/sg for the banana cultivation, 0.8 l/sg for oil palm and 0.6 l/sg for cocoa, unfortunately not all banana producers have water meters and it should also be noted that the irrigation rate on banana producing farms is quite low reaching USD 250 per 100 ha of cultivation, which prevents generating resources to improve controls in agricultural irrigation activity, to this Gaybor, (2008) indicates that for example the San Carlos sugar mill dedicated to the production of cane sugar for the 8,250 l/s that it has in concessions in 2007 paid the derisory sum of approximately USD 15,000 per year, REYBANPAC, producer of bananas for 4,740 l/s, paid approximately USD 8,700 while the peasants of he Daulle-Peripa system that grows rice for national consumption in several cantons of the province of Guayas pays USD 120/ha annually, that is, an amount 65 times higher than what San Carlos and REYBANPAC pay, or must pay, for each hectare .

Banana producers in Ecuador are unaware of the volumes of water they use through sprinkler irrigation since it is

always irrigated until the soil is saturated (Erika Zarate & Derk Kuiper, 2013) despite the fact that the ideal would be 27,500 m3 of water for irrigation per ha/year. Ecuadorian producers point out that in the basins where bananas are produced, the decrease in water availability in the dry season is evident, causing changes in the hydrology of the rivers due to factors such as deforestation and inappropriate land use. (Erika Zarate & Derk Kuiper, 2013) state that the situation in Peru is not different since one annual hectare of banana in production requires 28,500 m3 of water for irrigation and in light of minimum rainfall there is a scenario of increased water stress for years to come, since minimum environmental flows are currently not respected.

CONCLUSIONS

At present, the legal frameworks in force in Ecuador ratify the National Secretary of Water as the sole authority of the country's Water Resources, while the Provincial Decentralized Autonomous Governments, GADP receive the social mandate of the powers in planning, construction, operation, maintenance and rehabilitation of irrigation and drainage systems, at the provincial level without having any competence over the management of land use in the basins, as is the case of the Vinces River basin.

The application of irrigation water is an imperative need to obtain high and stable production yields in banana, cocoa and oil palm crops in the Vinces river basin. In these territories, the large agricultural monopolies use much more volume of water than is granted to them, the controls carried out by the local technical office of SENAGUA being limited, evidencing this reality a need for the management

and control of the intermediate government represented by the provincial government of The Rivers (GPDLR).

Payment rates for water concessions for irrigation per hectare in the Vinces river basin are very low, limiting the development of projects that improve the development of the basin both in terms of agricultural land use management and in terms of agricultural irrigation activity.

An attempt has been made to exemplify only one conflicting aspect of governance as part of a larger analysis scheme that is being developed and that will cover a wide range of relationships to consider in the search for balanced governance that ensures respectful governance of common resources. Including these in the context of territorial development interpreted as a dynamic and complex process, where three types of spheres of action can be identified, with different logics constituting specific fields. Different forms of governance applicable to specific development situations arise from their different forms of interaction (Bustos C. 2014).

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Research paper

Participation Principle Assessment in Governance Model Tourist Interest Zones in Chile

Evaluación del Principio de Participación en el Modelo de Gobernanza de Zonas de Interés Turístico

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Received: 2022-08-16

Accepted for publication: 2022-10-10

Published: 2022-12-31

ABSTRACT

States and their governments permanently propose methodologies for their territorial management in tourism, one of them is the Tourist interest Zones which installs a governance model in those territories with a tourist vocation. The central objective of the research is to evaluate the participation principle in the governance model of 4 heterogeneous and distant territories that obtained the Zoit declaration. The research consists of a quantitative, exploratory, non-probabilistic study through the technique of convenience sampling, being Pica, Casablanca, Araucanía Lacustre, and Chelenko as the sample.

It is concluded that the Zoit located in the northern zone spend less time in the declaration process than those located in the southern zone, but the Zoit located in the southern zone are carried out by more people, which accounts for a more participatory governance.

Keywords: Tourism, Interest Tourist Zone, Governance, Participation.

RESUMEN

Permanentemente los estados y sus gobiernos proponen metodologías para su gestión territorial en turismo, uno de ellos es la Zona de Interés Turístico la cual instala un modelo de gobernanza en aquellos territorios con vocación turística. El objetivo central de la investigación consiste en evaluar el principio de participación en el modelo de gobernanza de 4 territorios heterogéneos y distantes que obtuvieron la declaración Zoit. La investigación consiste en un estudio cuantitativo, exploratorio, no probabilístico a través de la técnica de muestreo por conveniencia, siendo Pica, Casablanca, Araucanía Lacustre y Chelenko la muestra.

Se concluye que las Zoit ubicadas en la zona norte gastan menos tiempo en el proceso de declaración que aquellas ubicadas en la zona sur, pero las Zoit ubicadas en la zona norte son realizadas por más personas, lo que da cuenta de una gobernanza mas participativa.

Palabras clave: Turismo, Zona de Interés Turístico Gobernanza, Participación.

INTRODUCTION OR SIMILAR SECTION HEADING

Although the public management of tourism in Chile has long decades of development in which management efforts have been established, such as the creation in 1975 of the National Tourism Service (Sernatur in Spanish), which has helped the promotion and development. However, this has been part of regulatory changes due to shortcomings in terms of coordination of actors, budget or weak, isolated or fragmented legislative measures (Sz-mulewicz, 2014).

Starting in 2010, an effort by the State to strengthen tourism activity materializes, promulgating Law 20,423, called the Institutional System for the Development of Tourism, in this way a new way of thinking about tourism as an integrated system emerges, with a multiplicity of actors, which could be designated as a modern view of tourism, propose a set of initiatives and a regulatory framework for the development and promotion of tourism activity. The first article of the legal framework establishes:

"Tourism constitutes a strategic activity for the development of the country, being a priority within the State policies, for which it must promote it in a harmonious and integral way, promoting its sustainability in accordance with the characteristics of the regions, communes and localities. of the country" (Law 20,423, p. 1).

Among the regulatory guidelines is the Zone of Tourist Interest (Zoit), which consists of a territorial distinction that aims to strengthen the tourism development of one or more localities, through the prioritization of initiatives, programs and/or projects public promotion, which allow to value and protect its cultural and natural characteristics as a tourist resource (Law 20,423). In order to achieve the objectives set, a Zoit must establish the articulation of the actors related to tourism to plan and develop the activity in a sustainable manner.

After six years of the entry into force of the Law, Decree 30 of the Ministry of Economy, Development and Tourism is promulgated. This regulation establishes that the Zone of Tourist Interest must be implemented through a governance integrated by public and private partnership of the territory, who will coordinate a four-year action plan, in which, through this new institutionality, they will be able to project lines of action which in turn may be financed through public funds prioritized by the State. (Law 20,423)

From the foregoing, it follows that tourism activity will have governance as its axis, which will allow compliance with what is established in the regulatory frameworks. The purpose of this paper is to evaluate the participation principle of governance model of 4 heterogeneous and distant territories, through a set of indicators built from the principles of good governance for human development and a review of the relevant literature.

Governance

Although the term governance is frequently cited by actors in public administration, it is still difficult to describe it precisely. Its origin goes back to the Greek society where *gubernare* adopts the meaning to describe the government, being the Concise Oxford Dictionary who defines it as the function or act of governing (OMT 2013) It is precisely this act of governing that has been questioned by the governed, by evidence of the inability of the public apparatus to respond satisfactorily to the demands of today's society, which is reflected in the exhaustion of traditional territorial administration schemes. Therefore, as Miguel Bárcena points out (Cited in Ferrusca et al. 2018), the old government must be transformed, or the classic way of governing must be rethought through the implementation or re-implementation of a horizontal structure that seeks to integrate the interests of the social, administrative and business actors of a territory.

Madrid (2014) citing the dictionary of politics *Toupictionnaire*, states that governance is a set of measures, rules and bodies that ensure the control and proper functioning of any type of organization, whether public, private, regional, national or international.

Governance as a concept is suggestive, has a poorly defined outline and presents reflections with various objectives (Velasco, 2014). This contains a look centered on the State and another polycentric. The first refers to the preferential role of the State in satisfying the need to establish mechanisms that direct society, and the second, which supports a multidisciplinary perspective, considering it as a process in which the State, the private sector and the local community participate, fulfilling each of them different roles. (Whittingham, 2010).

Unkuch and Rodrigues, citing Peters and Pierre (2017), consider governance as a process through which actions are coordinated by obtaining public and private resources, giving them a sense of direction and a shared meaning.

Cruz Jimenez citing Mayntz (2001) refers to governance as a more inclusive way of governing, separating from the old hierarchical model, in which state authorities exercised sovereign power over the groups and citizens that constituted civil society. In this way, state and non-state institutions, public and private actors, act cooperatively in the formulation and implementation of public policies.

Alcántara (2013) citing Serna de la Garza, points out that governance contains a duality in its meaning, which finds a descriptive plane and on the other hand a normative edge. The first is associated with the way of leading society and structuring collective action, which is distinctive of a multidisciplinary nature. This approach affirms that governance transcends the State, its subjects being the invitation and articulation of various public, private and community actors. On the other hand, the normative reference attends to what is called good governance in terms of what to do and how to do it, referring to an adequate, correct or effective way of doing governance, its approach is related to the interdependence between government actors and social which allow a direction of society.

Since the end of the 20th century, the concept of governance has been linked to new public management, which can be understood as "a process of validating public policies through the direct participation of ordinary citizens and influential actors within a common local social context. , which allows viewing sustainability projects" (Vegas, 2017), this is how governance currently accounts for the decentralization that characterizes the current structure of society, directing it to a new management process, considering its characteristics and dynamics such as multipolarity and its systemic nature, referring to the concept of governance by networks or participatory governance, which necessarily implies the synergy between public, private and social resources so that society does not drift, generates general living conditions secure and prosperous and its members carry out their particular projects (Aguilar, 2010).

Tourism, being a phenomenon in expansion and with international reach, has increased the interest of the authorities in its promotion and regulation, its particu-

larities such as the multiplicity of actors, both direct and indirect, who act in a chained manner, it is considered that they can be managed or led through governance (Duran, 2013). The World Tourism Organization (UNWTO) refers to tourism governance as the act of efficiently directing the sector at the different levels of government, through forms of coordination and collaboration between them to achieve the goals shared by networks of actors that affect tourism sector, in order to achieve solutions and opportunities, based on agreements based on the recognition of interdependence and shared responsibilities (2010).

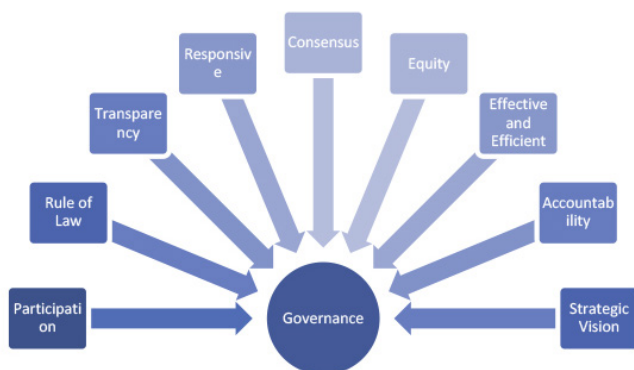
Governance in tourism can collaborate in deepening the interaction relationships between the actors to face challenges that increase the competitiveness of a destination or locality, in a framework of making sustainable development feasible Velasco (2014). Durán (2013) citing the UNWTO (2008) points out that the main uses of tourism governance are aimed at improving the levels of associativity, the development of a marketing and promotion strategy, the implementation of a territorial tourism policy, decentralization and the development of interorganizational networks.

Based on the foregoing, it can be pointed out that tourism governance will consist of a systemic form of government and public action in which the actors of a territory meet to diagnose a particular context, to subsequently reach agreements that will allow the design and execution of an action plan. Governance must necessarily be representative, which is why it will integrate actors from the public sector, the private sector and civil society, which will reduce the risk of developing inconsistent, isolated and inappropriate policies. In addition, it will allow an adequate use of resources in accordance with local territorial needs. Therefore, from a functional point of view, governance in tourism establishes an articulating, permanent and efficient territorial management methodology, aimed at acting in accordance with the characteristics and needs of a territory and its inhabitants.

In this way, Pulido (2014) citing the United Nations Development Program (UNDP) in the publication Governance for Sustainable Human Development, presents nine principles of good governance which, due to the complexity, chaining, and necessarily collaborative nature, can be applied to tourism activity, its principles are: Participation, Rule of Law, Transparency, Response Capacity, Consensus Orientation, Equity, Efficacy and Efficiency, Accountability

and Strategic Vision.

Figure 1. Governance Principles for Sustainable Human Development



Source: Pulido Fernández based on the United Nations Development Program (2014).

In addition, the feasibility of developing a set of indicators that allows the monitoring and evaluation of territorial management through the establishment of standards and patterns that allow guiding and strengthening the structure of governance models is considered. (Pulido citing Durán 2014). In this way, a set of indicators will allow control of territorial management through the review of the organizational structure, compliance with regulations, dissemination instances, monitoring of planned processes and objectives, establishing pertinent and timely corrections, reducing the risk of make wrong decisions and guide the management entity in the scope of the territorial strategic vision. In Zoit case, according to the 30 decree, partnerships must put high emphasis on local and regional participation, and this will be the focus of this research.

Participation Principle

The Participation Principle has the purpose of promoting that a large number of local actors integrate the public-private table, contribute to its management and financing. The actors are active participants in the workshops in which they discuss and validate the points and themes related to the public-private partnership.

In summary, the approach is related to all the participants having an influence on decision-making and agreements, on the design and execution of the action plan and in some cases on the financing of the public-private partnership. With this set of indicators, it is intended to externalize par-

ticipation in quantitative terms, establishing a reference parameter (average), which will subsequently be compared with the data of each territory declared Zoit, finally a review of the results is made.

The indicators corresponding to measuring the principle of participation are:

a) Workshop Attendance Rate (WAR): Number of total registered actors / total attendance.

This indicator is intended to know the relationship between the number of actors who express their interest in participating and attendance at participatory instances.

b) Representation rate of the Public-Private Partnership (RPPP): Number of actors that make up the public-private partnership / total actors registered.

This indicator is intended to establish the representativeness of the public-private table in relation to the number of actors who express interest in participating in the workshops. In this sense, it should be specified that the actors that make up the table are those who assume the responsibility of representing the public-private table and executing the action plan, instead the registered actors correspond to all those individuals who attend and contribute to the workshops participatory.

c) Convocation Capacity Rate (CCR): Number of actors that make up the public-private table / b) total attendance

The indicator aims to reveal the relationship between the actors that represent the public-private table in relation to the total number of effective attendances at the workshops.

d) Action Plan Design Representation Rate (APDR): Number of participants in action plan elaboration / b) Number of registered actors.

This indicator reveals the relationship between the total numbers of actors that participate in editing the action plan compared to the total number of actors enrolled in the participatory workshops.

e) Previous meetings quantity to Zoit declaration (PMQ): Number of meetings held prior to the Zoit declaration (Backed up in the Zoit File).

This indicator aims to indicate the total number of partici-

patory meetings or workshops convened and developed in the territories before Zoit declaration.

f) Elapsed Time to Zoit Declaration (ETZD): Start and end dates of activities for the application to Zoit

This indicator aims to indicate the time interval between the first and last meeting or participatory workshop convened by the managing body.

The study does not intend to carry out a detailed analysis of each variable, but rather it is intended to externalize certain data or general patterns related to participation. In addition, it should be noted that each territory experiences its own process according to its own characteristics and scenarios.

METHODOLOGY AND RESULTS

The Tourism Subsecretary on its website publishes that there are currently 35 locations that have the Zoit declaration. For the present study, it is decided to apply an exploratory study through the non-probabilistic sampling technique that consists of the choice of the sample for reasons related to the characteristics of the researcher, this type of procedure is not mechanical or based on formulas of probability, but by subjective decisions. (Hernandez et al., 1997).

Additionally, the sample will be of the convenience type, which consists of the selection of a sample, based on heterogeneity, geographical dispersion of the territories, as well as the accessibility of the information, a relevant criterion is the time of collection of the information from what is intended to be investigated, in this case between the months of May to November 2019.

Image 01: Map Tourist Interest Zones Examined



Source: Own elaboration from Tourism Subsecretary and Geographic Militar Institute.

For the collection of information, a combined spreadsheet is created, made up of a checklist together with the proposal of indicators. The methodological procedure consists of a review of the relevant literature, as well as a documentary study of laws, decrees and reports issued by public and private organizations, which allow recognizing the state of the art of the research topic at present, and then proceed to examine the files of the selected Zoit. Finally, based on the principles of participation established in the literature, indicators are applied, so that the results of this research guide the formulation of future applications in terms of good governance.

Table 1. Zoit Identification

Zoit Name	Location	Region	Cities
Pica	North	Tarapacá	Pica
Casablanca	Central	Valparaíso	Casablanca
Araucanía Lacustre	Central-south	Araucanía	Pucón, Villarrica y Curarrehue
Chelenko	South	Aysén	Rio Ibáñez y Chile Chico

As previously mentioned, indicators are calculated through the quotient between point a and point b, in this way their result allows obtaining a numerical data which quantitatively reflects what is intended to be evaluated. For example, the indicator related to Workshop Attendance Rate (Table 2) is obtained by dividing the number of total registered actors (a) by the total number of attendances (b), at this point the number of participating and registered actors is listed, while in the case of total attendance, the total number of effective attendances is added throughout the entire process, thus in the case of Pica, out of a total of 50 people registered, a total of 134 attendances is obtained, which reflects a ratio of 0.37, Araucanía Lacustre 0.36, Casablanca presents a ratio of 0.25, and Chelenko 0.25.

Table 2. Workshop Attendance Rate (WAR)

Zoít	Actors registered	Total Attendance	Ratio	Average
Pica	50	134	0.37	0.31
Casablanca	42	165	0.25	
Araucanía Lacustre	121	334	0.36	
Chelenko	170	704	0.25	

When measuring the representativeness rate of the public-private table in comparison to the number of participants, Zoít Casablanca and Araucanía Lacustre stand out, followed by Pica, in this case, Chelenko is the only territory below the general average.

To measure the representation of the public-private partnership, it's divided the total number of actors that represent the partnership, in relation to the total number of registered actors, where Araucanía Lacustre and Casablanca obtained 0.31, Pica 0.26, and Chelenko 0.14.

Table 3. Representation Rate of the Public-Private Partnership (RPPP).

Zoít	Public/private Actors Partnership	Actors Registered	Ratio	Average
Pica	13	50	0.26	0.26
Casablanca	13	42	0.31	
Araucanía Lacustre	38	121	0.31	
Chelenko	23	170	0.14	

Partnership convocation capacity it's calculated through the quotient between partnership actors quantity and total attendance, being Araucanía Lacustre and Pica whose obtain better results after Casablanca obtain 0.08 and Chelenko 0.03.

Table 4. Partnership Convocation Capacity Rate (CCR).

Zoít	Public/private Actors Partnership	Actors Registered	Ratio	Average
Pica	13	134	0.10	0.08
Casablanca	13	165	0.08	
Araucanía Lacustre	38	334	0.11	
Chelenko	23	704	0.03	

Table 5. Action Plan Design Representation Rate (APDR).

Zoít	Action Plan Elaboration Actors	Actors Registered	Ratio	Average
Pica	5	50	0.10	0.16
Casablanca	13	42	0.31	
Araucanía Lacustre	8	121	0.07	
Chelenko	23	170	0.14	

Action plan design representation rate it's calculated considering the quotient between the number of participants in the development of the action plan and the total number of registered local actors, in this case best results are for Casablanca, Chelenko, Pica And Araucanía Lacustre in order.

Table 6. Previous Meetings quantity to Zoít declaration (PMQ).

Zoít	Meetings / Workshops	Average
Pica	9	15
Casablanca	8	
Araucanía Lacustre	17	
Chelenko	26	

It reflects the number of instances of participation through participatory meetings or workshops prior to the Zoit declaration, where Pica appeared at 9 meetings, Casablanca at 8, Araucanía Lacustre at 17 meetings, and Chelenko at 26 total meetings.

Table 7. Elapsed Time to Zoit Declaration (ETZD).

Zoit			Ratio	Average
Pica	04/01/16	09/03/17	14 months	11.5
Casablanca	25/07/2017	25/10/17	3 months	
Araucanía Lacustre	08/08/16	15/12/16	4 months	
Chelenko	13/05/15	13/06/2017	25 months	

The temporality rate of the meetings prior to the Zoit declaration reflects that the time during which the workshops were held in Pica was 14 months, Casablanca 3 months, Araucanía Lacustre 4 months, and Chelenko 25 months.

Table 8. Comparative Table of Results.

Ratio	Pica	Casablanca	Araucanía Lacustre	Chelenko	General Average
a) WAR	0.37	0.25	0.36	0.25	0.30
b) RPPP	0.26	0.31	0.31	0.14	0.26
c) CCR	0.10	0.08	0.11	0.03	0.08
d) APDR	0.10	0.31	0.07	0.14	0.16
e) PMQ	9	8	17	26	15
f) ETZD	14	3	4	25	11.50

After calculating ratios, it proceeds to determine the general average among 4 Zoit, establishing discrimination in high and low performance (Table 9), although the participation principle can be considered balanced, it can be deduced that who achieves best result is Araucanía Lacustre, obtaining high performance in 4 of 6 indicators.

Table 9. Synthesis of Results

Ratio	Pica	Casablanca	Araucanía Lacustre	Chelenko
a) WAR	High	Low	High	Low
b) RPPP	High	High	High	Low
c) CCR	High	High	High	Low
d) APDR	Low	High	Low	Low
e) PMQ	Low	Low	High	High
f) ETZD	Lengthy	Short	Short	Lengthy

Comparing the results of each territory, in the first place, Pica presents the highest Attendance Rate, seconded by Araucanía Lacustre, in terms of Representation Rate of the Public-Private Partnership based on the attendee's point out that Araucanía together with Casablanca achieved greater representativeness, in terms of the Partnership Convocation Capacity of the public-private table, Araucanía Lacustre obtained better results, followed by Pica. Casablanca followed by Chelenko leads the Action Plan Design Representation Rate.

Quantity Previous Meetings to Zoit Declaration is lead by Chelenko getting 26 activities, in second place Araucanía Lacustre carried out 17 workshops.

In terms of Elapsed Time to Zoit declaration Chelenko reached a long time getting 25 months, followed by Pica who spent 14 months.

CONCLUSIONS

Governance like a concept is a long-standing dynamic term that has acquired greater prominence in society from the new public management, it's meaning continues under construction as societies develop and reconfigure, therefore the heterogeneity of the territories makes It is complex to establish a standard that allows evaluating the Zoit, however, participation principle would enable establishing good governance.

In this research 4 zones were studied through the non-probabilistic sample for convenience and it was possible to apply a set of indicators that measured participation principle which has high importance because it validates the work led out by the public-private partnership on the part of the community and on the other hand complies with the obligation indicated in the legal framework.

These indicators come to contribute to establishing standard way to measure how Zoit's are configured and how worked to obtain Zoit declaration, setting parameters related to attendance, representation, convocation, workshops and time spend in the whole process.

From the point of view of Participation Participle, the data show a preeminence on the part of the Zoit Araucanía Lacustre, which has a high rate of attendance at the workshops, a high rate of representation of the public-private table, and a high capacity of summons. It also has high participation in the number of workshops prior to the Zoit declaration. The time between the first and last workshop is considered short, which could be interpreted as a good governance model.

The Zoit Casablanca is considered the second territory with the best governance model in terms of participation, mainly because it has a high rate of representation of the public-private table, a high rate of representation in carrying out the action plan, and also the period of work was short when presenting an interval of 3 months between the first and last workshop. Its weaknesses are related to a low number of workshops and attendance rates.

The third territory in terms of the best result in the principle of participation is Zoit Pica, which presents a high rate of attendance at the workshops, a high rate of representation of the public-private table, and a high rate of convocation, its weaknesses are related to a low participation rate with 9 workshops in total and the interval between the first and last workshop is considered to be long.

The fourth place in terms of indicators is Zoit Chelenko, which has a low attendance rate, low representation rate of the public-private table, of convening, of representatives in the action plan, its strength is evidenced by the number of meetings which is considered the highest of the 4 territories.

Zoit's located in the northern and central zones dedicate fewer workshops than the southern zones since it is made up of only 1 city, on the other hand, the southern zones of tourist interest are made up of 2 and even 3 cities (Chelenko and Araucanía Lacustre respectively) which implies a greater effort in process.

It is important to analyze and take a deeper look at the data indicated above, since, although at first glance there is a

classification of territories with good governance in terms of participation, other elements that are not easily measurable must be taken into account and that is related to the management of the Zoit in the localities. For example, Chelenko, Zoit integrates the communes of Chile Chico and Rio Ibáñez, a town located in the extreme south of the Aysén region. The territory presents important connectivity difficulties, since, although they are approximately 150 kilometers away from one another, the transfer time can exceed 4 hours where Lake Chelenko or also baptized as Lake General Carrera must be crossed. In addition, one of the main barges has mechanical problems, further delaying the movement, likewise, climatic conditions, time, and wind are real barriers to accessing the different locations that make up the Zoit.

However, it should be specified that Araucanía Lacustre and Chelenko, which are located in the central south and south austral zones, are those that have a more significant number of meetings/workshops held, being able to convene a more significant number of people, these localities they have the particularity that in their geographical delimitation they unified 2 or more communes. Unlike the Zoit Pica and Casablanca.

From the analysis of the files of the Zoit and the current regulations, it can be pointed out that the success of an Area of Tourist Interest will be determined by:

Establish a governance model that ensures compliance with the principle of participation, which contains

Workshop Attendance Rate, Representation rate of the Public-Private Partnership, Convocation Capacity Rate, Action plan design representation rate, Previous meetings quantity to Zoit declaration and Elapsed time to Zoit declaration,

These will make it possible to monitor and compare whether the participation of local actors is being fulfilled and will make it possible to take measures to encourage it.

Strategies and methodologies must be established that encourage the participation of public actors, the private sector, as well as the local community, in the case of the latter, the low levels of civic participation in the country must be taken into account, for, Therefore, it is recommended to establish efforts to promote the participation of civil society.

purpose of the governance model is to be able to achieve development following the community's priorities, where, through this new structure, the opinion of all its actors, the public sector, the private sector, and the community, can be taken into account. The locals must be able to talk and work together to achieve sustainable tourism development, the ultimate goal of any initiative in the sector.

Finally, to evaluate the success of territorial management or good governance, 4 years must be completed. That moment will be the formal instance to examine and analyze the expected results of the management of the public-private table, an opportunity in which compliance with the principles of good governance in theory and practice can be verified.

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Research paper

Analysis of the tourist route don Vasco Michoacán, México

Análisis de la ruta turística don Vasco Michoacán, México

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Received: 2022-03-30

Accepted for publication: 2022-08-01

Published: 2022-12-31

ABSTRACT

The tourist routes add to the actions of the tourist activity in urban or rural regions. In Mexico the tourist routes are articulated by private or public or mixed actors, in the case of the Michoacán route it is called Don Vasco tourist route and the central objective is to analyze the resources, supply and demand to have a particular vision. The qualitative and interpretative method used, of the documentary type, which determined the selection, access and registration procedure of the documentary sample. Among the results obtained, the institutional model of the route and the central bases of the regions that make up the route are shown, of which a constant integration is shown in Morelia and Pátzcuaro, reflected in the development plans of the municipalities. Which shows a solid development of the route in the municipalities with the highest tourist activity in the State of Michoacán.

Keywords: actors, rural tourism, tourism intelligence, development plans.

RESUMEN

Las rutas turísticas suman a las acciones de la actividad turística en regiones urbanas o rurales. En México las rutas turísticas son articuladas por actores privados o públicas o mixtas, en el caso de la ruta de Michoacán denomina ruta turística Don Vasco y el objetivo central es analizar los recurso, oferta y demanda para contar con una visión particular. El método utilizado cualitativo e interpretativo, de tipo documental, el cual determinó el procedimiento de selección, acceso y registro de la muestra documental. Entre los resultados obtenidos se muestra el modelo institucional de la ruta y las bases centrales de las regiones que integran la ruta de las cuales, se muestra una integran constante en Morelia y Pátzcuaro, plasmado en los planes de desarrollo de los municipios. Lo cual, muestra un desarrollo de la ruta solido en los municipios con mayor actividad turística del Estado de Michoacán.

Palabras clave: actores, turismo rural, inteligencia turística, planes de desarrollo.

INTRODUCTION

The tourist route is a measure to offer singular or plural tourist products in a specific area. The route can be offered by travel agencies, but there are also tourist routes that are prepared by institutions, regions, or companies for marketing or competitive purposes with multiple integration for a high-quality tourist service.

The Don Vasco route in Michoacán is a cultural tourist route that is financed by the companies that articulate it, the governments at the municipal, state, and federal levels, a reason that allows consolidation with respect to other routes in the State. The route is considered cultural, although in the experiences that are offered the services are varied from architectural, adventure, rural, religious, ecotourism, archaeological, gastronomic and health for couples, families or groups at a national and international level. The route has an official page for its commercialization with multiple packages or the customization of generating one of its own.

For this reason, the route analyzed below has multiple activities that can be carried out with the advantage of having innovation and the use of technology to position the route. Mexico can take an example to position tourism services, but it also positions regions with tourism potential that benefits their immediate environment economically and socially, valuing their tangible and intangible architectural, natural and cultural environment. The document is divided into the following sections: 1) history of tourist routes, 2) local development and tourist routes, 3) tourist routes in Michoacán, 4) method, 5) background of the Don Vasco Route, 6) socioeconomic and environmental resources of the Don Vasco route, 7) development model of the Don Vasco Route, 8) demand profile of the Don Vasco Route, 9) offer of the Don Vasco tourist route, 10) tourism development plan of the Don Vasco route, and 11) conclusions.

Background of tourist routes

The tourist routes are a service that offers the tourist resources of a locality, municipality, region, state or country, implements an itinerary in a geographical area taking into account the characteristics of the place for tourist purposes

together with direct and indirect tourism goods and services. (Tovar and Castillo, 2014), (Olivera, 2007).

The tourist route¹ is defined as: "road axis that connects two or more emitting or receiving centers and that contains different attractions. It is made up of a set of local elements, organized in the form of a network within a determined region marked out. The route must offer activities related to its distinctive elements, as well as presenting a comprehensive image based on the complementarity between sites, services, attractions and language for communications" (Casa, 2013: 46), (FAVA-SENA, 2014), (Fernández and Guzmán, 2005). The design of the route is derived from the inventory of natural, gastronomic, architectural or cultural resources, that is, of the services that have tourist potential to generate a good service for customers.

It is important to consider that the success of a tourist route implies the involvement of local actors such as the population in the tourism project so that social participation is active together with the experts in the development of the tourism service (López and Sánchez, 2009). Over time, tourism systems can be developed that encompass multiple activities around tourism. The tourist route serves to revalue the culture of a region through tourist activity, promoting activities aimed at productivity, investment, infrastructure, new types of cooperation, etc., oriented towards tourism development with companies, society and institutions (Fernández and Guzmán, 2005), (FAVA-SENA, 2014).

In the design of a tourist route, the following aspects must be taken into account (Yañez, 2013), (FAVA-SENA, 2014), (Chan, 2005): 1) geographic location, 2) inventory of goods and services, as well as activities or places with tourist potential, 3) define the route and places, 4) carry out the design of the route, 5) carry out the itinerary, 6) maintenance, 7) evaluation of the route and 8) consider costs and operating expenses of the route.

The characteristics of a tourist route imply the following: 1) a central objective of the tourist route, 2) rules or norms for the operation, 3) control of the actions of the actors within the route, 4) internal and external information, 5) publicity and 6) active participation of the members (Chan, 2005), (Fernández and Guzmán, 2005).

¹ These tourist routes, which take different names such as corridors, routes, circuits, paths or itineraries, try to differentiate themselves from their competitors by highlighting certain resources that are present in the territory (Hernández, 2011).

The design and execution of the tourist route from the territorial competence implies a link and interrelationships of the actors of the territory. In addition to public and private investment, as well as the governmental institutional participation of the territory, the routes are founded by applying registration procedures for heritage and landscape resources, which allow the selection and objectification of those cultural, anthropological and ecological assets that are likely to be transformed into products. tourism, organizing and prioritizing the offer according to its tourist interest, trying to maintain them without modifications (Hernández, 2011), (López and Sánchez, 2009), (CODESPA, 2013), (Vicente, 2008), (Hernández, 2011).

Local development and tourist routes

Local development and tourist routes form rationalized formal structures that can arise in two contexts, 1) oriented in networks of local relationships that entail the need for a structure that coordinates and controls daily activities, seeking in efficiency a competitive advantage that ensures success, 2) or it can come from the organization and interrelationships that the tourist activity implies (Riquel, 2010).

From the two contexts of the link, local development is defined as a "process of economic growth and structural change that leads to an improvement in the standard of living of the local population and in which several dimensions can be distinguished such as: economic, educational of human resources, sociocultural, political-administrative and environmental" (Vázquez Barquero, 2009). Now, with its link to tourism, it involves the host community in the geographical area of the route to transcend actions that lead to local development, through the construction of social capital, innovation, interrelationships, organization and feedback with the actors involved

In this way, the territory works as a transformation factor (Vázquez Barquero, 2009), from the bottom up with an active and constant social participation towards the planning of the actions that guide the tourist route considering the following regional distribution of wealth, create new products or destinations, promote interrelationships and investment in the sector (Gambarota and Lorda, 2017).

Tourist routes in Michoacán

In recent years, the tastes of travelers towards new typologies have allowed certain places to emerge as new tourist

destinations, generating new opportunities through strategies for the participation of the local population (López and Sánchez, 2009), (Arnaiz and Virgen, 2011). Destinations require innovation and human and social capital for the management, administration, maintenance and protection of existing resources on the route (CECIC, 2012).

The State of Michoacán has historical cultural architectural heritage, natural reserves among other tangible and intangible attractions. The State has a privileged geographical location, due to its highway network that allows it to connect with the main urban centers of the country. Thus, Michoacán is located (map 1) in the western region of the country, bordering to the north with Colima, Jalisco and Guanajuato, to the northeast with Querétaro, to the east with the State of Mexico, to the south with the Balsas River that separates it from Guerrero, and to the west with the Pacific Ocean. It has a population of 4,584,471 habitants (INEGI, 2016). It is divided into 113 municipalities including its capital is the city of Morelia.

Figure 1. Location of the State of Michoacán



Source: INEGI, 2016.

The 76% of the population lives in urban areas and 24% in rural areas. Michoacán is made up mostly of mestizo population; however, three ethnic groups have their roots in the entity: the Nahuatl (coast), the Otomi (east) and the Purépechas (center) (Mercado y Mercado, 2013), (INEGI, 2016). The latter, being the majority, have given identity to the State, standing out for their cultural values. The Purépecha region encompasses 17 municipalities and more than 100 communities, where 92% of the state's indigenous population lives (Mercado and Palmerin, 2009). A rural tourism or ethnotourism can be developed thanks to

the pre-Hispanic history and customs that last until today.

Thus, tourism in Michoacán represents one of the strengths of the State in its economic effects and has positioned itself as a tourist center at the national level. The semi-virgin beaches, festivities such as the Day of the Dead or areas such as "The Monarch Butterflies" or "El Paricutin" represent tourist attractions that are positioned. Thus, the Ministry of Tourism of Michoacán has promoted tourist routes within the ten regions in which Michoacán is divided².

The main tourist routes in Michoacán are: 1) the Don Vasco route, 2) the health route, 3) the turtle route and 4) the mezcal, tequila and Cotija cheese route and 5) the route of the magical mining towns³. In addition to having eight magical towns, semi-virgin beaches and a nationally recognized capital of cultural tourism such as Morelia. The multiple routes have different ranges of services, although the most important and the one that receives economic resources from the three levels of government is the Don Vasco Route, which is also made up of the main municipalities and state capital that generate the most dynamic economic activity. Next, the routes of the State of Michoacán are explained in a general way and the Don Vasco Route in a specific way.

Method

The development of the analysis of the Don Vasco route is carried out through a qualitative and interpretative methodological design, of a documentary type, thus the selection, access and registration of the documentary sample was obtained. The steps performed are described below:

- Investigate: involves searching for official and scientific information related to tourist routes and especially the Don Vasco route.
- Identify and select: from the information obtained, the information outside the object of study is discriminated, in order to analyze in detail the information derived from the routes.

- Classify and systematize: the information is classified and systematized to guide the bases of the tourist routes, and the specification of the Don Vasco route.
- Analyze: corresponds to identify in a clear, objective and rigorous way in a general way and specifies the information of the routes.
- Approach to the state of the art: the current situation of the study phenomenon is described.

Background of the Don Vasco Route

The Don Vasco route is a tourist route that includes the route of Bishop Don Vasco de Quiroga in the period of the conquest of New Spain. Don Vasco arrived in Mexico in 1531 influenced by Thomas More, Erasmus of Rotterdam and Francisco de Vitoria arrived in Michoacán to undertake his work as the first bishop.

His merits were notorious, he founded the Santa Fe hospital in the outskirts of Mexico City for the care of the indigenous people. In addition, he promoted economic measures that benefited the Purépecha, which is why he was known as Tata Vasco among the indigenous Purépecha. With the passage of time, he went from Tzintzuntzan to Pátzcuaro, over the years he moved to the city of Guayan-gareo (Valladolid and after independence called Morelia) supported by Viceroy Antonio de Mendoza, he founded the Colegio de San Nicolás Obispo, the first institution of studies superiors in America, where interculturality was practiced between indigenous people and Spaniards, predecessor of the Universidad Michoacana de San Nicolás de Hidalgo.

Don Vasco founded about 200 hospital towns, in addition to introducing production techniques from Europe interconnected with the knowledge of local artisans, so each town specialized in a job or trade to generate a productive and commercial specialization, giving rise to its main message of "social justice" was the bearer of connecting two worlds.

² The ten regions into which Michoacán is divided: 1. Lerma–Chapala, 2. Bajío, 3. Cuitzeo, 4. Oriente, 5. Tepalcatepec, 6. Purépecha, 7. Pátzcuaro–Zirahuén, 8. Tierra Caliente, 9. Sierra Costa y 10. Infiernillo

³ The magical towns are: Pátzcuaro, Tlalpujahua, Cuitzeo, Santa Clara del Cobre, Angangueo, Tacámbaro, Jiquilpan y Tzintzuntzan.

The Don Vasco route was born from the initiative of the Ministry of Tourism of Michoacán with the aim of promoting the endogenous development of the territory, through the launch and implementation of the cultural tourist route in the market.

The route comprises two sections (figure 2):

1) "The Soul of Don Vasco or Lacustrine Zone" is made up of Cuitzeo, Morelia, Capula, Tiripetio, Tupátaro, Cuanajo, Ihuatzio, Tzintzuntzan, Quiroga, Santa Fe de la Laguna, San Jerónimo, Erangaricuaro, Arincutin, Santa Clara del Cobre, Patzcuaro, Zirahuen, and Tzurumutaro.

2) "Purepecha Essence or Plateau Zone" is made up of Tingambato, Uruapan, San Lázaro, Paracho, Ahuiran, Nurió, Cocucho, Ocumicho, Charapan, Zacán, Angahuan,

Nuevo San Juan Parangaricutiro and Capácuaro.

The structure of the first section is divided into receiving destinations and distributor is the municipality of Morelia, the axis destination is Patzcuaro, the main destinations are Tzintzuntzan, Santa Fe de la Laguna, Santa Clara del Cobre, Tzurumátaro, Tzurumútaro and Tingambato. The secondary destinations are Cuitzeo, Tupataro, Zirahuén and Erangaricuaro. The complementary destinations are Tiripetio, Cuanajo, Ihuatzio, San Jerónimo, Janitzio and Yunuén.

The structure of the second section as receiving and distributing destination is Morelia, the axis destination is Uruapan, the main destinations are: Paracho, Angahuan, Ocumicho and Zacán. The secondary destinations are Nurió, Charapan and Cocucho. The complementary destinations are: Nuevo San Juan Parangaricutiro and San Lorenzo.

Figure 2. Territorial delimitation of the Purépecha Lake and Plateau Area on the Don Vasco Route



Source: Guide The Route of Don Vasco of the Government of Michoacán - SECTUR, (PE, 2010).

The first route includes a vision of miscegenation and legacy that persists to the present day, while the second part of the route includes interculturality and sacred art produced by indigenous people, as well as the different religious orders that arrived (Franciscans, Augustinians, Jesuits and their relationship with the Purépechas). Both have a sense of spirituality and a space for coexistence between yesterday and today in arts, crafts and food in a natural area.

The thematic argument of the lake section is the 500 years of history, spirituality and traditional cuisine. The specific arguments of the section are the hospital communities (colonial hospitals for the care of the Purépechas), temples, chapels, convents, art, knowledge, arts

and crafts. The specific thematic argument of the second section that involves the Purépecha plateau has the natural environment in addition.

Socioeconomic and environmental resources of the Don Vasco route

The geographical area of the tourist route includes the main cities of Michoacán, which are its capital Morelia, the main magical town Pátzcuaro, the agricultural zone Uruapan (main exporter of avocado) and the Purépecha plateau where the localities that comprise the pre-Hispanic culture are located. In addition, the route includes the cities with the largest population as shown in table 1 with many locations.

Table 1. Data of the Don Vasco route

Municipal	Population	Localities	Occupied private dwellings	Schooling
Cuitzeo	28, 227	24	7035	6.5
Erongarícuaro	14555	18	3866	7
Morelia	729 279	207	215405	10.3
Nahuatzen	27174	11	6102	6.8
Nuevo Parangaricutiro	18834	51	4623	7.4
Paracho	34721	20	9026	7.8
Pátzcuaro	87794	65	22767	8.3
Quiroga	25592	14	6866	7.1
Tzintzuntzan	13556	33	3555	7.8
Uruapan	315350	188	86647	8.7

Soucer: Inegi, 2019.

The population varies, but the route includes the main cities of the State of Michoacán, in addition the level of schooling varies depending on the municipality from 10.3 to 7. The State's unemployment rate is 3.65, the Human Development Index is the lowest in the country with 0.7 at the level of Chiapas, Guerrero and Oaxaca.

The land use of the Don Vasco route has urban areas, although the area shows a forest area of 53% and an agricultural area of 35%. Urban areas vary, the largest is in Morelia with 10%. Identifying land use has many natural resources (Inegi, 2019). The area has a temperate climate. The water region is Lerma-Santiago and Balsas, the basins in the region are: Lake Pátzcuaro-Cuitzeo, Lake Yuriria, River Cutzamala, River Lerma-Chapala, River Tacámbaro, River Purungueo, River Tepalcatepec-Infiernillo, Lerma-Chapala

River, Lake Cuitzeo and Lake Yuriria.

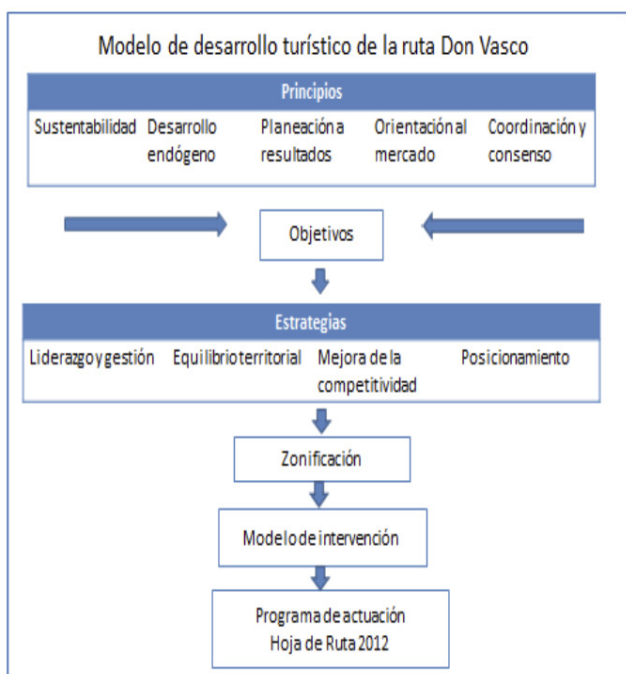
Therefore, the population, land use and the number of resources is conducive to multiple tourist activities from ecotourism, adventure, rural, cultural, architectural, archaeological, gastronomic, religious, etc. the area has multiple potentialities for innovation and implementation of projects for the benefit of the area

Development model of the Don Vasco Route

The tourist route development model includes aspects such as: competitiveness: value generation, supply development, public-private cooperation, positioning strategy and coordination framework. Thus, the tourism model implies a network of skills, responsibilities and interrelationships between tourism agents and institutions.

In the case of the route, the heterogeneity of the territory contemplates a zoning and a differentiated intervention model for each destination of the route.

Figure 3. Tourism development model of the Don Vasco Route.



Source: Plan Strategic of the Don Vasco Route. SECTUR Government of Michoacan, (PE, 2010).

The principles include the environmental, economic and cultural sustainability of the area, considering its development by implementing its endogenous resources in a planned manner with market principles, contemplating an articulation with the agents of the territory in a way that promotes cooperation and consensus in around the tourist route.

The general objective of the tourist route is: "the generation of a competitive cultural tourism product along the lines of the tourism market preference, which promotes an endogenous development process that improves the quality of life of the inhabitants with respect to the cultural values and the preservation of natural resources" (PE, 2010:48).

Among the specific objectives are 1) to put in tourist value

the tangible and intangible cultural heritage of the region, 2) to create a cultural tourist route (clear differentiation), 3) creation of tourist MSMEs, 4) to improve the citizen and tourist space and finally 5) establish a coordination system. (PE, 2010:48-9).

The strategies that were followed were: leadership-management, territorial balance, competitiveness and positioning.

Profile of the demand for the Don Vasco Route

The Strategic Plan of the Don Vasco Route identifies the profile of the demand for the route, which consists of a national profile that has its main national visitors by families (44%) and couples (20%) who come from Michoacán (18 %), Mexico City (13%) and Jalisco (12%) with an average age of 35 and 49 years (36%). The socioeconomic level is medium-high since it has an average income per family of \$6,500 and \$13,000 pesos per month, with an average expense of \$2,700 pesos, 63% of visitors have university studies and 28% are professionals.

The main type of accommodation is hotels (53%) followed by stays with family and friends (12%). The average duration of trips is 4.6 nights, when they indicate culture as the central axis of the trip, they last 6.5 to 10 days. The main tourist destinations are Morelia, Pátzcuaro and Uruapan. The main activities they carry out are visits to architectural monuments, museums, archaeology, gastronomic tasting, an approach to craft traditions and cultural events.

The international profile of the main visitors are couples (34%) and groups of 3.8 people, who travel accompanied by family members (29%) and friends (30%). With an average age of 25 and 34 years. The place of origin is mostly from the United States (Texas, California and Illinois), followed by countries such as Spain, Canada and France. His socioeconomic status is high with a median annual income of \$60,000. 78% have university studies and 41% are professionals. The average expense is \$6,500 pesos. The main type of accommodation is all-inclusive hotels (50%) with a duration of 9 nights. The main tourist destinations are Morelia, Pátzcuaro, Uruapan, Country of the Monarch, Zamora and the Coast. The main activities they carry out are the visit to architectural monuments, museums, archaeology, gastronomic tasting, approach to traditional festivals, crafts and cultural events.

National and international tourists obtain information initially from family and friends, followed by the Internet or travel agencies. Planning is present in both cases 15 days (national) and from one to three months of planning in the international case.

Offer of the Don Vasco tourist route

The number of services that are present in the tourist route are varied with great fluctuation of prices. The profile identified that tourists mainly visit the cities of Morelia, Pátzcuaro and Uruapan, which represents 93% of the hotel capacity of the route.

Table 2. Distribution of the accommodation offer on the Don Vasco route

Number of rooms	Total	5	4	3	2	1/sc
Morelia	3754	487	1390	567	473	837
Pátzcuaro	994	0	222	369	185	218
Zona lacustre	220	0	0	43	117	60
Uruapan	1707	0	429	369	375	534
Meseta purépecha	233	0	0	74	65	94
Total	6908	487	2041	1422	1215	1743

Source: Strategic Plan for the Don Vasco Route. SECTUR Government of Michoacan, 2016.

It has a total of 157 economic units dedicated to food. The municipalities that have archaeological zones are: Cuit-

zeo, Morelia, Tzintzuntzan, Tupataro, Ihuatzio, Pátzcuaro and Tingandapio with tourist attractions.

Table 3. Service offers on the Don Vasco Route

Municipal	Agencies travel and s ervices of reservation	Parks aquatic and spas	Rental of cars without driver	Fields golf	Convention centers	Centers of teaching tour	Guides tourists
Cuitzeo	1	0	0	0	0	0	1
Erongarícuaro	0	0	0	0	0	0	0
Morelia	183	2	4	3	6	18	84
Nuevo Parangaricutiro	0	0	0	0	0	0	0
Paracho	0	0	0	0	0	0	0
Pátzcuaro	3	0	0	0	1	2	2
Quiroga	2	1	0	0	0	0	0
Tzintzuntzan	0	0	0	0	0	0	0
Uruapan	49	3	0	0	1	4	1
Total	237	6	.4	3	8	22	88

Source: Statistical Yearbook of Michoacán 2019.

Based on cultural tourism, the lake area and the Purépecha plateau are linked to give rise to the tour that Don Vasco de Quiroga made through the Michoacan territory linked to crafts and history. The institutional business actors that currently exist in the area are:

- The Association of Hotels and Motels of the State of Michoacán (AHMEMAC)

- The Association of Tourist Guides of the State of Michoacán
- The Michoacan Association of Spas and Water Parks, A.C.
- The Association of Artisans.

The articulation of business and government institutions is based on principles of economic and cultural sustainability, such as: 1) it implies the generation of wealth in the

destination and its consolidation in the tourist value of the destination; 2) implies in the development of the route to preserve the cultural heritage and the transmission of customs and traditions. In this sense, the resources that the route has are:

- History, popular architecture and art
- Living traditions
- Craft traditions
- Gastronomy

- Handicrafts
- Natural resources

Tourism development plan for the Don Vasco route
The development plan is a tool that promotes social development in a territory. Therefore, it has the bases to identify the needs or dissatisfactions of society in the search for the improvement of its quality of life. The following table 4 breaks down the development plans that make up the Don Vasco tourist route and its elements in relation to tourism.

Table 4. Development plan of the municipalities that make up the Don Vasco Route, Michoacán

Geographic areas/ Exercise	Morelia	Pátzcuaro	Zona lacustre	Uruapan	Meseta purépecha
Don Vasco route	✓	✓			
Tourist routes	✓		✓		
Lodging	✓	✓			
Quality and diffusion	✓	✓	✓	✓	
Diversification/ competitiveness	✓	✓	✓	✓	✓
Restaurants	✓	✓	✓		
Security	✓	✓	✓		
Improve tourist image and preserve historical heritage	✓	✓	✓	✓	✓
Consolidate the administrative unit	✓		✓		✓
Design institutional programs	✓	✓	✓	✓	✓
Sustainable tourism	✓	✓	✓	✓	✓
Technology and tourism				✓	
Digital government	✓			✓	
Society – tourism				✓	✓
Smart territory	✓				
Smart tourism process towards 2041	✓				

Source: Own elaboration based on the development plans of the municipalities that make up the Don Vasco Route.

The development plans analyzed in the municipalities that make up the route show the growing interest in consolidating tourist destinations and diversifying activities to attract tourists. Although only Morelia and Pátzcuaro mention the Don Vasco route in their plans, and when it comes to smart tourism, only Morelia sees this concept as central to the future of economic activity. Thus, Morelia and Uruapan mention promoting a digital government, it is Morelia that contemplates the territory and smart tourism as a long-term project. The remaining municipalities coincide with quality, diffusion, competitiveness, image, programs and a clear orientation towards sustainable tourism.

Especially the capital of Michoacán, Morelia has the NExT plan (New economy for the territory) for 2041 as the guiding axis of the city's development. The NExT 1.0 has been considered as the first of nine development plans that will be developed in the city, to provide solutions to the needs of the population and the territory in the face of constant changes, where the thematic axis is the intelligent territory with its involvement in the municipal cooperation, innovation, knowledge and technology, the foregoing in order to improve the quality of life of the population.

Figure 4. Map of the state of Michoacán with central tourist destinations



Source: IMPLAN, 2019: 66.

In addition, a Smart Morelia or intelligent Morelia is contemplated for 2041, starting from the fact that the city is in the heart of the diamond, this concept comes from territorial diamonds that respond to key territorial spaces for development. The diamond of Mexico is a space that occupies 16.8% of the country's surface, where 44.7% of the national population lives and generates 51% of the Mexican GDP. The diamond is made up of the cities of Guadalajara, Aguascalientes, San Luis Potosí, León, Querétaro,

Morelia and the megalopolis of Mexico, therefore, the State of Michoacán is located in a strategic zone of economic growth and development in the country.

Conclusions

Tourist routes at a conceptual level are essential to be able to identify the elements that are available in a territory. In addition, planning is central to launching quality and

competitive tourism products, respecting the tangible and intangible resources of the immediate environment. In the case of the Don Vasco route, it has potential given the great diversity of activities and actors involved in its development and execution. Undoubtedly, tourism activity responds to the possibility of promoting an economic development mechanism in rural areas by coordinating the actors involved.

Thus, the tourist route denotes a network of activities that are linked to generate an appropriate environment for tourist activity. In the case of the route managed by the Secretary of Tourism of the State of Michoacán, it is an opportunity to centralize its operational process, and generates an opportunity for long-term follow-up with constant financing. Therefore, the generation of routes from the central administration is an opportunity to link the actors of the territory in a directed and coordinated tourism development for the benefit of all the actors.

In addition, the routes in rural environments in the case of Latin America come to generate a greater participation of the actors involved towards governance, although it is important to point out the need for a constant, coordinated, informed and sustained linkage of the actors for the generation of a reliable environment for the implementation of joint actions towards the well-being of the quality of life of the population.

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Research paper

Feasibility of the “Hatun Ñan Ccocha Kunaman” ecotourism micro corredor, apurímac region, Peru

Viabilidad del micro corredor eco turístico “Hatun ñan ccocha kunaman” region Apurímac, Perú

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Received: 2022-10-05

Accepted for publication: 2022-11-15

Published: 2022-12-31

ABSTRACT

The general objective was: to demonstrate and illustrate the viability of the ecotourism micro-corridor “Hatun ñan ccocha kunaman”, Apurímac región, Peru. The área includes four hydrographic micro-basins, on average they are 60,000 hectares. The population and sample is directed, it is a geomorphological system: the formation of the terrestrial relief by the action of rain, wind and tectonic force, as well as water surfaces, which can be exploited and used by human intervention for its landscape and species of flor and fauna, located between 3,900 to 4,600 masl. Design and level descriptive. There is feasibility the sections present an intensity of average fatigue of walking, which is pronounced when it exceeds from 5 kilograms above the average height; in addition, complementary services such as muleteering, food, staging of rituals and dances can be offered. The construction of infrastructure, with materials from the área, is for leisure or rest, hygiene services in the sections, whose construction does not alter the landscape. The activities that can be developed are: hiking, trekking, camping, mountaineering, fishing in a fish farm. The Price of 84 pen (soles) Will allow to offer service of minimum services. The Project is profitable, at an opportunity cost of 20%, over ten years, it yields a positive result of s/. 72,351.00 pence (soles)

Keywords: conditioning, attributes, organization, operators, accessibility.

RESUMEN

El objetivo general fue: demostrar e ilustrar la viabilidad del micro corredor eco turístico “Hatun ñan ccocha kunaman”, región Apurímac, Perú. La población y muestra es dirigida, es un sistema geomorfológico: la formación del relieve terrestre por acción de la lluvia, viento y fuerza tectónica, además de superficies de agua, que pueden ser explotados y aprovechados por intervención del hombre por su paisaje y especies de flora y fauna, ubicado entre los 3,900 a 4,600 msnm. Diseño y nivel descriptivo. Existe viabilidad los tramos presentan una intensidad de fatiga media de recorrido a pie, la cual se pronuncia cuando excede a partir de 5 kilogramos por encima al promedio de la talla; se pueden ofertar servicios complementarios como arriaje, alimentación, escenificación de ritual y danzas. La construcción de infraestructura, con materiales de la zona, es para el ocio o descanso, servicios de higiene en los tramos. Las actividades a desarrollar, son: hiking, trekking, campamento, alpinismo, pesca en granja piscícola. El precio de 84 pen (soles) permitirá brindar servicio de paquete de servicios mínimos. El proyecto es rentable, a una tasa de costo de oportunidad del 20%, a diez años, arroja resultado positivo de s/. 72,351.00 pen (soles).

Palabras clave: acondicionamiento; atributos; organización, operadores; accesibilidad.

INTRODUCTION

In the manual on tourism accessible to all, specific to areas of intervention (UNWTO: 2016, p. III, 28) it specifies that measures, actions, projects to improve accessibility must be coordinated and implemented for an adequate use of potential tourist resources. This will contribute at the same time, in planning a regulation, which allows the consolidation of accessible tourism. The step of improvement and projects goes hand in hand with awareness that allows introducing the meaning of accessible tourism in the population, generating awareness (UNWTO: 2016, p. III 29).

The world panorama is the growing concern regarding the advance of differences and inequities in macro-territorial regions, especially in Latin America, as a result of climate change that is becoming progressive and exponential today by 2022 in the case of Europe, from the figures presented by the report Stern (2006); likewise, the summits on climate change have not been able to achieve the development of absolute agreements to curb greenhouse gas pollution; added, the gradual recovery of the scourge that humanity went through; Covid 19, today mutated and known as sars-cov2. Which still keeps the world economy paralyzed.

The measures that many countries have adopted to curb this scourge, such as prolonged confinements due to frequency, have forced a redirection of the practice towards alternative tourism, implementing a strategy of economic recovery in the population, based on natural and experiential tourism, which allows strengthen the ties between tourism, ecology and community relations.

Nature tourism is defined as: that environmentally responsible tourism modality consisting of traveling or visiting natural areas [...] in order to enjoy, appreciate and study the natural attractions (landscape, flora and wild fauna) of said areas, as well as any manifestation cultural (present and past) that can be found there, through a process that promotes conservation, has a low environmental and cultural impact and [...] constitutes a social and economic benefit for local populations (Ceballos Lascuráin, 1996) Ecotourism emphasizes the use of environmental and social studies, as well as long-term monitoring programs, to assess and minimize the impacts of tourism. It strives to maximize economic benefit for the host country, local businesses and communities, living in and adjacent to natural and protected areas (Subtrato and Huibin 2018).

At the regional level, the Concerted regional Development Plan of the Apurímac region. (PDRC to 2021) indicates that tourism is one of the main potentialities to be developed, but to date there are no relevant research projects that demonstrate the conditions of accessibility in natural-archaeological resources to develop tourist corridors.

In the Andahuaylas province, to date there are specific studies on the potentiality, accessibility in the tourism sector both at the provincial and local level, given the wealth of information from former authorities of the sub-regional Directorate of Foreign Trade and Tourism, case former director Lisbeth Salas Ccente, also as president of the Apurímac regional Chamber of Tourism, influences and justifies through her statement that the province of Andahuaylas and the Apurímac region, has a considerable amount of tourist resources, dispersed, which are in deterioration, several are not there and others are inadequately inventoried, among other problems.

The interviews made to authorities linked to the tourism and commercial sector, case: Augusto Fernández Cabero carranza, vice president of the Andahuaylas Chamber of Commerce, Industry and Raúl Ángel Gutiérrez Rodas, president of the Andahuaylas Chamber of Tourism; they determine that there is no sustainability for the tourist resource and even categorize it, because the administration that should be in charge of the associations of tour operators are incipient, they have not achieved the vision, sense of cohesion and greater associative development, they present problems in horizontal integration; those that exist are limited to family businesses whose vision is to have daily bread and employ the largest number of family members; In addition, there are very few associations of community tour operators born from the peasant community, whose function or purpose is business training, the rational exploitation and conservation of the space-environment, which contains the tourist resource. The problem is that there are no ecotourism micro corridors in the Apurímac region, which not only allow an improvement in family income from the use of natural resources, but also allow the development of a parallel industry of cultural, leisure and medical services natural; given this, as a result of the advance and positioning of sars-cov2, we have a parapandemia in development, according to an interview with psychologist and teacher William Camilo Yauris Polo, he said that the presence of a

bubble of social imbalance at a psychological and emotional level is identified, which is very soon it will detonate in major consequences; however, it is an opportunity for the agents of the alternative tourism sector, due to the potential market that could be served, aimed at psychological and emotional therapy tourism, related to ecotourism.

There are isolated, non-integrated ecotourism routes that waste potential and investment opportunities to become a major project, in the case of: a) Ñan orccopi Suitoccocha, José María Arguedas district b) Ñan orccopi ccocha kunaman, san Jerónimo district. Based on these local research backgrounds, developed with funding from the José María Arguedas University (undergraduate), we seek to incorporate and convert ecotourism resources into a micro-corridor, which presents the minimum necessary conditions to take advantage of and have sustainability, to conserve lakes and biodiversity.

Another factor that sustains the problem is in the context, which restricts the development of an ecotourism micro-corridor, is that the projected space that it will occupy and the facilities to be implemented are limited by legislation of community organizations in the peasant communal territories, therefore, from Valle (2019) describes that these spaces and resources are protected and preserved based on the provisions, agreements given by the general assembly of the peasant community, whose execution falls on the communal board; this respect and care is unpaid; it is carried out for the identity the conservation of its legacy as an ancient ethnic group that dominated the space, the material and immaterial evidences, form the peasant communal organizations.

Our study focuses on taking advantage of natural tourist resources, with potential, medium accessibility conditions, in addition to their attributes, which are located in the divortium aquarum west of the limit of the provinces of Andahuaylas and Aymaraes in the Apurímac region, taking as an example the case of water surface reserves. The general objective of the research was: to demonstrate and illustrate the viability of the ecotourism micro corridor "Hatun ñan ccocha kunaman" located in peasant communities of the Kishuará, san Jerónimo, José María Arguedas districts, Andahuaylas Province, Peru.

The antecedents that support the investigation allowed

to benefit from an adequate methodology, what was pertinent, punctual was extracted, they were; from Martínez (2017) entitled: Nature tourism: a sustainable tourism product; which indicates that nature tourism has been shaped according to academic approaches and tourism policies in order to a logical process of evolution experienced in the tourism sector worldwide. The negative impacts caused by the conventional model due to predation have raised the alarm and the entire sector has been assisted by the general process of sustainability in local development, consequently prevailing the paradigm of responsibility and sustainability in tourist destinations.

Likewise, the research of Barragán (2017), serves as background since his proposal: Designing of an ecotourism route in the municipality of Coloso-Sucre: hiking and biodiversity, exposes the following conclusions; the diagnosis that was made on the municipality, identified a series of obstacles related to infrastructure issues and tourism planning; due to the neglect in these aspects, the lack of coordination and organization of the local administration with the community and private entities, in the face of the promotion of its attractions, and tourism development; it is palpable. It is a proposal that involves a descriptive design of the route based on the natural attractions, activities related to the knowledge of the history of the municipality, its architecture, culture and customs, as well as typical tasks such as handicrafts and gastronomy.

Authors such as Dagnachew, Mulugeta, Alubel and Engdu (2019) in their study, demonstrated an improvement in enabling policy, a growing global demand for ecotourism, a potential benefit of ecotourism, the location of the site, the expansion of academic institutions, the increasing attention of the government conservation project and NGOs in the forest, indicated that the development of community-based tourism. The main conclusion drawn from this study was that community-based tourism (CBT) has multifaceted contributions to overcome the destruction of resources that is currently underway and to improve the livelihoods of people living around the forest.

Obombo y Velarde (2019), present an investigation that aimed to characterize ecotourism as a conservation and sustainable development strategy in biosphere reserves. To achieve this end, the relationship between the benefits and the attitudes of local communities towards conserva-

tion was analyzed. Mixed methods, a quantitative survey (n=138), open interviews (n=22) and four focus groups were applied. The results indicate that ecotourism can generate important economic benefits for local communities and encourage their participation in conservation initiatives, avoiding destructive practices, such as felling trees, hunting or activities that involve intensive use of natural such as agriculture.

We have Moreno (2017), documented and analyzed a project on alternatives for the management of ecotourism resources in the region of Los Tuxtlas and the Sierra de Santa Marta-Veracruz-México, demonstrating that although the effect of ecotourism is still limited-both for the conservation of natural resources and for local socio-economic development-shows considerable potential for growth in the medium and long as the notorious environmental, economic and sociocultural issues that the ecotourism sector in this region must currently face. The route was descriptively designed, identifying a moderate degree of difficulty, intended for people with some walking experience; the qualification based on the location of attributes, whose route is for different ages; in addition to the passion for contact with nature.

Gonzales (2017) in his research work entitled: proposal for the creation of the Flor Florida private conservation area in the Callayuc district-Cutervo-Cajamarca, the legal physical sanitation of the plot was carried out to promote it as a Conservation Area Private who owns Mr. Manuel Gonzales Alvarado, with an extension of 48.54 hectares and presents a public deed. The proposal focused on determining that: the primary actions that will generate potential economic income are eco-tourism activities in the Flor Florida ACP project.

Castro (2018) in his study entitled: proposal for and ecotourism route for the sustainable development of the Suitabamba farmhouse in the Cutervo National Park-Cajamarca, he presents an innovative project aimed at the tourism sector. It is the creation of an ecotourism route, with the purpose of sustainably developing the community of Shitabamba, in the district of San Andrés de Cutervo. In the investigation, various factors were analyzed, such as the disposition of the community towards the development of an ecotourism route, and the resources that would be part of the route, said analysis was carried out with the inventory file of tourist resources of the Ministry of Foreign Trade and Tourism of Peru.

Valle, Huamán and Salas (2019) the purpose of the research is to determine the minimum accessibility conditions that will allow outlining the exploitation plan for a sufficient use and conservation of the ecotourism zone called: ñan orccopi ccocha kunaman. The type of research is basic, descriptive design. The exploitation of ecotourism zone is a usufruct proposal based on the attributes and conditions: landscape, road, access, attractions, tourist plant. An adaptation of internal paths, signage must be carried out. The current state only allows visits of a maximum of six hours. The adaptation includes three phases to increase the value of the ecotourism zone: the first one is to make use of it cleanly, with the adaptation of the pedestrian path, signaling and starting forest planting. The second condition a bridle path and infrastructure care, rest, security, and continue with forest planting.

Within the theoretical bases it is stated:

The formal study of sustainable tourism rises at the beginning of the 90s of the last century, it dealt with some problems and complications in relation to the evaluation of the levels of relevant knowledge on sustainability. At present, it should be noted that the sustainable tourism model could simplify the parameters of its application and, therefore, it will be attractive for destinations and companies, authors such as Grunewald, Sebastián, Fernández & Capel (2011) maintain that the accessible tourism is an activity that implies establishing a "point of view" that will determine the way in which reality will be understood. The foregoing proposes to establish as a definition of accessible tourism: "the complex of activities originated during free time that enable full integration from the functional and psychological perspective of those people with restricted capacities, obtaining during them full individual and social satisfaction of the visitor" (p. 69).

It is Ceballos-Lascurain, in the early 1980s, one of the first writers to use the term "ecotourism". Later it was popularized in the studies of Boo (1990) on Ecotourism, defining it as: that which consists of traveling to relatively calm or unadulterated natural areas with the specific objective of studying, admiring and enjoying the landscape and its wild plants and animals, as well as any existing cultural manifestation (both past and present) found in these areas.

Taking this description into consideration, nature-oriented tourism implies a scientific, aesthetic, or philosophical approach to travel. The main point is that the person

who practices ecotourism has the opportunity to immerse himself in nature in a way generally not available in the urban environment. (Ceballos-Lascurain, cited in Boo 1990) Ecotourism is a variety of tourism that involves visiting fragile, pristine, and relatively undisturbed natural areas, which is assumed to be a small scale, low-impact, and infrequently different from business tourism (Vivanco, 2002) Its purpose is also to empower the individual, produce funds for ecological conservation, directly benefit the economic development and political empowerment of native communities, or foster respect for diverse cultures and human rights.

Since the 1980s, tourism has been considered an essential endeavor by environmentalists, so that future generations could enjoy destinations relatively untouched by human intervention (Honey, Martha, 2008) . According to Arsenijevic and Bohanec (2011) found that "the term ecotourism must be understood in participation with five criteria: nature conservation, low impact, sustainability, significant community participation and environmental education"(p. 47).

For this reason, the participation of rural inhabitants in the management of their own space is transcendental, in addition to their knowledge and appreciation of natural resources, since they are variables that point to a better and more complete planning, in addition to helping to achieve development sustainable local (Rojas, 2013).

The study is supported by what was stated by Sampayo (2010) "it proposes tourism for all and leads to fundamentally establishing integration guidelines during tourist activity for that group of people with different abilities that are manifested by physical restriction as and/or anthropometric" (p. 47).

METHODOLOGY MATERIALS AND METHODS

The research was carried out in the province of Andahuaylas, Apurímac, region. The place of application was the communal territories of Kishuará, Tintay, Lliupapuquio, Huancabamba-Checche-Huaraccopata, in the districts of Kishuará, San Jerónimo and José María Arguedas, the area includes four micro hydrographic basins, each communal territory exceeds 15,000 hectares of surface, on average together there are 60,000 hectares. Desing and descriptive level.

The population and sample is directed, it includes all the analysis units containe in the ecotourism micro corridor (Hernández, Fernández and Baptista, 2014) The unit analysis is a geomorphological system: the formation of the action of rain, wind and tectonic force, in addition to water surfaces, which can be exploited and used by human intervention for its landscape and species of flora and fauna. The relief of the land located between 3,900 to 4,600 meters above sea level is studied. Within the methods and techniques used we have: theory, principles, on accessible and alternative tourism, the procedures and indicators based on the manual for updating and inventory of tourist resources of the Ministry of Foreign Trade and Tourism of Peru.

MINCETUR (2018) "The national of tourism resoucers constitutes a management tool that contains real, orderly and systematic information on tourism resoucers that identifies the tourism potential of the country" (p. 14) In law 29048, a tourist resoucers is understood as "expressions of nature, archaeological wealth, materila and imaterial historical expressions of great tradition and value that constitute the basis of the tourist product" (p. 14). The research work, only phase I was developed, regarding the categorization, which means: "collection of information, process that orders the data and clssifies the places, objects, events and others of interest of the tourist resoucers of the country, region or determined area" (p. 16).

The categories of tourist resoucers are: natural sities, which groups various elements of nature that, due to their own attributes, are considered an important part of the tourist potential Cultural manifestations, are the differnte cultural expressions of the country, region or town, from ancestral times (progressive development of a certain place), such as archaeological sites, historical sites, among others, special reference is made to the elemnts or tangible goods created by the man (p. 21).

Regarding the techniques, they were the following: observation, recognition in the field; topographic survey with GPS; interviews with key informants and discussion and focus groups, analysis of documentary review of secondary sources, the inventory file of tourism resoucers of the Ministry of Foreign Trade and Tourism of Peru; the desing of internal and external routes.

The research desing, according to (Hernández et al, 2014) is a case study, which predominates the mixed approach,

because we carry out the diagnoses, the induction process by collecting information in situ, we detail the characteristics, attributes of the tourist resource, relations and interests of the population and the organization of tour operators with the accessibility of the tourist resource, as well as costs and economic evaluation.

The description accompanied by the illustration, sustained in the economic evaluation, will allow to propose the organization of modifications, adaptations of the ecotourism micro corridor for the benefit of natural resources and population. In addition, by (Hernández et al, 2014) The type of research is basic, because knowledge is expanded from the diagnoses, a proposal is delivered that is the feasibility based on the design of the conditioning and use plan for conservation and rational exploitation of the types of tourist resources contained in the micro-corridor added to the perspective of proposing the installation of signaling, for the start of implementation work by peasant communities, and awareness tests in specific groups and potential claimants.

RESULTS AND DISCUSSION SECTION HEADING3

The registry search was carried out, through an informative note from the Public records Office-Andahuaylas, having confirmation: The registered communal territories are the following:

1.- Andahuaylas District, Huancabamba-Checche-Huaraccopata peasant community, approved its constitution of the communal organization with Supreme resolution No. 142, of 05.8.1967, made up of 817 families. Registered territory with 24,284.00 has, in original mechanical file 354. It is clarified that the indicated peasant community is now located in the José María Arguedas district, as of the year 2018.

2.- San Jerónimo District, Lliupapuquio peasant community, approved its constitution of the communal organization with Supreme Resolution No. 146, of 05.08.1967, made up of 635 families. Territory registered with 9,387.50 has, in original mechanical sheet 344.

3.- Kishuará District, Tintay peasant community, its constitution of the organization approved with Directorial Resolution No. 022-89-DGTP-CORDEAP, of 10.12.1989, made up of 201 families. Territory registered with 4,830.00 has, in original mechanical sheet 121.

4.- The lakes or water surfaces, located in peasant communal territories, do not have physical-legal sanitation. However, the lakes of the Lliupapuquio community and the Huancabamba-Checche-Huaraccopata community; they present a ministerial resolution for the environmental protection zone and water micro-basin conservation. The smaller lakes, located in the peasant community of Kishuará, do not have a ministerial resolution for an environmental protection zone and micro-watershed conservation.

The future area that the ecotourism microcorridor will occupy is divided into three sections, which, after a process of awareness, accompaniment, taking measures, placing milestone, will allow the consolidation of physical-legal sanitation towards a State institution with competence and functional relevance, which will guarantee the supervision and proper use, which is monitored by the community association, which by public bidding, will have access to the administration of sections of the circuit, these sections being:

- Ccotaquite sector, peasant community of Tintay, the section of 13,308.2 mml in length must be registered, the width or road space is 50 ml. The final area contains 66.54 hectares.
- Lliupapuquio sector, peasant community of Lliupapuquio, the section of 15,025.96 ml in length must be registered, the track width is 50 ml. The final area contains 75.13 hectares.
- Suitoccocha sector, peasant community of Huancabamba-Checche-Huaraccopata, the section of 11,260.17 ml in length must be registered, the track width is 50 ml. The final area contains 56.31 hectares.
- The total area of the ecotourism microcorridor, closed with three entry points, continuous access, is 197.98 hectares.
- The area of the ecotourism micro-corridor crosses the communal territories, does not harm or alter land intended for sowing or seasonal cultivation. The future leisure and rest facilities will be located inside the 50 ml wide.

To date, there are no problems of territorial boundary conflicts between the peasant communities mentioned, what

is important to describe is that in the territory of the annex of Ccotaquite, contained in the peasant community of Kishuará, 10% of territory was approved in community assembly, expansion of forest cover, in the pine species, which contributes to improving and expanding the value of the landscape within the first section of the ecotourism corridor; this first section is separated by a divortium aquarium, which creates conditions for the repopulation of species, which increases the value regarding the sighting of birds and other species.

In the territory of the peasant community of Lliupapuquio, the extension of the forest cover was not approved, because in the micro-watersheds that contain the Antacocha and Paccococha lakes, there are extensive areas whose territory presents conditions for the feeding of South American camelids, added that their Breeding is extended and they carry out tasks of the "chaqo" or shearing of the hair of the South American camelid; however, the extension of the specific forest cover will be carried out in the vicinity of the Cariococha and Tipicococha lakes, to increase the value of the landscape; in this area the South American camelid does not arrive and does not feed.

Lake Suitococha, located in the peasant community of Huancabamba-Checchce-Huaraccopata, is destined for a reservoir and fish development, as well as a territory for grazing South American camelids, it is surrounded by a micro-basin, which protects and prevents it from being violated by anthropic factors with sufficient natural barriers.

Regarding accessibility, it was extracted from google earth, satellite photography capture for filed recognition (in situ) then we relied on the walk to establish the direction of access, fatigue levels, rest points and hygienic services facilities (aseptic wells) it should be noted that the walk is intense at the beginning, when it begins by Ccotaquite during the middle of section 1, then it is minimized for section 2, taking a certain intensity of fatigue to start section 3.

The physical conditions, the biological characteristic of an average visitor, obtained from the tests done during the walking tour, are:

Tabla 1. Nivel de fatiga según edad, peso y talla.

N°	Edad	Peso (kg)	Talla (ml)	Reposos en tramo	Tramo
1	De 20 a 35 años	64	1.65	1	1, 2, 3
2	De 20 a 35 años	72	1.65	1	1, 2, 3
3	De 20 a 35 años	78	1.65	2	1, 2, 3
4	De 20 a 35 años	83	1.65	3	1, 2, 3
5	De 20 a 35 años	88 más	1.65	4	1, 2, 3
6	De 20 a 35 años	69	1.75	1	1, 2, 3
7	De 20 a 35 años	76	1.75	2	1, 2, 3
8	De 20 a 35 años	83	1.75	2	1, 2, 3
9	De 20 a 35 años	90	1.75	3	1, 2, 3
10	De 20 a 35 años	101 a más	1.75	4	1, 2, 3
11	De 20 a 35 años	82	1.85	1	1, 2, 3
12	De 20 a 35 años	91	1.85	1	1, 2, 3
13	De 20 a 35 años	104	1.85	3	1, 2, 3
14	De 20 a 35 años	118	1.85	3	1, 2, 3
15	De 20 a 35 años	127 a más	1.85	4	1, 2, 3
16	De 35 a 50 años	73	1.65	1	1, 2, 3
17	De 35 a 50 años	72	1.65	3	1, 2, 3
18	De 35 a 50 años	85	1.65	4	1, 2, 3
19	De 35 a 50 años	82	1.75	2	1, 2, 3
20	De 35 a 50 años	91	1.75	3	1, 2, 3
21	De 35 a 50 años	103	1.75	4	1, 2, 3
22	De 35 a 50 años	92	1.85	2	1, 2, 3
23	De 35 a 50 años	101	1.85	3	1, 2, 3
24	De 35 a 50 años	112	1.85	4	1, 2, 3
25	De 51 a más años	Los pesos y tallas son similares al rango de 35 a 50 años, sin embargo, los reposos son mayores están por encima de 3 a más paradas por tramo e inclusive según caso de salud, el acompañamiento con el servicio complementario de acémila			1, 2, 3

Source: data extracted from the field, with collaborating members of the 2021 research team.

Figura 1. Territory covered by the ecotourism microcorridor



Source: Google earth Maxar technologies. Technical aspect: date taken 05.16.2021, elevation 4286 masl, lens eye height 24.35 km UTM coordinates 13°46'47.96" and 73°13'00.10". extracted: final research report at the José María Arguedas National University resolution 244-2022-CO-UNAJMA.

Figura 2. Territory covered by section 1 ecotourism microcorridor



Source: Google earth Maxar Technologies. Technical aspect: date takes 16.05.2021. Extracted: final research report at the José María Arguedas National University resolution 244-2022-CO-UNAJMA.

Distance and time measurements for each internal route that integrates the ecotourism micro-corridor, for walks or with assimilation support.

TRAMO 1. Ccotaquite	Distancia (m)	Distancia (km)
1 lagos de Tintay	4641.2	4.6412
2 estación	3871.31	3.87131
3 estación	2038.25	2.03825
4 estación	2757.44	2.75744
TOTAL TRAMO 1	13308.2	13.3082

The route begins in the town of Ccotaquite, located above 3,800 meters above sea level, in a south-west direction, it continues along the access or carriageway trail, close to the ravine, passing through the quarry, to station 1 of the section, which is the first stop, for having a slope between 20° tl 30° degrees of inclination, has a distance of 4.64 km, whose travel time on foot for a visitor between 15 to 40 years old, without health problems, something habitual in walking, he runs it in 1 hour and 10 minutes. The visitor between the ages of 15 and 40, without health problems, but overweight and not used to walking uphill, covers the

distance in 2 hours and a half with two intermediate stops of ten minutes.

We continue in a south-west direction until we can observe two lakes in the distance and make a break along the edge of the lakes in a north-west direction, until the second station, which is located at approximately 4000 meters above sea level, to enjoy the panoramic view and landscape. From station 1 to station 2, a distance of 3.87 km is covered, whose travel time on foot for a visitor between 15 and 40 years old, without health problems, something usual on foot, covers it in 1 hour and a half, it is for the slope of 25° to 32° degrees of inclination, here we observe the first two lakes. The visitor between the ages of 15 and 40, without health problems, but overweight and not used to walking uphill, covers the distance in 3 hours and 15 minutes with an intermediate stop of ten minutes.

We continue in a northeasterly direction, passing by two lakes, until we reach the third station, which is located above approximately 4070 meters above sea level, to enjoy the panoramic view and landscape. Grom station 2 to station 3 a distance of 2.03 km is covered, whose walking time for a visitor between the ages of 15 a 40, without health problems, something usual on foot, covers it in half an hour, it is because we went down from 35° to 25° degrees of inclination, here we observe the two more lakes and we see a third lake. A northwesterly direction, the path and passing by the south shore of the lake, until reaching the second station called Paccoccocha, which is located below approximately 4000 meters above sea level, to enjoy the panoramic view, landscape and spot the town of Ccotaquite. From statio 3 to station 4 a distance of 2.76 km is covered; it is covered in forty minutes, it is because we went down from 35° to 25° degrees of inclination, from here, we have a final route, which goes down to the town of Ccotaquite whose distance is 2.24 km, where there are bridle paths and carriage trails.

TRAMO 2 - Lliupapuquio	Distancia (m)	Distancia (km)
2 estación aceroccocha	6195.88	6.19588
2 estación - Paccoccocha	8830.08	8.83008
TOTAL TRAMO 2	15025.96	15.02596

Figura 3. Territory covered by section 2 ecotourism microcorridor



Source: Google earth Maxar Technologies. Technical aspect: date takes 16.05.2021. Extracted: final research report at the José María Arguedas National University resolution 244-2022-CO-UNAJMA.

The route of the micro corridor has two alternatives, one on foot and another in a regular state of paved road. We will start with that alternative, which allows joining and camping from Ccotaquite. It starts from the second station of section 1, known as Ccotaquite, descends in a southerly direction continuing through a ravine that forms a narrow valley, located above 3800 meters above sea level, in a southerly direction, it continues along an access or path, attached to the slope of the hill and view of the ravine, to station 1 of station 2, which is the first stop and we see another lake, it has a slope between 17° to 28° degrees of inclination, it has a distance of 4.14 km, whose travel time on foot for a visitor between the ages of 15 and 40, with no health problems, something of the habit on foot, he travels it in 1 hour and 30 minutes.

In a south-west direction until you can observe a large lake in the distance, with a fish farm facility and make a break along the edge of the lake in a west direction, until the second station, which is located above approximately 4350 meters above sea level, to enjoy of the panoramic view, landscape, lake and bird watching, camelids. From station 1 to station 2, a distance of 6.19 km is covered, whose travel time on foot for a visitor between 15 and 40 years old, without health problems, something usual on foot, covers it in 1 hour and a half, it is for the slope of 15° to 23° degrees of inclination, here we observe the first two lakes, which are born from a formation of battery or continuity.

Standing in a southerly direction until you can observe and cross the lake damming, and then turn east to continue the walk along the southern shore of the three lakes, formed in a battery, we locate a fish farm facility, up to the third station, which is located above approximately 4380 above sea level, to enjoy the panoramic view, landscape, lakes and bird watching, reach an area or mystical sanctuary, where we can see the Apu Qorawiri, desde station 2 to station 3, a distance of 8.83 km is covered, whose walking time for a visitor between the ages of 15 a 40. Without health problems, something usual on foot, covers it in 2 hours and forty and five minutes, it is for the slope of 15° to 20° degrees of inclination, the long section is because we enter to the bottom or beginning of the lakes, plus a 1 hour rest, then we return along the same path, to spend the night on the south shore in front of the dam.

Figura 4. Territory covered by section 2 ecotourism microcorridor



Source: Google earth Maxar Technologies. Technical aspect: date takes 16.05.2021. Extracted: final research report at the José María Arguedas National University resolution 244-2022-CO-UNAJMA.

The other alternate entrance for the Lliupapuquio section is through the third entrance that starts from the pine forest, up to the summit, where the first lake can be seen, to continue descending in a southerly and easterly direction, until reaching the next larger lake, which is dammed and supplies to the Chumbao river, bankruptcy and continues in a west, south and east direction until reaching a fork, to the largest lake, and to the east to the largest lake that forms the battery of lakes, the distance for the first one that contains the first fork is 7.84 km, it is done by vehicle

in 1 hour and a half by the slope between the 15° to 29° degrees and the second section that contains the second fork is 9.87 km, it is also done by vehicle in 2 hours by the slope between 15° to 30° degrees. The two sections have a paved road, enabled by the installation of a fish farm in the larger lakes. In addition, in this section, you can make stops on the way back to visit the fish farms installed on the banks of the Chumbao river. The access and route to the three lakes that form the battery, its route on foot is 2 hours and a half round trip. With asémila service it is three and a half hours.

TRAMO 3 - Suitoccocha	Distancia (m)	Distancia (km)
1 estación-día 3	6135.96	6.13596
2 estación-día 3	5124.21	5.12421
TOTAL TRAMO 3	11260.17	11.26017

Figura 5. Territory covered by section 2 ecotourism microcorridor



Source: Google earth Maxar Technologies. Technical aspect: date takes 16.05.2021. Extracted: final research report at the José María Arguedas National University resolution 244-2022-CO-UNAJMA.

The route of the Suitoccocha section has a path in a regular state, the first section of paved road. We will start at the camp from Paccoccocha. It starts from the third station of section 2, known as Lliupapuquio, ascend in a southerly direction, continuing along the summit, reaching a carriage trail, ascending the slope of a ravine that forms a narrow valley, located above 4400 meters above sea level, we continue in an easterly direction, close to the slope of the hill and three lakes can be seen, one of them dammed, up to station 1 of station 3, which is the first stop, we continue in a south-west direction, we see another lake, until we reach the summit and station 2, the entire section has

a slope between 19° to 36° degrees, it has a distance of 6.14 km, whose travel time on foot for a visitor between 15 and 40 years old, without health problems, a bit of a walk, he covers it in 2 hours and 30 minutes.

In a south-west direction, from station 2 until reaching a distance to observe a large lake, with a fish farm installation, a dam and making a break along the north edge of the lake in the west direction, up to the resting summit, which is located by above approximately 4300 meters above sea level, this to enjoy the panoramic view, landscape, lake and bird watching, camelids; from station 2 to station 3, a distance of 5.12 km is covered, whose travel time on foot for a visitor between 15 and 40 years old, without health problems, something usual on foot, covers it in 1 hour and a half, it is for the slope of 15° to 27° degrees of inclination, here we observe the largest lake in all its magnitude.

For all sections visitors with disabilities in lower and/or upper limbs, heart problems cannot enter and enjoy the respective section. The route can also be done in ass, the time is the same for the group with overweight and little habit, a stop is also made.

PUNTOS	Altitud (msnm)
Entrada al micro corredor eco turístico Ccotaquite	3830
Punto de campamento e inicio segundo circuito	4305
1 estación Acero ccocha	4497
Campamento 2 - Sección 2	4255
Entrada al micro corredor eco turístico Suitoccocha	4305

Points of altitude above sea level, which are traveled, serve as a reference for the physical condition of the visitor, which must be in order to complete the entire journey in two to three days, added between one to two camps. The ride in asémila is by sections in the same section they are made with daily rest and return to the main support city. The entire ecotourism micro corridor oscillates between 3800 masl to 4550 masl.

Regarding the minimum infrastructure to install.

The signage must be installed according to the technical requirements of the Ministry of Foreign Trade and Tourism, in the form of identification panels, information, location, close to the entrance of each tourist resource.

The materials will be as stated in the signaling manual of

the indicated institution. Registration-control booth, at the entrance of each tourist resource, for the registration of visits, communication and persuasion during the transfer. The materials will be a construction of noble material, with a half-water roof, closed, with two rooms: service and collection-store.

Booth or rest environment, for power at the beginning of the circuit. The materials will be from the area. The building will have a double water roof, built with local wood, lined with ichu. The walls, with foundation and wall built with cyclopean material from the place, accompanied with cement, the height of the wall does not exceed 1.50 cm, with a ventilation of half a meter towards the beginning of the roof. In addition, this environment can be used to install tents for overnight stays inside.

Coat rack booth, for changing clothes or clothing, for the effort made, it is a continuous section to the room or rest room, with the same materials except that the whole room is closed. Hygienic service booths with combined materials to prevent the spread of contamination or infections. The materials complement each other, they are not replaced, and it is even implemented with a gas stool transformation system, which will be used for lighting environments.

Rest points in the sections of the route, with cyclopean material from the place for flat base conditions, from here, the installation of a double water shed, spacious 8 m long by 4.5 m wide, made of wood, the roof lined with ichu, inside wooden or stone benches (lined with mud) where you can rest and eat food. Accompanying, hygienic service as a complement, but not with the same specifications, aseptic wells whose maintenance is weekly will be installed.

Investment costs for the minimum infrastructure to be installed:

Tabla 2. Costos de inversión total y por tramos

N°	Infraestructura	Unidad de medida	Cantidad	Costo unitario	Total
Tramo 1:					
1	Señalética / panel	Unidad	2	5500	11000
2	Servicios higiénicos (sshh)	Unidad	2	7000	14000
3	Caseta de registro	Unidad	1	3500	3500
4	Ambiente de reposo/cambio	Unidad	1	4500	4500
5	Puntos de reposo/sshh	Unidad	2	3500	7000
Tramo 2:					
1	Señalética / panel	Unidad	2	5500	11000
2	Servicios higiénicos (sshh)	Unidad	2	7000	14000
3	Caseta de registro	Unidad	1	3500	3500
4	Ambiente de reposo/cambio	Unidad	1	4500	4500
5	Puntos de reposo/sshh	Unidad	2	3500	7000
Tramo 3:					
1	Señalética / panel	Unidad	2	5500	11000
2	Servicios higiénicos (sshh)	Unidad	2	7000	14000
3	Caseta de registro	Unidad	1	3500	3500
4	Ambiente de reposo/cambio	Unidad	1	4500	4500
5	Puntos de reposo/sshh	Unidad	2	3500	7000
Inversión para acondicionamiento			Por tramo: 40,000.00	Total	120,000.00

Source: data provided regarding the conditioning by the director of the Andahuaylas Sub -Regional directorate of Foreign Trade and Tourism, by Lic. Eder Roldán Pineda, 20.11.2021.

Statistic and economic analysis.

The economic analysis focuses on projecting the demand of the visitors that arrive to Apurímac and Andahuaylas, making a cash flow and finding the Net Present Value and the internal rate of return, because it will be conducted by a private administration. The implementation of the facilities in the initial investment will be financed by the state, however, the return on investment will be gradual in fixed installments without interest, for ten years.

During the year 2018, 500,000 trips were made for internal tourism to the Apurímac region, which represents 1.1% of the total trips nationwide. This percentage fluctuates between a dispersion of 0.10% per year and this is due to the fact that Apurímac, its activities and tourist products are few developed in several provinces with the exception of the regional capital Abancay that is sustained in products of cultural manifestations.

In 2018, according to the statistic by MINCETUR, 36,000 foreigners arrived in the Apurímac region in 2018, present a project trend of increase to 20% for 2019. At the national level, 525,547 national visitors arrived, which consolidated the internal flows, with high and strong frequency coming from the cities of Cusco, metropolitan Lima and Callao, Ayacucho, Arequipa, Puno and Ica. So the tourist demand towards the resources, activities and products contained in the Apurímac region, is the market of internal visitors, followed by foreign tourists. The average expense of a visitor is s/. 421.00 soles.

In 2019, according to the statistical data of Tourism in, 92% of trips made of Peru were for internal tourism, in the amount of 48.6 million national trips for internal tourism whose characteristics are: only Peruvians, all reasons for travel, all socioeconomic level, all ages, the reasons for residence and paid work are excluded. Vacation tourism represents 29.4% of trips within the country.

The average spending of the vacationer for the year 2019 was s/. 476.00 soles. The reason for the trips is focused on resting or relaxing 33%, going out with the family 27%, and discovering new places 20%. Then the attention on what aspects or attributes influenced to decide to travel to the interior of the country, are landscape and nature 53%, variety of tourist attractions 31%, and the economy for services 27%. After which medium influenced motivation and making the decision to travel, it was due to the comments and experiences of relatives 44%, due to the internet service pages, app 25% and due to television programs and reports 14%, for this reason there is a strong planning that reaches 82%.

The decision to travel, biased towards proactivity because 60% make the maximum decision up to two weeks, therefore they seek little information that agrees with the above, and represents 73%. The most used transport is the bus, reaching 60%, second plane with 15% and the third that combines private mobility and own mobility 23%. The issuing cities to Apurímac are: Lima, Cusco, Ica, Ayacucho, Puno.

It should be noted that the growth rate towards Apurímac reaches 2% per year, however, during the pandemic it fell to a negative rate of 12% for this reason, for the projection, data will be taken from the years 2018 and 2019,

and because the tourism sector is in recovery in the years 2021 and 2022. Given the data described, we will take a base demand for the year 2018 for Apurímac of 36,000 arrivals, we approximate with the rate of 20% of Apurímac arrivals and 10% for the city of Andahuaylas, then the arrivals to Apurímac exceed 43,000 arrivals in 2019, and to the city of Andahuaylas, 4,200 arrivals.

The demand projection is taken as 15% of visitors to the city of Andahuaylas, which for the three years are 630 with a subsequent growth of 20% per year for a range of three years and the cost per trip for 421.00 soles, we only take the 20% that reaches 84.00 soles.

The organization strategy of the tour operators and plan for the use of their own activities that rely on the tourist resource.

The strategy of organization and use of the administration by sections by an association of community tour operators in the ecotourism microcorridor is necessary, because it will contribute to improving living conditions in direct relationships with the community members, followed, at the same time, by maintenance and security in the circuits and internal trails that each section contains when visitors and tourists move to visit, admire, rest on the diversity that surrounds it. The local municipality helps to generate road infrastructure conditions and internal trails, conditioning in the safety of natural resources, because it will implement the entry of the tourist ticket.

Regarding signage, there is a preliminary sketch, from where and to what place should be signposted for the location of rest infrastructure, restrooms, camp, parking area and campsite, approved climbing area, hook fishing area, risk due to gorge or rock with a pronounced slope, among others.

In addition, entry-exit booths will be located at a maximum of four points, which will serve as control, accompanied by a shelter or interpretation center, preferably at the beginning of each micro basin. Regarding the materials of the area, the species ichu, puna scrub, was identified by frequent quantity, in addition to red clay, flagstone, which will serve as input for the lifting of rest support infrastructure.

Tabla 3. Cash flow y VAN

Ítem - anual	1	2	3	4	5	6	7	8	9	10
Inversión	12000	12000	12000	12000	12000	12000	12000	12000	12000	12000
Contrapartida comunidad	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
Total inversión	9000	9000	9000	9000	9000	9000	9000	9000	9000	9000
Mantenimiento	10000	10000	10000	12000	12000	12000	15000	15000	15000	15000
Seguridad	8000	8000	8000	11000	11000	11000	14000	14000	14000	14000
Personal	10000	10000	10000	12000	12000	12000	14000	14000	14000	14000
Total inversión y costos	37000	37000	37000	44000	44000	44000	52000	52000	52000	52000
Visitantes * precio 84.00	630	630	630	740	740	740	900	900	900	900
Ingresos por visitantes	52920	52920	52920	62160	62160	62160	75600	75600	75600	75600
Flujo de diferencia	15920	15920	15920	18160	18160	18160	23600	23600	23600	23600
Valor actual neto	S/72,321.52		a una tasa COK del 20%			Datos estimados anuales				

Source: self made, yer 2021.

CONCLUSIONS

There is viability to condition the surface of the puna, located between 3850 to 4600 meters above sea level, where the lakes or water surfaces are concentrated, they form three different, continuous circuits that allow observing, resting, enjoying the landscape, the sections have an intensity walking average, whose fatigue is pronounced when it exceeds from 5 kgr above the average height, in addition, complementary services such as herding, food, ritual staging and dances can be offered.

The construction of infrastructure, with materials from the area, is for leisure or rest, hygiene services in the sections, whose construction does not alter the landscape. The first two sections or internal circuits allow the transfer on foot, by horse or vehicle; the third section is extremely difficult for transportation by vehicle; the activities that can be developed are: hiking, trekking, camping, mountaineering, fishing in a fish farm.

The price of 84 pens (soles) will allow the provision of a complementary minimum services package, which contains: guidance, security, entrance ticket, food. It is crucial that the administration by sections be exercised by the association of community tour operators, who will guarantee the maintenance of the internal circuits, the infrastructure, and the offer of other complementary services. The project is profitable, at an opportunity cost rate of 20%, in ten years, it yields a positive result of s/. 72,351.00 penny (soles)

ACKNOWLEDGEMENTS

To the presidents and directives of the peasant organizations that allowed the development of the study: Lliupapuquio, Huancabamba-Checche-Huaraccopata and Tintay, Andahuaylas province, Apurímac region, Peru.

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Exploring consumer behavior through user-generated content on TripAdvisor. The case of Holguin destination

Explorando el comportamiento del consumidor a través del contenido generado por el usuario en TripAdvisor. El caso del destino Holguín

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Received: 2022-11-15

Accepted for publication: 2022-11-30

Published: 2022-12-31

ABSTRACT

The present study explores consumer behavior of tourists through user-generated content by presenting a method that utilizes online reviews and text processing techniques in analyzing behavior patterns. The current study examined 7,856 travel reviews from TripAdvisor written by international tourists visiting Holguin (Cuba) destination. This method includes the overall process of converting raw data into useful information, which comprises selection, pre-processing, data mining and interpretation. Data are collected from online review platforms rather than from traditional databases, and the first step is data crawling. Then, unstructured review content is transformed into suitable formats for analysis. The final step is exploratory data analysis, which includes both data mining and interpretation. Findings show that the cognitive dimension of the experience predominates in consumer's behavior. The study identifies topics that could be used by destination management organizations to promote this destination and highlights the advantages of applying a data science approach.

Keywords: Consumer behaviour; User-generated content; Text mining; Sentiment analysis; Tourist destination

RESUMEN

El presente estudio analiza el comportamiento del consumidor a través del contenido generado por el usuario, al presentar un método que utiliza reseñas en línea y técnicas de procesamiento de texto para analizar patrones de comportamiento. Fueron examinados 7.856 reseñas de viajes de TripAdvisor, escritas por turistas internacionales que visitan el destino Holguín (Cuba). Los datos se recopilan de plataformas de opinión online en lugar de bases de datos tradicionales y este contenido no estructurado se transforma en formatos adecuados para el análisis exploratorio, que incluye tanto el procesamiento como la interpretación de datos. Los hallazgos muestran que la dimensión cognitiva de la experiencia predomina en el comportamiento del consumidor. El estudio identifica temas que las organizaciones de gestión de destinos podrían utilizar para promover este destino y destaca las ventajas de aplicar un enfoque de ciencia de datos.

Palabras clave: Comportamiento del consumidor; Contenido generado por el usuario; Minería de texto, Análisis de sentimiento; Destino turístico

INTRODUCTION

At present, competitive dynamics in tourism industry demands an in-depth analysis about the creation of better relationships with different marketing environments. Customers have been essential for tourism companies. However, the technology and globalization impact on tourists are not completely understood. The information technology advances and the introduction of new communication methods have caused changes in consumer behavior, who is constantly seduced by different products and companies in competitive environments (Öter, 2018).

In this sense, consumer behavior is generally focused on the activities that people do when they search, select, buy, consume and evaluate products, services, ideas or experiences that they hope will satisfy their needs or desires. Most consumer behavior models include three stages: pre-purchase, consumption, and post-purchase. In the first stage, potential tourists recognize the need or feel some motivation to travel on their vacations, so they look for information and evaluate alternatives to plan their trip.

During the second stage, the tourists develop some events and activities they choose in the destination. The last stage includes the evaluation of tourist experience after trip, which is reflected in feelings of satisfaction or disagreement with the products or services consumed. The analysis of these sensations after purchase and tourist product consumption is important, because they can affect the future consumer behavior related to (re) choice or not the destination and in the decision-making of potential clients with whom the consumer has shared his travel experiences (W. Wang & Wang, 2018).

Cohen, Prayag, and Moital (2014) refer that tourism researchers have developed individual concepts, specific influences and particular research contexts, without considering some of these assessments in the general environment of travel or tourist behavior. Research concepts, influences and contexts can be studied for a specific stage (before the visit, during the visit and after the visit). Consumer evaluations are important for future decision-making and are essential for tourism managers. Understanding consumer behavior is the fundamental purpose of marketing management (Kotler & Keller, 2006).

Several studies carried out in recent years address different contexts such as: marketing and hotels (Fetscherin,

2019; Tan, Lee, Hew, Ooi, & Wong, 2018) food and beverage process (Shin, Im, Jung, & Severt, 2018; Tsai & Wang, 2017); tourism and travel (Guo, Barnes, & Jia, 2017; Huang & Lu, 2017) and tourist destinations (Díaz-Meneses, 2019; Jiménez-Barreto, Rubio, & Campo, 2020; Pestana, Parreira, & Moutinho, 2020). These studies about consumer behavior in tourist destinations focus mainly on issues such as brand authenticity, satisfaction, emotion and motivation as key factors for choosing a destination and market segmentation strategies. In addition, these papers refer perspectives such as the impact of the experience quality in service and creation of destination image, the influence of the millennial consumer brand perception value in the destination loyalty, the effect of the cultural intelligence of the tourist in his evaluation of the destination and the new tendencies in the search for information and its influence on the loyalty towards the destinations. However, the study of post-consumer behavior in destinations, based on the integration of its components, is a topic that is rarely developed.

On the other hand, companies, which traditionally learned about customers' needs, preferences, consumption habits, and other details by applying market research such as surveys, are now learning about customers in new ways (Couture, Arcand, Senecal, & Ouellet, 2015). These transformations have produced a change in the company's marketing strategies and business administration (A. Serra Cantallops & Salvi, 2014), especially on the tourism industry, where it is being used, increasingly, for marketing studies and decision-making.

User Generated Content (UGC) is a new source of data generated by potential or actual consumers via the internet. It can be found on the web in different ways such as text (discussion forums, blogs, etc.), photos, videos, music, audios and other ways that gives users the opportunity to create content, interact with each other and share. This information exchange contains knowledge, user experiences, as well as opinions about a product, a service or an experience and it is considered one of the largest sources of big data in this industry (Oum & Han, 2011).

Also, tourists share their travel experiences through important online platforms in the industry such as TripAdvisor (Guo et al., 2017; Vu, Li, Law, & Zhang, 2019). Online travel opinions usually contain opinions of hotels, res-

taurants and attractions (Fazzolari & Petrocchi, 2018) that are fundamental elements that customers consult before planning their trips and booking tourist destinations (Xiang, Schwartz, Gerdes, & Uysal, 2014). These opinions are published by consumers who have bought and used a product or service, including the consumer's own experiences during consumption, as well as evaluations of the product used. They are considered a specific example of e-WOM (electronic word of mouth) and it is important for customers and brands because the influence on the purchase intention of other consumers. This practice is an essential source of information for post-consumer behavior studies today.

Pantano, Priporas, and Stylos (2017) state that "while many studies have investigated the effect of online opinions on tourist's decisions, none have directly investigated the extent to which open data analyzes can favor the tourist response to a certain destination". In addition, (Antonio, Correia, & Perdigão Ribeiro, 2020) refer that a major challenge in tourist destination management is how to track the behaviour of tourists. Destination managers need to know the details of specific locations visited by tourists, what attracts tourists at each location, personal reflections on tourists' experiences and future travel behavioural intentions. In general, most current approaches are unable to address these issues in a decision-centric, integrated and comprehensive manner. Most of the existing methods for analysing social media data are focused on finding answers to specific questions that are predefined in their studies and not on developing a general understanding of tourists' movement, interests and experiences.

The proposed study goes beyond previous studies in the use of a methodology to develop and evaluate a new method of analysis based on big data with significant content focused on tourism. The method integrates techniques to identify patterns of consumer behavior in a tourist destination, taking into account the main components of the destination. This document specifies the details of the proposal that is of value for the strategic planning of destination management and as a tool to support operational decision-making. The objectives are to present a general framework to analyze consumer behavior in a tourist destination through the processing of user-generated content and to demonstrate the effectiveness of the proposed method through a case study of Holguin tourism destination.

In this article, consumer post-consumption behavior is used to refer to tourists' evaluations of a destination's tourist attractions, accommodations and gastronomic activities. Subjective opinions refer to the sentiments (positive, negative) that tourists expressed in the review comments about their experience at the visited destinations. Holguin destination was selected for the case study because it is a popular destination in Cuba. It is the third most important tourist destination in the country and also has one of the largest tourism projections in the Caribbean.

The analysis of the case study results, which are based on approximately 8,000 reviews posted by international tourists about attractions, hotels and restaurants, can provide insights into the general behaviors and perceptions of tourists. The proposed method can help researchers and tourism practitioners gain comprehensive insights into the consumer behavior by utilizing online travel reviews as alternative data sources to traditional surveys and questionnaires approaches.

The rest of the article is organized as follows. The second section provides a review of the literature on the consumer behavior and an overview of consumer behavior studies in the context of tourist destination. Limitations of the existing studies are also highlighted. The third section introduces the method used for extracting and processing online travel reviews. The fourth section presents the results of a case study on international tourists visiting Holguin and an analysis thereof, followed by a discussion of the practical implications of the research outcomes. The article includes the details of study limitations and identification of avenues for further research.

METHODOLOGY

This section presents the method of exploring consumer behavior based on user-generated content. The use of a mixed methods approach from Data Science, especially Text Mining, Data Mining, and Machine learning, also makes it possible for less biased and more consistent analysis, uncovering unknown patterns and trends. While the algorithms employ the same criteria in all analyzed texts, a human analyst can hardly maintain the same standards and objectives over time (Antonio et al., 2020).

This method includes the overall process of converting raw data into useful information, which comprises selection,

pre-processing, data mining and interpretation. In this case, data are collected from online review platforms rather than from traditional databases, and the first step is data crawling. Then, unstructured review content and metadata are transformed into suitable formats for analysis. The final step is exploratory data analysis, which includes both data mining and interpretation. A series of analysis are conducted to provide comprehensive insights into consumer behavior. Figure 1 presents destination review analysis framework; the details are presented in the subsequent sections.

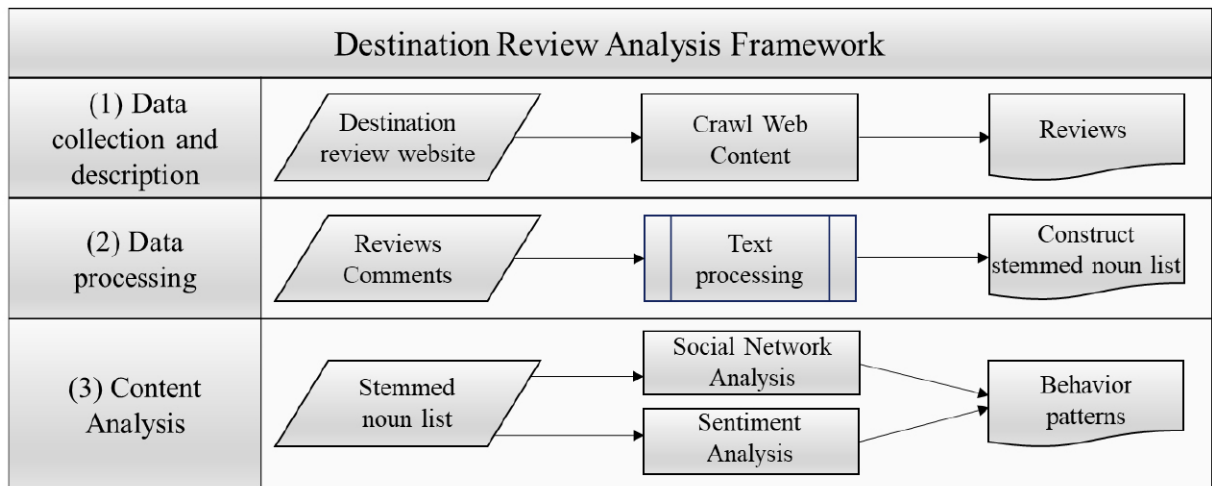
Data collection and description

The first step in the framework is to crawl the data from

the platform. Web crawler software is developed to navigate through the review websites and extract their content automatically. In this article was used TripAdvisor (www.tripadvisor.com) as a data source. TripAdvisor is a popular travel review site, which features a comprehensive database of attractions, restaurants and hotels, with millions of reviews by tourists from all over the world. Among the available data on TripAdvisor, review text is the most important for this research. Review text is the actual comment provided by reviewers after visiting destinations. It contains rich information about tourist's behavior.

Data processing

Figure 1. Destination review analysis framework



The processing of the data will allow to normalize the entries obtained from the web crawling and facilitate subsequent analysis; however, improper use can lead to the loss of important information. Among the most frequent techniques used in text mining for this type of processing are: tokenization, filtering and stemming.

Text processing is conducted as follows. Each review, is first loaded into a text tokenization algorithm, in which the stream of text is broken into words, phrases, symbols, or other meaningful elements called "tokens." A filter is applied to the tokens to normalize all letters to lower case and remove symbols and numbers. The remaining tokens are inputted into the stemming module to reduce inflected words to their stem, base, or root form.

The stemmed words then go through part of speech tagging (POST), where each word is tagged with its corresponding type, such as noun, verb, or adjective. In this framework, it was adopted the English lexicon available in GATE (<http://gate.ac.uk/>) for POST. GATE is a widely used package for text processing with a large vocabulary database (Vu et al., 2019). Then, words of noun and adjective type in a stemmed list for further processing were kept and others were discarded. The advantage of this text-processing technique is that the researcher can inspect this list and select the nouns and adjectives describing attractions, restaurants and hotels for further analysis. This technique facilitates the exploration of all possible destinations-related aspects that tourists are interested in or concerned about.

Content analysis

Analysis of the social network. In this step, the social network is built from the result of the data processing. It represents the connections between the agents that make up the systems to be studied and they have a great weight in their influence. They are useful in research to study emergent behaviors in previously created systems. In this investigation, the VosViewer-1.6.10 software was used to visualize the network.

Sentiment analysis: Analyzing tourist sentiments expressed in review comments is important for tourism managers to gain insightful understanding about the experience and subjective opinions of tourists toward the attractions, restaurant and hotels services. Platforms, such as TripAdvisor, usually provide a rating function, which reflects the overall sentiment of reviewers. However, detailed sentiment information about various aspects of destinations is unavailable. Tourists often comment on various aspects about their experience in their reviews. Relying on the overall rating of a review or predefined features is insufficient for an insightful understanding about tourist experiences.

Therefore, this research proposes to analyze the sentiment of tourists from online travel reviews at sentence level for detailed insights. First it is necessary to separate the review into sentences using sentence splitters. Review comments are broken into sentences based on a list of abbreviations or hand-coded rules to identify the end of a sentence. Examples of sentence-end indicators are full stop (.), exclamation mark (!), and question mark (?) (Vu et al., 2019). The sentiment is finally estimated in the sentences. For this analysis it was used MiningCloud Add-in for Excell v-3.5.

A sentence has three possible sentiment labels (positive, negative, and neutral). Table 1 lists examples of review sentences and their sentiment labels. S1 and S4 express positive sentiment of reviewers toward restaurant features, such as atmosphere, service, and food items. S2 express negative sentiment toward hotels and S3 is labeled as neutral because they mainly include facts rather than express any subjective opinion.

Table 1. Example of review sentences and their sentiment labels.

ID	Comment	Sentiment Label
S1	"It is a fantastic place and my favourite restaurant in Holguin"	Positive
S2	"I visited the resort during Christmas I was disappointed with room safe, air condition unit and patio door broken"	Negative
S3	"The coach taxi leave me in central drop point"	Neutral
S4	"It is a beautiful restaurant outside with music and a great lasagne"	Positive

RESULTS

Data collection and description

The data were collected from TripAdvisor with the data extraction and web crawler software described in the methodology section. In carrying out this step a specific crawling technique was used, which is applied in studies that involve web mining, because only files on a specific topic were selected, thus reducing network traffic. The data were selected using two ways: web crawling and an API access (Application Programming Interface). This data includes reviews generated by consumers on TripAdvisor. The data collection was focused on attractions, hotels and restaurants located in Holguin tourism destination, one of the most popular tourist destinations in Cuba. The software navigated through the listed attractions, hotels and restaurants in Holguin tourism destination to extract the reviews and associated information about the reviewers. The data extraction software was employed in December 2020, navigating through the web sites and collecting approximately 8,000 review comments.

The type of content that was selected for the study were opinions, of which there are a large number in the destination. Reviews written in English were chosen considering the availability of specialized tools for the analysis of natural language processing techniques. Furthermore, 70% of the total reviews were written in this language. The time frame selected for the data extraction was January 2015 until January 2020.

Once the content segment to be studied had been selected, the sample was determined. In this case, the population is taken for the analysis, as explained in García-García, Reding-Bernal, and López-Alvarenga (2013), since it fulfills the assumption of 100% representativeness and it is possible to carry out its extraction and analysis by using specialized software. It covers all the reviews, written in English, generated by customers about the most representative components of Holguin tourism destination, in the period January 2015 - January 2020.

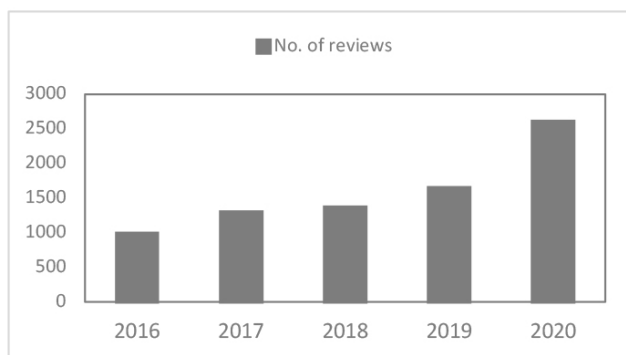
TripAdvisor is an open platform, in which any registered user can post travel reviews. Reviews posted by local residents was removed, given that international tourists are the focus of this analysis. 7,856 reviews were left, posted by international tourists for 15 attractions, 15 restaurants and five hotels, as shown in Table 2.

Table 1. Example of review sentences and their sentiment labels.

Components	No. of components	No. of reviews	No. of reviews/ No. of components
Hotels	5	6364	1272.85
Restaurants	15	447	29.82
Attractions	15	1043	69.53

Figure 2 shows the distribution of reviews by year. Most of the reviews were posted since 2018, and the number of reviews has been increasing in recent years. The fast growing number of reviews is probably due to the availability of review websites and the change in tourist behavior in information search and sharing about travel (Vu et al., 2019). Given that the data set is relatively new, the whole data set was considered in this case study.

Figure 2. Destination review analysis framework



Data processing

Tokenization: In this step, a pre-processing of the extracted text is carried out, which is developed in three moments, tokenization, filtering and stemming, using the NLTK natural language processing library, also developed in Python, which some of the languages supported by default are: English, Spanish, German or Portuguese. Then punctuation marks, special symbols and characters that do not constitute text were eliminated in the comment, so that tokenization allowed each opinion to be fragmented into a set of phrases and keywords, finally obtaining a list of tokens.

Filtering: After the tokenization process, the data was filtered based on the grammatical elements criteria, which made it possible to reduce the definitive list of tokens to nouns and adjectives, as well as to eliminate most of the stop words. Those tokens that were not significant for the future classification of the text (articles, prepositions, numerals or symbols) were removed from the previously generated list.

Stemming: Finally, the stemming process is developed. With the application of this technique, it was possible to further reduce the defined tokens, since the terms derived from the same word were associated in a single token, thus avoiding linguistic variations.

From the data processing, a set of relevant information was obtained to carry out different analysis. The definitive token list covers a total of 701,568 keywords, which are distributed by reviews of each component of the destination, 87,347 correspond to attractions, 603,984 to hotels and 10,237 to restaurants. In some cases, it was not possible to eliminate all stop words due to the existence of spelling errors in the reviews.

Content analysis

Analysis of the social network

In this step, the results of the analysis of comments are interpreted. Hence, the social network was used in order to understand the most co-occurring words, their density in relation to the number of comments of each component

and the interactions between them and thus define the main nodes.

From this information it is possible to identify that according to the perception of consumers regarding the cognitive element of the image, beach, hotel and food stand out as attractive. However, when analyzing the social network and the comments in depth, it is perceived that 67% of the comments concerning the beaches do not refer to them properly, but are allusive to the hotels surroundings, generating a wrong image of the attractiveness for those who, when reading the comments, try to get a valuation of the place.

Regarding the affective aspect, the attractions of the destination are considered pleasant places where the quality is good and the staff's assessment varies according to the site. In the case of hotels, among the main terms associated with this component that appear in the 6364 reviews, the following stand out: hotel, room, beach, food and bar. Most of the reviews address elements of the catering service and room cleaning.

Furthermore, beaches and hotels are identified as a relevant factor in the destination image. This information shows that beaches and hotels are one of the main attractions of Holguin tourism destination, given that it is what tourists highlight the most in their reviews. In the case of restaurants, its main cognitive dimensions are related to consumer's perception of food, meal, service, staff and place. Even more, its affective dimension is positively related to the staff and the place.

Overall, six nodes are identified at the destination, as shown in figure 3, which represent the global semantic network. The first cluster, "hotels and restaurants" is the most representative of the destination and its main cognitive elements are: hotel, restaurant, food, drink, staff

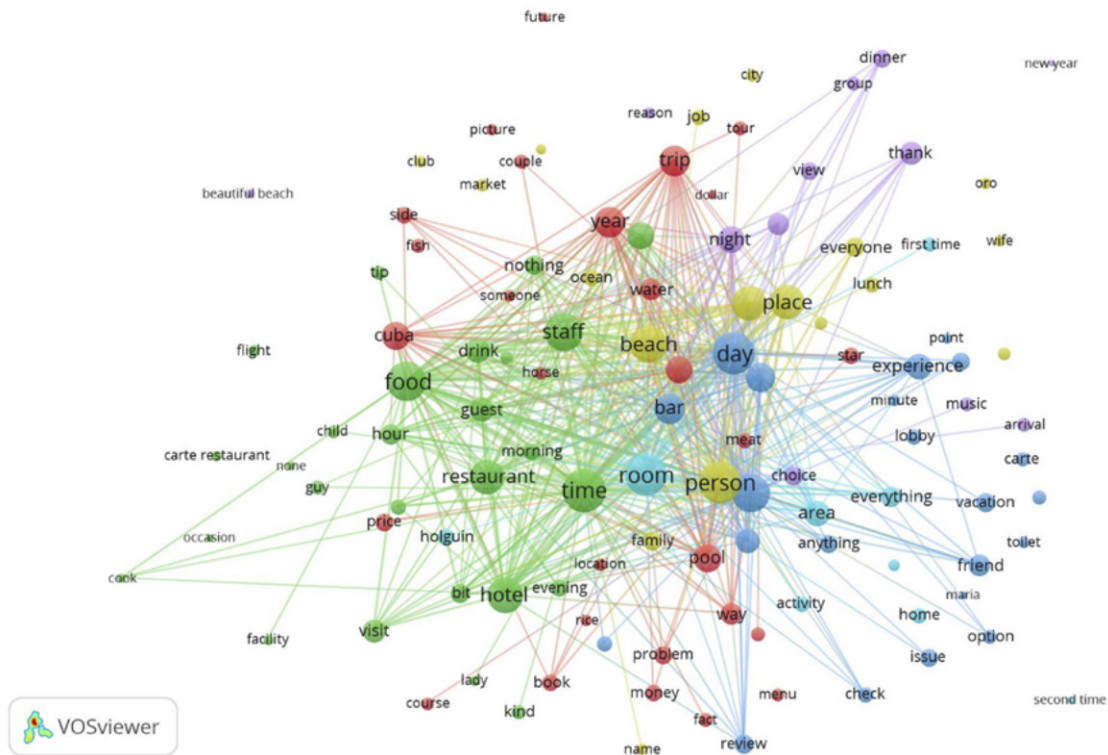
and time, which are essential factors that tourists consider during the valuation of the destination. The internal relationship established in this community is the largest in the semantic network. On the other hand, in clusters two, three and four, different variables are interrelated, the most important according to their density are experience and holiday, which are linked to hotel, restaurant, food, among others. In the case of nodes five and six, the least relevant are considered in terms of density and interrelation between variables, in them there are isolated dimensions related to attractions and emotions. It can also be concluded that the cognitive dimension of the experience prevails over the affective dimension according to its presence in the comments studied. Likewise, hotels and restaurants predominate as the most important components.

Sentiment analysis

For the sentiment analysis, two practices were combined, automatic processing, performed through the Mining Cloud Add-in for Excel v-3.5 software, and human processing to maximize the efficiency and precision of several results. The reviews were classified through the Mining Cloud according to three levels: positive, negative and neutral, and the subjectivity / objectivity of the review and its irony were also considered as another indicator.

As shown in figure 4, positive opinions predominate in the destination (73%), being the number of negative (17%) and neutral (10%) reviews the least significant. However, regarding the Agreement / Disagreement indicator, 44% of the positive comments with internal contradiction in the content stood out, due to the fact that the tourists expressed negative feelings or disagreement with some product or service of the destination in some sentence of the review.

Figure 3. Global semantic network

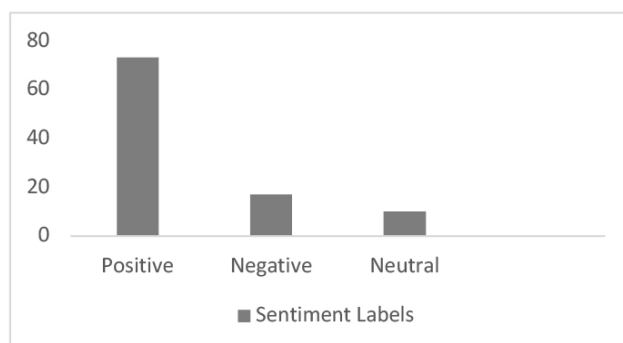


To explore into the variables that consumers associated with both polarities, an assessment of the frequency of keywords was carried out, showing that the most representative items in negative comments are room, hotel, staff, place, food, buffet and holiday. In this case, the components that are most affected are hotels and restaurants. Another element that stands out in the opinions is the making of comparisons by consumers between the times they have visited the destination, highlighting the second time with the highest number of negative comments.

DISCUSSION AND CONCLUSIONS

The attractions, hotels and restaurants are essential components of tourism, and tourism practitioners need to know the preferences of tourists to enhance their strategic planning and decision making. The behavior of tourists is complex and varied across different nationalities and cultures. Specific information about consumer behavior is also important to tourism practitioners and destination managers for devising their marketing and management plans.

Figure 4. Destination review analysis framework



Some previous studies are unable to address the needs of tourism practitioners and destination managers comprehensively because of the limitations of traditional data collection and analysis approaches. To address the existing barriers, this article presents a method that employs online travel reviews to study the behavior of tourists in a destination. The advantage of the proposed method is the capability of directly analyzing the online textual review comments to capture and explore rich information they contain.

In addition, the proposed approach provides more insights into the consumer behavior and opinions of tourists than prior works using online reviews (Miah et al., 2017) because textual reviews are analyzed and detailed information about the subjective opinions of tourists can be explored by sentiment analysis, which is effective in assessing tourist satisfaction and identifying shortcomings for future improvement.

Fundamental and important insights into tourist's behavior in terms of preferred attractions, hotels and restaurants, and their subjective opinions can be obtained efficiently. The proposed method can be applied to big data set for large-scale studies owing to the automation of data collection and utilization of software tools and APIs for data preprocessing, which allows for convenient subsequent statistical analysis. The effectiveness of the proposed method is demonstrated in a case study on Holguin tourism by using a large-scale data set.

The case study demonstrates the capability of large-sale online reviews in capturing comprehensive information about tourists' preference. Rather than using existing approaches to data collection (e.g., survey and questionnaire), this study employs online review data supported by text processing techniques. The analysis is carried out on a large-scale data set to provide a comprehensive understanding of tourists' preferences in terms hotels, attractions and restaurants. The result of this study has practical for destination management organizations, given the importance of the analysis of post consumption tourism behavior.

Findings from this study can help tourism enterprises to identify the elements affecting online tourism reviews and find correlations between them. This information extracted from the opinions is important to improve the commercial management of the destination and identify competitive advantages of the organizations (Fang, Ye, Kucukusta, & Law, 2016; Miguéis & Nóvoa, 2017). With this approach, companies can better and more accurately understand user needs and improve their quality of service.

Furthermore, text mining is a knowledge discovery process with which managers can design branded advertisements and develop themes that meet consumer demand, thus increasing their willingness to buy and providing a better experience for tourists.

The use of big data tools by tourist managers is considered a key element for destination management because the systematization and analysis of this content allows a reduction in the time, effort and money spent on image formation by of tourism managers. This image of the destination that is formed by means of the content generated by the user has a greater reach and a high speed of propagation, given the visibility and the possibility of sharing information and data should be used as a beginning point for specific policies of tourism managers, who, knowing how the image is perceived, can invest their resources in emphasizing certain segments, improving others and investing in points of the destination with unexploited tourist potentials.

In terms of technical limitations, the text-processing framework is mainly designed for reviews in English. Specific text-processing techniques and language lexicon should be further investigated to process reviews from other languages. Future studies can investigate other tools to better support sentiment analysis of review comments in other languages. It is worth mentioning that review websites, such as TripAdvisor, do provide API for direct access to their data. However, the data collected via TripAdvisor API are subject to its own terms and conditions, which may have restrictions on data analysis and result publication. Researchers and business managers are suggested to get themselves familiar with the terms and conditions before carrying out their research using TripAdvisor API, and be familiar with potential restrictions for using the alternative web crawling approach presented in this study.

The proposed method is a general analysis framework applicable to data from review websites other than TripAdvisor. Future research can consider combining review data from multiple travel platforms to obtain representative

results and analysis. Text processing tools and sentiment analysis API for languages other than English can be integrated into our framework for destination reviews written by tourists from non-English-speaking countries.

Future study can investigate other sophisticated text mining techniques to extract patterns according to specific needs from the processed data resulted from our framework. Apart from text, photos can provide insights into tourists' own experience and specific interests. Future research can focus on developing techniques for analyzing photos together with the review comments for in-depth understanding. In this work, the main focus was on tourists who traveled to a tourism destination.

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Research paper

Mapping of the scientific production on maintenance management in hotels in Scopus

Mapeo de la producción científica sobre la gestión del mantenimiento en hoteles en Scopus

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Received: 2022-09-25

Accepted for publication: 2022-10-05

Published: 2022-12-30

ABSTRACT

Hotel maintenance is one of the most important factors in providing a quality experience to guests. In this research, a bibliometric study on hotel maintenance is carried out with the objective of mapping the scientific production in this field. The database for the search was Scopus. The bibliometric method was employed using the R package Bibliometrix to calculate productivity, impact and collaboration indicators. Keyword analysis was complemented with the use of VOSviewer software and SPSS and UCINET software were used to calculate the closeness and correlation of the main approaches. A total of 310 articles published in the period 1961-2022 were found. Lai JHK and Burnett J are the most prolix authors and their articles are among the most important contributions to the field. The most studied thematic lines are Benchmarking, Energy, facilities management, Hospitality, Costs and Sustainability. The results of the study were presented for use by maintenance managers. The following were identified as future lines of research: improvements in energy management. Perform a cost-benefit analysis of redundant systems, among others.

Keywords: bibliometrix, bibliometric, hotels, maintenance management.

RESUMEN

El mantenimiento de un hotel es uno de los factores más importantes para proporcionar una experiencia de calidad a los huéspedes. En esta investigación se realiza un estudio bibliométrico sobre el mantenimiento hotelero con el objetivo de mapear la producción científica en este ámbito. La base de datos para la búsqueda fue Scopus. Fue empleado el método bibliométrico utilizando el paquete de R Bibliometrix para calcular indicadores de productividad, impacto y colaboración. El análisis de las palabras clave se complementó con el uso del software VOSviewer y además se utilizaron los softwares SPSS y UCINET para calcular la cercanía y correlación de los principales enfoques. Se encontraron un total de 310 artículos publicados en el período de 1961-2022. Lai JHK y Burnett J resultan los autores más prolíficos y sus artículos son de los de mayor contribución al campo. Las líneas temáticas más estudiadas son: la evaluación comparativa, la energía, la gestión de instalaciones, la hospitalidad, los costos y la sostenibilidad. Los resultados del estudio fueron presentados para el aprovechamiento a los gestores de mantenimiento. Como futuras líneas de investigación se identificaron: mejoras en la gestión de la energía, realizar un análisis coste-beneficio de los sistemas redundantes, entre otras.

Palabras clave: bibliometrix, bibliometría, hoteles, gestión del mantenimiento.

INTRODUCTION

Hotels are a key point in the tourism sector. Customers stay in hotels with the highest expectations about the quality of service. The hotel sector today is highly technological, so the complexity of the engineering installations, the specific characteristics and requirements of the area constitute an enormous challenge for the actions of maintenance management (Silva et al., 2022).

Hotels are dynamic, complex and costly buildings to manage and maintain, with a variety of engineering systems (Chan et al., 2003). Maintenance in hotel installations is the basis of the services that are fulfilled thanks to the engineering infrastructures to keep customers satisfied. A malfunction of these technologies can damage the image and profitability of a hotel.

Generally, maintenance works carried out in hotel facilities are building maintenance actions such as flooring, structures and furnishings, and maintenance works of the facility's services such as electrical, air conditioning, plumbing, drainage and fire protection systems (Lai & Yik, 2012a).

Arenas and Colina (2010) raise the fact that hotel managers are not familiar with the practice of maintenance management, nor with the costs involved, nor with the impact it has on the operation of the business. This leads them to rely on periodic repairs (breakdown maintenance) rather than investing in planned preventive maintenance. The need to demonstrate that maintenance management strategies have an impact on overall business performance may convince hotel managers of the need to improve maintenance management practices and allocate budgets that better serve the purpose of improving maintenance management metrics and, consequently, business performance.

There are not many researches dedicated to maintenance management in hotel installations with review approaches, bibliometric studies and mappings of the state of the art of the literature.

Some of the bibliographies addressing this field include Ghazi and Management (2016) which investigates hotel maintenance management practices and the obstacles that hinder their implementation from the point of view of maintenance managers in Egyptian 5-star hotels. Mayouf and Hisham (2019) aim to develop a hotel maintenance

cost index, compare hotel maintenance costs and the distribution of these costs among different maintenance approaches and internal and external strategies of three, four and five star hotels.

In Longart's research (2020) main objective is to provide hotel managers with an overview and understanding of hotel maintenance, the research yielded important findings, including that planned preventive maintenance was the preferred maintenance strategy.

Only one research was found that uses bibliometric methods on the study of maintenance in hotel facilities, this is that of Laguardia et al. (2021) who analyze the management of maintenance oriented to infrastructures for the displacement of the disabled in the Hotel Complex Los Cactus Tuxpan, Varadero. For the search, ScienceDirect was used as a database, the time frame is limited to documents between the years 2017 and 2021 and "desplazamientos de discapacitados" was used as the search equation, with 821 articles found.

The software used in the research of Laguardia et al. (2021) is VOSviewer, so only a keyword co-occurrence map is presented.

For this reason, the need to analyze this field of research from a bibliometric point of view is justified with the intention of mapping the scientific production on maintenance management in hotel facilities. Taking into account the above, this article uses bibliometric indicators: collaborative network analysis, citation indexes, productivity indexes, impact indexes and an analysis of the literature to identify the general state of the art in the field of maintenance management in hotels.

In the research of Sanchez et al. (2020) it is stated that bibliometrics can be defined as a bibliological research technique that studies the size, growth and distribution of the literature in a given field and also studies the social structure of the groups that produce and use it. Bibliometric scores provide quantitative and objective information on the results of the research process.

The novelty of the present research, regardless of the breadth of the time frame, is that other bibliometric indicators are analyzed, such as productivity by authors, jour-

nals and countries, impact index of authors and journals to identify high quality articles; the number of citations per author and journals, which indicates the publication of higher quality articles in the field. Collaboration indicators, to determine the exchange of experiences between authors. The relationship between author countries and keywords, which reveals the research trends and research needs of the different regions with respect to this topic.

METHODOLOGY

The bibliometric analysis method was used for this study. In order to perform an in-depth literature review and mapping, the database must be of the highest possible quality, so Scopus was selected for the search, since it is the largest database of citations and abstracts of peer-reviewed literature (Cañedo Andalia et al., 2010). The search was performed on November 28, 2022, filtering the constructs "Maintenance AND Hotel" by title, keywords and abstract, only article-type documents were collected. In order to address the largest amount of research, the time frame was not restricted. References were downloaded in .ris and .csv format.

The data were stored in the EndNote bibliographic manager with the search results. The .csv file was processed by the R package bibliometrix showing the relationship between countries, authors and keywords and the bibliometric indicators of productivity by authors, journals and countries, citation of authors, journals and documents, impact index of journals and authors, collaboration between authors and co-citation of authors and documents were determined.

In this paper, local citations are measured, local citations are measured by the number of citations a document receives from the documents included in the data analyzed (Aria & Cuccurullo, 2017), thus focusing only on citations within a discipline under study (Agbo et al., 2021).

Three different metrics are evaluated to measure the impact factors of journals and authors, the h-index, the g-index and the m-index. The h-index takes into account the number of papers from each source and the number of citations of each paper. The g-index quantifies the scientific productivity based on the publication history of the authors, the calculation of this index is similar to the h-index but more complex and it allows distinguishing between authors with similar h-index. The m-index is defined as h/n , where h is the h-index and n is the number of years elapsed since the first publication of the scientist or jour-

nal (Oyewola & Dada, 2022).

VOSviewer, SPSS and UCINET software were also used to analyze the correlation of keywords, the closeness of the main approaches and their relationship with the documents and authors.

RESULTS AND DISCUSION

This section presents the results of the study by first presenting a table with the general results, then the bibliometric indicators organized by countries, affiliations, journals, authors, documents and the relationship of keywords with authors and countries.

Table 1. Overall results

General Information	Results
MAIN INFORMATION ABOUT DATA	
Timespan	1961:2022
Sources (Journals, Books, etc)	248
Documents	310
Annual Growth Rate %	4.95
Document Average Age	13.1
Average citations per doc	12.31
References	8845
DOCUMENT CONTENTS	
Keywords Plus (ID)*	1950
Author's Keywords (DE)	944
AUTHORS	
Authors	824
Authors of single-authored docs	91
AUTHORS COLLABORATION	
Single-authored docs	103
Co-Authors per Doc	2.79
International co-authorships %	11.94

*In the author's keyword cell, they refer to a list of terms that the authors have specified to describe what their study consists of. However, the keywords plus refer to extended phrases generated by the Scopus database, which are the keywords of the publications cited in the article.

The first article published on maintenance in hotel infrastructures in the Scopus database dates back to 1961; from this year until November 2022, 310 articles have been published on the subject.

Figure 1 shows an increasing trend in the number of articles published on this subject with a coefficient of determination of 0.69, so that the trend line fits the curve well.

The annual growth rate is 4.95%, which indicates a good acceptance in practice and the need for further research in this area of knowledge, taking into account the importance of the subject within the scientific field.

Figure 1. Productivity per year

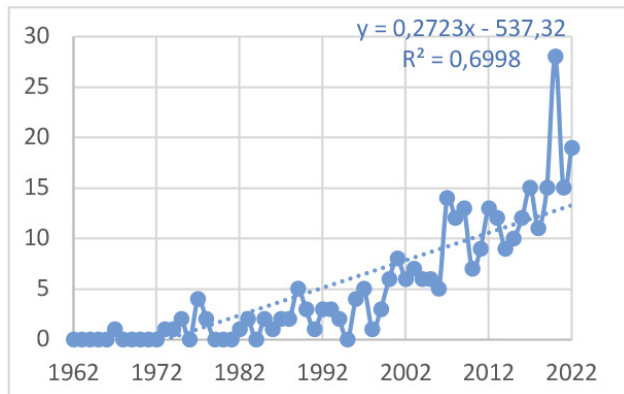


Table 2 shows the scientific productivity by country in descending order, in addition to the single country publications (SCP) and multiple country publications (MCP) indices, which refer to publications by authors from a single country and publications by authors from more than one country. The country with the highest productivity is the USA with 41 articles, 34 of them SCP and 7 MCP. It is evident that this country is a power in terms of the number of publications on the subject studied, suggesting a high applicability in this region.

Table 2. Productivity by countries

Productivity by countries				
Country	Articles	SCP	MCP	Freq
USA	41	34	7	0.132
CHINA	14	12	2	0.045
SPAIN	14	12	2	0.045
HONG KONG	12	10	2	0.039
ITALY	9	8	1	0.029
JAPAN	7	6	1	0.023
KOREA	7	6	1	0.023
CANADA	6	5	1	0.019
INDIA	6	6	0	0.019
PORTUGAL	6	4	2	0.019

Figure 2 shows the institutions with the highest productivity, the University of California with 14 publications, The Hong Kong Polytechnic University with 12 and Wannan Medical College with 10.

Figure 3 shows the most cited journals and Figure 4 shows the most productive ones. The International Journal of Hospitality Management had the highest productivity with 10 publications and it is also the one with the highest number of local citations with 111, another outstanding source is Hpac Heating, Piping, Air Conditioning with 4 publications. This data is of interest to researchers in the field, since these are journals that publish on these topics, as well as to follow new publications and keep updated on the subject.

Figure 2. Productivity by institution

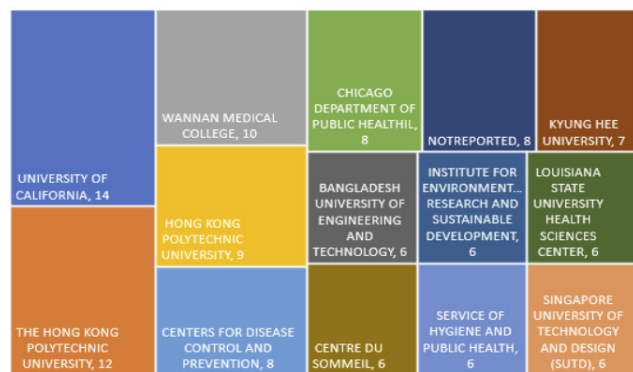


Figure 3. Local citations by Journals



The impact factor of a journal is closely linked to the number of citations. Table 3 shows the journals with the highest impact factor, International Journal of Hospitality Management is the journal with the highest h

and g Index, with 9 and 10, which means that it has at least 9 published articles with 9 citations each in this subject and with respect to the g index it corresponds

to the last position in which the number of accumulated citations is equal to or greater than the squared position.

Figure 4. Productivity per journal



Table 3. Journal Impact Index

Journals	h_index	g_index	m_index	Quartile in 2022
INTERNATIONAL JOURNAL OF HOSPITALITY MANAGEMENT	9	10	0.45	Q1
JOURNAL OF HOSPITALITY AND TOURISM RESEARCH	4	4	0.2	Q1
ENERGY CONVERSION AND MANAGEMENT	3	3	0.188	Q1
INTERNATIONAL JOURNAL OF CONTEMPORARY HOSPITALITY MANAGEMENT	3	3	0.143	Q1
JOURNAL OF QUALITY ASSURANCE IN HOSPITALITY AND TOURISM	3	3	0.2	Q2
SUSTAINABILITY (SWITZERLAND)	3	3	1	Q2
ASIA PACIFIC JOURNAL OF TOURISM RESEARCH	2	3	0.154	Q1
BUILDING SERVICES ENGINEERING RESEARCH AND TECHNOLOGY	2	2	0.077	Q2
BUILDINGS	2	2	1	Q1
CORNELL HOTEL AND RESTAURANT ADMINISTRATION QUARTERLY	2	2	0.074	Q2
DESALINATION	2	2	0.105	Q1

Figure 5 shows the most productive authors, with Lai JHK being the author with the most publications in this field with 5 articles. The analysis shows that 796 authors have only published 1 article, 26 authors published 2 articles, 3 published 3 and only 1 has published 5. Table 5 shows the productivity levels of the authors, 3.28% of the authors have published between 2 and 9 articles for a medium level of productivity. The 96.72% of the authors have a low level of productivity (1 published article), which shows that this topic has not yet been systematized by researchers, therefore, it is necessary to continue building knowledge on the subject.

Figure 5. Productivity by author

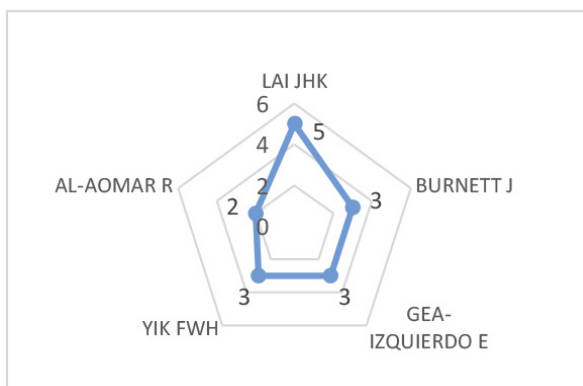


Table 4. Productivity levels

Ranking	Articles	Frequency	
		No	%
High level	≥ 10	0	0
Medium level	$\geq 2 \leq 9$	27	3.28
Low level	1	796	96.72
Total		823	100

Figure 6 shows the authors with the most local citations, with Ostrowska-Wawryniuk and Piątek ŁK being the most cited with 10 citations each.

Figure 6. Local citations by authors

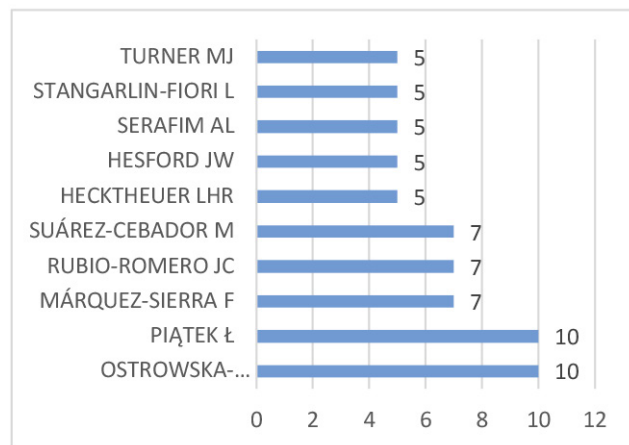
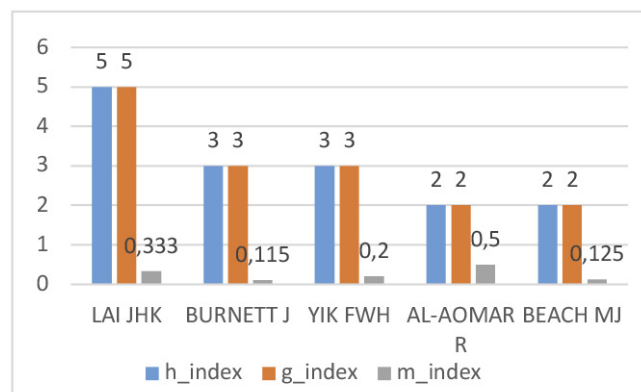


Figure 7 shows the impact factor by authors ("h", "g" and "m" indexes), Lai JHK, Burnett JY and YIK FWH are the authors with the highest h index so they have received the most citations, suggesting that they have the highest impact in the field of maintenance management in hotel infrastructure.

Figure 7. Impact index by authors



According to Song et al. (2019) user social networks, within a research topic, denotes the relationship between two or more authors, countries, or institutions with respect to collaboration. The relationships are shown in a network in

which the nodes represent authors and the links connecting the nodes represent the relationships. Figure 8 shows the map of the collaboration network between authors, the names of the authors belong to a circle, the larger the circle, the larger the collaboration network. Authors such as Lai JHK, Burnett J, Rachina SA have a well-defined collaboration network. The co-citation network of authors is shown in Figure 9, where 2 large groups are evident where the most central authors are Lee and Wang.

Figure 8. Collaboration between authors

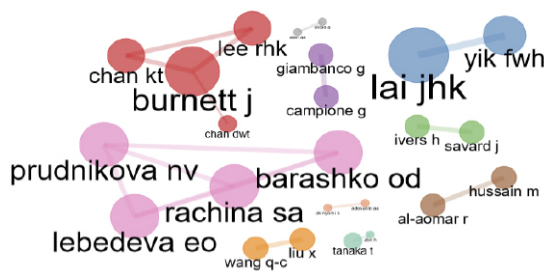
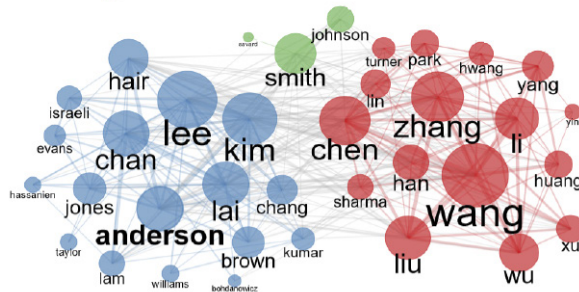
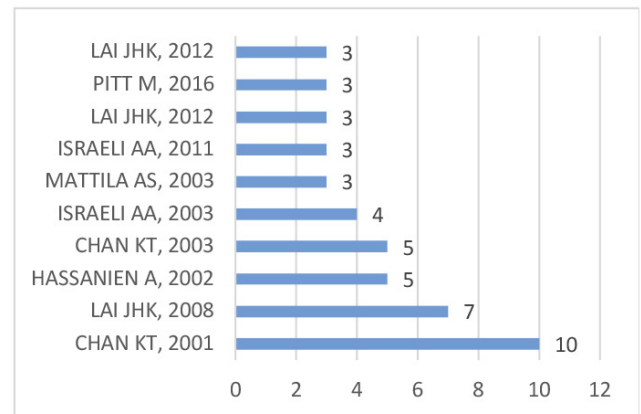


Figure 9. Co-citation between authors



Generally, the number of times an article is cited indicates the impact and quality of the article within the field of research. Figure 10 shows the articles with the most local citations. The article with the most local citations is written by Chan et al. (2001) with 10 citations, which addresses the practices, workload and resources required to maintain engineering systems and buildings. It examines internal and external maintenance, repair and modernization work. They describe the most common failure modes and incidence rates. Establish performance indicators to measure the effectiveness of maintenance of hospitality engineering systems.

Figure 10. Local Citations per documents



The total number of citations in the literature reflects the knowledge base of a discipline or research field (Chen, 2006). By analyzing the co-citation of articles, the knowledge bases of research fields can be determined. In Figure 11, the network, the size of the node represents the frequency with which the paper is cited, the larger the node the higher the citation frequency of the article. The most central nodes with the highest citation frequency represent important lines of research for the construction of knowledge in the scientific field.

Figure 11. Document co-citation

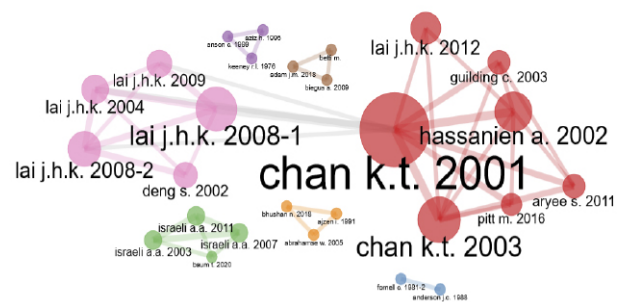
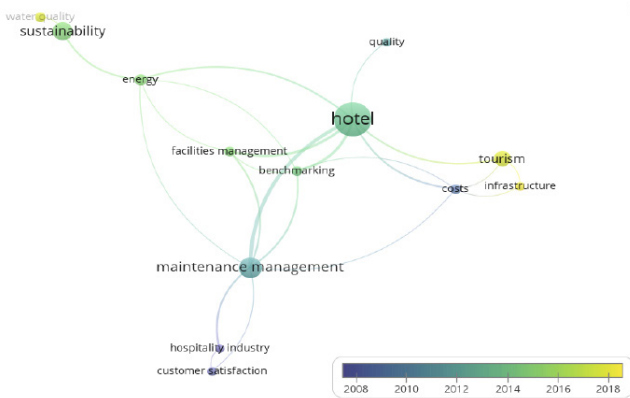


Figure 12 shows the co-citation network of the documents. Two large groups are shown where the most central documents are Maintenance performance: A case study of hospitality engineering systems by authors Chan et al. (2001) already mentioned as the document with the highest number of local citations and the article Benchmarking operation and maintenance costs of luxury hotels by Lai and Yik (2008) where a comparative study of ten

luxury hotels was conducted to identify the importance and performance of various elements of operation and maintenance (O&M) costs. Data and characteristics of the hotels were collected such as their maintenance and works expenditures, in-house labor and payrolls, contract maintenance costs, and utility costs and consumptions. It was shown that energy cost dominates (O&M) expenses. The keyword co-occurrence analysis analyzes the degree of connection between the terms with the highest occurrence. Keywords represent the core and essence of the article. Analyzing the co-occurrence of keywords specified by the authors represents an extremely useful tool to identify the evolution, direction and development of the research field (Shi, 2021).

Figure 12 shows the keyword co-occurrence network, processed in the VOSviewer software. The thicker and closer curves indicate a strong relationship between the terms, the size of the nodes indicates the number of terms with which it is correlated. For the analysis of the keywords of the researches dealing with maintenance management in hotel facilities, they were divided into two periods, in which certain research topics were trending.

Figure 12. Keyword co-occurrence



The first period is from 2001 one of the trends to investigate was customer satisfaction addressed by authors such as Hira et al. (2007), Bang and Kim (2013), Srilakshmi and Dadhabai (2018) and Meng and Gao (2019); hospitality Industry is another topic addressed by authors such as Chan et al. (2001), Lockyer (2002), McPhee (2006), Issac and Mani (2017); quality, studied by Calveras (2003), Ce-

sarotti and Spada (2009), Ferrer (2004) and Kim and Han (2020); costs studied by Ihsan and Alshibani (2018), Lai (2016) and Lai and Yik (2008).

The second stage starts from 2012 and the topics that tend to be investigated are benchmarking, addressed by Lai and Yik (2008), Lai and Yik (2012b), Lai and Yik (2012a) and Lai (2016); facilities management is another trend of this period, studied by Hassanien and Losekoot (2002), Lai and Yik (2012b), Longart (2020) and Priyangika et al. (2020). Energy, addressed by Chan et al. (2003), Lai (2016), Orynych and Tucki (2021); sustainability is another current trend, this has been investigated by authors such as Hus-sain et al. (2019), Ragodoo (2011) And water quality studied by Toyosada et al. (2017) and Van Hulle et al. (2012).

Figure 13 shows the relationship between countries, authors and keywords or their specific area of interest in the field. The left column shows the countries, the middle column shows the names of authors contributing from those countries, and the right column shows the keywords most used by the authors. Higher boxes indicate higher counts, so, in terms of countries, Hong Kong has the highest number of authors, then USA and third Italy.

Figure 13. Relationship between countries, authors and keywords

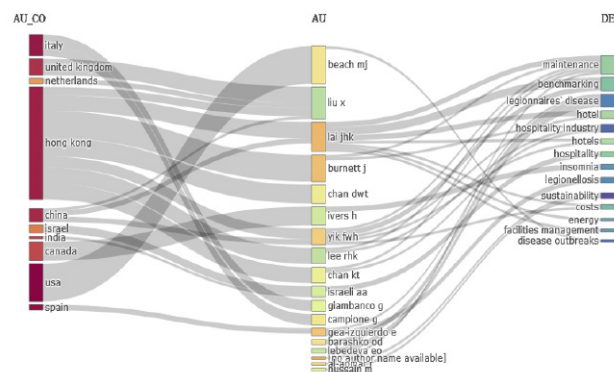


Figure 14 shows the degree of intermediation between the variables, in which the nodes with more input arcs represent a greater combination with the other variables and the colors represent the intermediation clusters. In this case, it can be seen that the nodes facilities management and benchmarking are the most integrated, not counting hotel and maintenance, which are the common denominator of this research.

Figure 14. Degree of intermediation between variables

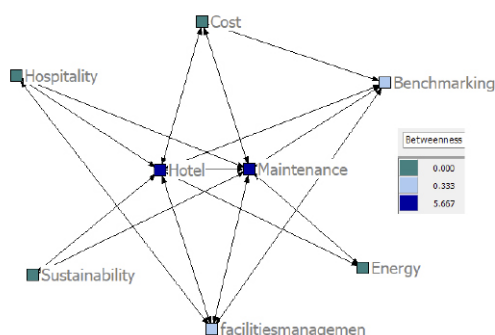
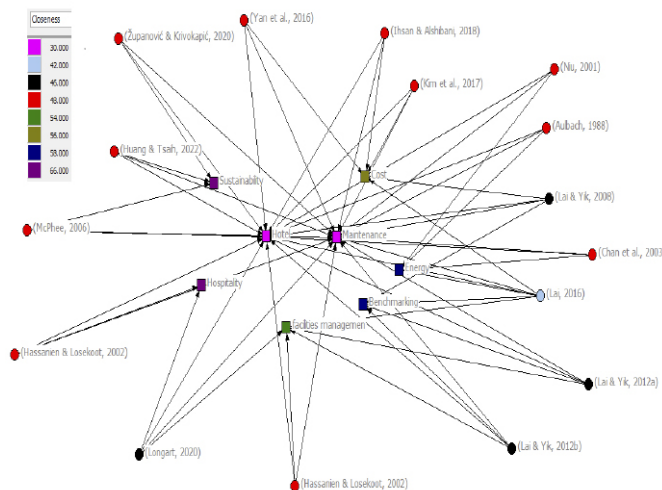


Figure 15 shows the correlation and closeness between variables and authors, being the authors the round figure nodes and the variables the square figure nodes, the closeness is represented by clusters and the variables treated by the different authors in the field are also represented. The variables most addressed by the authors other than maintenance in hotel facilities are facilities management and costs, with five occurrences, and then followed by benchmarking and energy. The author who addresses the most variables is Lai (2016).

Figure 15. Correlation and closeness between variables and authors



CONCLUSIONS

This article carried out a mapping of the scientific literature in Scopus in the field of hotel infrastructure maintenance from a bibliometric perspective. The R package

Bibliometrix and the software VOSviewer, SPSS and UCINET were used for this purpose. A series of bibliometric indicators were analyzed. Research trends were determined by analyzing the literature. The study provides useful information for academics, researchers and maintenance workers. The analysis of the bibliometric indicators and that of the articles led to the following conclusions:

The production per year indicates an increase in the interest of research development in this field. This is due to the exponential growth explained by Price's Law. This subject has been treated by many authors with different approaches, but the main trends and lines are: benchmarking, energy, facilities management, hospitality, costs and sustainability.

From the point of view of productivity, the USA, China and Spain have the highest number of publications. Among the most productive universities, the University of California and The Hong Kong Polytechnic University stand out. Therefore, a high applicability of the subject in these regions and entities can be inferred. This information may be of interest to researchers in terms of linking with these universities for collaboration, scholarship opportunities and project applications.

The sources that publish the most articles in this field are the International Journal of Hospitality Management, Hpac Heating, Piping, Air Conditioning, Journal of Hospitality and Tourism Research and Sustainability (Switzerland). These are journals that publish articles related to the topic, and it is recommended that researchers consult them for future publications, as well as to follow up on the topic and systematize it.

Although the same authors do not stand out in all the impact indexes, Lai JHK has been identified as the authors with the greatest impact on the field, taking into account productivity. By number of local citations: Ostrowska-Wawryniuk K and Piątek Ł. By highest "h", "g" and "m" indices: Lai JHK, Burnett J and Yik FWH. The co-citation analysis of papers reveals that in this field the knowledge bases are structured by authors such as: Chan et al. (2001) and Lai and Yik (2008).

Taking into account the above indicators, the most relevant authors are Lai JHK and Burnett J. The identification of the documents with the most local citations, co-cita-

tion and contributions serve as a theoretical reference framework for future research. Another aspect to take into account is that some variables that tend to be used in this type of studies are: benchmarking, energy, facilities management, hospitality, costs and sustainability. It is therefore recommended that future research should focus on or be based on these criteria. It was determined that the subject has not been systematized in its entirety, since the levels of productivity by authors are mostly intermediate and low, so this is a subject where there are still gaps that new research can fill through the construction of knowledge and systematization.

There are many areas for further research, as this is an area that has been insufficiently studied, and so these are proposed as future lines of research for researchers studying the subject:

The need to identify the factors that influence the hotel's decision on the appropriate mix of maintenance methods and maintenance outsourcing. Future research should identify and examine the knowledge and training required for hotel staff in maintenance management.

It is necessary to investigate the relationship between levels of maintenance management practices and hotel size, star category, brand and nationality. Specific policies and actions need to be implemented to maintain facilities, reduce energy waste and conserve these scarce resources. Future research in this area should examine energy management improvements in the hotel industries, as high volumes of energy consumption present the potential for significant cost benefits through energy management.

Perform a cost-benefit analysis of redundant systems. Investigate the culture and perception of the maintenance function by the General Manager, functional managers and staff of other departments within the hotel. It is necessary to investigate how the quality, age and occupancy rate of the hotels may affect the operating and maintenance costs of the facilities.

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Perspectives on short break destinations and their contribution to local-regional economic development: a literature review

Perspectivas de los destinos turísticos de corta duración y su contribución al desarrollo económico local-regional: una revisión de la literatura

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Received: 2022-10-13

Accepted for publication: 2022-11-15

Published: 2022-12-31

ABSTRACT

Globalization and changing lifestyles are generating new forms of tourism, including visits to short break destinations. The objective of this study is to propose a definition of short break destinations and to present the dimensions of the attractiveness of tourist destinations. The methodology consisted of reviewing the literature of 64 academic publications. The result shows the determinants that should be considered in the definition of short break destination and the following dimension are proposed: 1) natural resources, 2) cultural and historical resources, 3) social factors, 4) tourist services and 5) infrastructure.

Keywords: short break, city break, tourist destinations, dimensions of a tourist destination.

RESUMEN

La globalización y los cambios en los estilos de vida están generando nuevas formas de turismo, entre las que se encuentran las visitas a destinos de corta estadía. El objetivo de este estudio es proponer una definición de los destinos de corta estadía y presentar las dimensiones del atractivo de los destinos turísticos. La metodología consistió en la revisión de literatura de 64 publicaciones académicas. Los resultados muestran los determinantes que se deben considerar en la definición del destino de corta estadía y se proponen las siguientes dimensiones: 1) recursos naturales, 2) recursos culturales e históricos, 3) factores sociales, 4) servicios turísticos y 5) infraestructura.

Palabras clave: corta estadía, escapada urbana, destinos turísticos, dimensiones de un destino turístico.

INTRODUCTION

In the current tourism context, evidence suggests a progressive reduction in the length of stay at tourist destinations (Alegre & Pou, 2006; Moll-de-Alba, Pratts, & Coromina, 2017; Williams & Shaw, 2009), and, based on this, the concepts of “short break” and “city break” are used for short trips. Authors like Davis (1990); Murphy, Niininen & Sanders (2010); Sharma (2010); Dunne, Flanagan & Buckley (2007); and Moll-de-Alba et al. (2017) indicate that a consensus has not been reached regarding the definition of short breaks or of city breaks; current definitions place these two types of trips within a range of stays varying from 1 to 6 nights. This difference in definitions presents difficulties for strategically planning the development of these destinations.

Murphy et al. (2010) and Enne & Schofield (2011) mention that short breaks have become increasingly and significantly more common in recent years, and it is hoped that this trend will continue inasmuch as people select this type of vacation to closer destinations, in part because tourists will probably spend proportionally more on this market segment than on other tourism products (Schmidhauser, 1992). However, few studies have been carried out regarding the length of these trips (Tsiotsou & Vasioti, 2006; Yang & Zhang, 2015).

Trip length is one of the most important factors in order to anticipate levels of consumption and income generation for certain tourist destinations (Yang & Zhang, 2015).

Short breaks are displacing long breaks, and this provides opportunities for new tourism products, mainly for young and middle-aged people (18-45 years of age) who wish to get away for a few days (from 1 to 6 days) to a close regional or local destination, taking advantage of the flexibility of their vacation time or of public holidays. As Mazor-Tregerman, Mansfeld and Elyada (2015) point out, knowing the consumer of the tourism products allows the tourism industry to obtain deep knowledge of their tourism-related needs and desire

in order to create tourism products adapted to them, specifically.

Countries must adjust to the trends in what travelers are looking for, developing short break options that characterize each region or local place in order to attract visitors, with enough services to be able to prepare competitive

offerings, in addition to infrastructure that allows the visitors to arrive at the destination.

Short breaks can provide health benefits to travelers, emphasizing even more the relevance of the subject being addressed. As Packer (2020) highlights, short breaks and vacations help people recover from the stresses and strains of everyday life and work. Beiloley (1991) specifies that some of the reasons for taking short breaks are ‘to get away from it all’, ‘opportunity to relax’, and ‘needed a break’. There is no doubt that taking short breaks helps restore cognitive capacity, as well as improving emotional health and well-being, that is why it is vital that the topic is further explored.

Notwithstanding the substantial role virtual reality had in coping with the Covid-19 pandemic - enabling individuals to engage and transition towards a “new normal”, it is hard to neglect how Coronavirus changed and reshaped the tourism sector. Reitano, et al. (2021) reveal that after the pandemic, tourists are choosing domestic tourism, characterized by “small and short-lived trips”. In line with what Reitano et al, Choi, et al. (2020) suggest, tourists have started to engage in “untact” travel activities, with short trips like spending time in nature, enjoying outdoor camping and road trips, or travelling alone have been particularly predominant.

This article addresses the literature on short breaks and the dimensions of attractiveness of a tourist destination and discusses the characteristics of this literature in order to propose a definition of a “short break.” For the literature review presented, the following criteria of analysis were established: first, the research had to be published in an academic article or book. Second, the terms used in the search were the following: “length of stay,” “short break,” “city break,” “short haul,” “short holidays,” “urban destination,” “destination,” “attractiveness,” and “tourism products;” these terms had to be present in the title, the abstract, or the key words of the document. Third, the selected sector those sources treated was the tourism sector.

In this context, the purpose of this research consists of reviewing the academic literature published between 1974 and 2021 on short breaks and the attractiveness of tourist destinations, with the intention of proposing a definition of “short break destinations” and, in terms of theory, proposing the dimensions of the attractiveness of the tourist destination so that the actors involved in the development

of a regional or local destination can provide competitive commercial offerings.

LITERATURE REVIEW

Short break: definition and determinants

The duration of a trip is generally defined as the amount of time that travelers spend at a given destination, and it is frequently measured as the number of days or nights that tourists stay overnight at a certain place (Uysal, McDonald, & O'Leary, 1988). It is important in tourism management as a measure of tourism demand (Barros & Machado, 2010; Herington, Merrilees, & Wilkins, 2013; Martinez-García & Raya, 2008; Moll-de-Alba et al., 2017; Neal, 2005; Yang, 2017; Yang & Zhang, 2015). It is important to consider when engaging in market segmentation (Gomes de Menezes, Moniz, & Cabral Vieira, 2008; Moll-de-Alba et al., 2017), when researching sustainable tourism (Molina Collado, 2007; Saarinen, 2006), and when analyzing the demand for a particular destination (Yang & Zhang, 2015). Moreover, it is a reliable indicator for the level of consumption and income generation of a tourist destination (Alegre & Pou, 2006; Yang & Zhang, 2015). Also, tourists take this factor into consideration when they choose their vacations (Alegre & Pou, 2006). Finally, it is specific to each tourist destination (Alegre, Mateo, & Pou, 2011; Barros & Machado, 2010; Lohmann, 1991).

Since 1970, short breaks have stood out as an important vacation activity in multiple global market segments, displacing long breaks (Sharma, 2019). Murphy et al. (2010) argue that short breaks are a phenomenon that is expanding on a global level due to a more complex and stressful lifestyle and also to the fact that these trips are taken in addition to the traditional annual vacation, motivated by consumers' wish to get away for a few days to a domestic or regional destination in order to relax and have fun. According to Smith (1996), short breaks are taken year round.

Davies (1990) indicates that the shortest trips will probably be the market segment with the highest expenditures in proportional terms, which makes it all the more important to design short break packages.

The number of days is a key determinant in the description of the short break stay (Sharma, 2010). However, researchers do not agree on the number of days that define a "short break". Table 1 displays what authors perceive as the number of days for a getaway to be considered a short break.

Table 1. Days that define a short break

Author(s)	Description
Tsiotsu and Vasioti (2006), Neal (2003), Gomes de Menezes et al. (2008)	1 to 6 nights.
Huybers (2003)	2 to 3 nights.
Murphy et al. (2010) Moll-de-Alba, Prats, and Coromina (2016)	1 to 4 nights.
Boerjan (1995)	Only mentions that it lasts a few days.
Edgar, Littlejohn, & Allardyce (1994)	3 nights
Davies (1990)	1 to 3 days.
Lohmann (1991)	Up to 4 days.
Pike (2002)	1 to 5 nights.
Sharma (2010)	3 to 5 nights.
Schmidhauser (1992)	1 to 4 nights.
Herington et al. (2013)	1 to 3 nights.
Valls, Sureda, and Valls-Tunon (2014)	3 to 4 days.

Table 1 displays authors' suggestions in regards to the duration of short breaks, resulting in the conclusion that these trips last a maximum of 4 to 5 days.

Other determinants of short breaks include the following: a) distance (Bao & McKercher, 2008; Yang & Zhang, 2015), which is often limited to a restricted geographical region, to domestic destinations (Boerjan, 1995; Herington et al., 2013; Huybers, 2003; Lohmann, 1991; Martinez-García et al., 2008; Murphy et al., 2010; Schmidhauser, 1992), to trips of between 3 and 6 hours by car (Murphy et al., 2010), or to close places (Bao & McKercher, 2008); b) sociodemographic characteristics like age, educational level, type of education, gender, family income, and nationality (Alegre & Pou, 2006; Alegre et al., 2011; Davies, 1990; Dunne et al., 2007; Huybers, 2003; Lohmann, 1991; Martinez-García & Raya, 2008; Williams & Shaw, 2009; Yang & Zhang, 2015); and c) the attributes of the attractiveness of the destination (Barros & Machado, 2010; Gomes de Menezes et al., 2008; Herington et al., 2003; Murphy et al. 2010; Sharma, 2010; Smith, 1994).

Moreover, short breaks are carried out away from the place of residence (Murphy et al., 2010; Pike, 2002). They are not business trips (Murphy et al., 2010; Pike, 2002). They are not the travelers' main annual vacation (Downward & Lumsdon, 2003; Dunne et al., 2007; Murphy et al., 2010; Pike, 2002; Sharma, 2010; Tsiotsou & Vasioti, 2006). Tra-

velers many times have previously visited the destination (Alegre et al., 2011; Barros & Machado 2010; Kozak & Rimmington, 1998; Yang & Zhang, 2015). These trips are carried out by young and middle-aged male and female travelers, mainly between the ages of 18 and 45 (Alegre & Pou, 2006; Tsiotsou & Vasioti, 2006). A short break trip is more an impulse decision than a highly-planned one (Boerjan, 1995; Schmidhauser, 1992).

Davies (1990) indicates that it is difficult for scholars to frame a definition of “short breaks” due to the tourism industry’s inability to come to a consensus regarding the definition. There is no common definition of “short breaks,” and this causes difficulties when describing and planning this type of vacation (Moll-de-Alba et al., 2017; Murphy et al., 2010; Sharma, 2010). However, as happens with the term “city break” (Dunne et al., 2010), for which there is no commonly recognized definition, there is one definition that is used rather more frequently: that proposed by Trew and Cockerell (2002), who refer to a trip for relaxation to a city or town, without taking into consideration the number of days, that is just to the city itself; that is to say, travelers do not spend the night at any other destination during the trip. Valls et al. (2014) mention that it is a short stay of one or two days either over the weekend or during the week.

Dunne et al. (2010) indicate that the most commonly associated characteristics of city breaks are that they last between one and three nights but that this can vary according to nationality, referring to the fact that Germans tend to take longer city breaks than other Europeans and that the British tend to make shorter trips. Another characteristic is that these trips are made strictly for leisure purposes and take place in an urban environment, regardless of the length of the travelers’ stay.

Downward and Lumsdon (2003), Tsiotsou and Vasioti (2006), and Edgar et al. (1994) indicate that there is confusion regarding the term “short break” as used to refer to day trips or excursions, that is to say, visits that do not involve an overnight stay. They consider it necessary to clarify that city breaks and short breaks are different segments. Additionally, Heeley (2015) and Pearce (2015) relate both terms to a specialization in urban tourism, indicating that they are visits to cities or towns. Other authors like Martínez-García and Raya (2008) and Enne and Schofield (2011) use the terms interchangeably, considering them both to refer to a stay at a destination for fewer than four nights.

Dimensions and attributes of tourist destination attractiveness

Bigné, Sánchez, and Andreu (2000) mention that destinations are combinations of tourism products that offer an integrated experience to tourists and that a destination can be interpreted subjectively by consumers as a function of their travel itinerary, reason for visiting, educational level, and previous experience; that the destination can encompass different tourism and infrastructure resources, forming a system; and that the tourism product is a complex consumer experience that results from the process of the tourist using multiple travel services throughout the visit, like information, lodgings, and other services. Hu and Ritchie (1993) conceptualize it as a package of installations and tourist services that, the same as for any other consumer product, is composed of a series of multidimensional attributes and define it as a reflection of “feelings, beliefs, and opinions than an individual has about a destination’s perceived ability to provide satisfaction in relation to his or her special vacation needs” (p. 25). Herington et al. (2013) mention that the attractiveness of a destination is an important concept for understanding consumers’ travel motivations and their decisions for choosing a given destination. Gomes de Menezes et al. (2008) state that the dimensions and attributes of the image of a destination influence the length of stay differently for each tourist.

Gearing, Swart, and Turgut (1974) explain the dimensions that compose the attractiveness of a destination: 1) natural factors (nature and weather), 2) social factors (artistic and architectural characteristics, festivals, customs, fairs, exhibitions, tourist support services), 3) historical factors (ruins, religious sites, historical sites), 4) recreational factors and shopping facilities (sporting facilities, museums, zoos, botanical gardens, nightclubs, theaters, casinos, shops), and 5) infrastructure and lodging factors (highways, water, electricity, communication, public transport, hotels, restaurants). Lew (1990), Hu and Ritchie (1993), and Fluvíá, Rigall-I-Torrent, Espinet, Carriga, and Saló (2011) agree with the factors identified by Gearing et al., including the economic factor (price), which is the consideration of the total cost of all the experiences related to the travel destination. Kozak & Rimmington (1998) and Enne and Schofield (2011) also include this factor, specifically identifying the quality-price relation as a criterion used by tourists.

Smith (1996) indicates that tourists who visit a destination are participating in a complex consumer experience and

that the attractiveness of a destination that tourists visit for a short or long stay includes whether or not it has children's facilities, activities that can be carried out when the weather is bad, good beaches, charming countryside, peace and quiet, a "vacation" atmosphere, places to eat and drink, good shops, history, culture, and opportunities to engage in sports and hobbies. Huybers (2003a) found that a destination's level of attractiveness can be enhanced by including the following: moderate prices, moderate levels of nightlife, and a mix of cultural and natural attractions.

Mo, Howard, and Havitz (1993), in line with Gearing et al. (1974), mention that the atmosphere of the destination (social and cultural characteristics) is the most fundamental factor of importance and that services and infrastructure (transportation, food, and lodging) are secondary factors of importance.

Dunn and Iso-Ahola (1991), following Gearing et al., indicate that the destination includes the site's facilities; natural resources, like the flora and fauna; the scenery; and the weather. Also, they state that the social factors include local people's friendliness, the language spoken, and the work that they do. Another factor to consider is the surrounding political situation, which includes the political stability, foreign policy, and the required documents to enter, like visas.

Murphy, Pritchard, and Smith (2000) present a conceptual model of the destination: 1) the Destination Environment, which includes the natural surroundings (weather), political-legal factors, technological factors (communication), economic factors (prices), cultural factors (historical patrimony), and social factors (hospitality of the residents); 2) the Service Infrastructure: shopping, recreation, food, lodging, transport, travel; and 3) the Tourist Destination Experience.

Fluviá et al. (2011) mention that tourists' choice regarding where to spend their vacations does not depend wholly and exclusively on the differences in private provision of the different alternatives in their package of choice (hotels of different categories); they must also consider the characteristics and attributes of the city or region that the tourist offering is located in. They add that "setting" can be understood to mean the offering of infrastructure and public services, the degree of preservation of the environment and the landscape, and the brand image of a certain region or touristic place. They indicate that con-

sumers choose the type of product they wish to consume based on their preferences, their income, and the current market prices; the differences in the prices of the private provisions of different cities could be interpreted as differences in the provision of goods, services, infrastructure, natural capital, brand image, and other public characteristics. They explain that there are multiple attributes linked to the location that could affect the final price.

On the other hand, Yuan and McDonald (1990) and Baloglu and Uysal (1996) state that there are two types of reasons that tourists travel: 1) external (pull) factors: nightlife, outdoor activities, culture, nature, scenery, high-quality restaurants, historical places, museums and art galleries, nice weather, and a variety of excursions, and 2) internal (push) factors: tourists' desire to get away, to rest, to relax, to care for their health, to have experiences with their families, to have cultural experiences, to indulge, and to experience new and different ways of life. These reasons are related to the dimensions proposed by Gearing et al. (1974), Murphy et al. (2000), Mo et al. (1993) and Dunn & Iso-Ahola (1991), which are very important in the development of the strategy of a competitive destination, with the goal of providing a current or potential regional or local short break destination that differentiates itself from the rest and is more attractive to tourists (Murphy et al., 2010).

METHODOLOGY

After conducting a holistic review of sixty-four academic publications, as detailed in Table 2, the following criteria for analysis have been established: 1) the research had to be published in an academic journal or book; 2) the search terms were "length of stay," "short break," "city break," "short haul," "short holidays," "urban destination," "attractiveness," and "tourism products," and these terms had to be present in the title, the abstract, or the key words of the document; and 3) the selected discipline or academic area was those sources related to the tourism sector.

After the search identified the sources, their abstracts were reviewed, and the sources not fully related to the search criteria were discarded, leaving 64 studies published between the years of 1974 and 2022. The academic journals with the greatest number of sources related to the search criteria were *Annals of Tourism Research* with twelve articles, *Journal of Travel Research* with six articles, *Tourism Management* with five articles, *International Journal of Tourism Research* and *Journal of Travel & Tourism*

Marketing with four articles each, Tourism Economic, the Tourist Review and International Journal of Tourism Cities the with three articles each (table 2). Regarding the geographical scope of the studies analyzed, the results show a predominance of studies centered on tourist destinations in Europe, Asia, and Australia, only two studies from Latin America were found. The majority of the articles reviewed

were empirical studies in which the data collection method used was mainly that of questionnaires, along with some interviews and focus groups. The population studied was male and female tourists with an average age of 18 to 45 years, and the data analysis methods used were mainly cluster analysis, the nested logic model, the micro-economic model, and structural equation modeling.

Table 2. Sixty-three academic publications

Authors	Theoretical/ Empirical	Methodology Qualitative/ Quantitative/ Both	Sample Size/ Country or City	Data Collection Technique	Name del Journal
Alegre, J., & Pou, Ll. (2006)	Empirical	Quantitative	56915 tourists of Balearic Islands during the high seasons from 1993 to 2003	Tourist Expenditure Survey (TES)	Tourism Management
Alegre, J., Mateo, S., & Pou, Ll. (2011)	Empirical	Quantitative	12849 German tourists and 16313 British tourists.	Tourist Expenditure Survey (TES)	Tourism Management
Baloglu, S., & Uysal, M. (1996)	Empirical	Quantitative	1212 people.	Home Interviews that lasted 50 minutes, in western Germany.	Annals of Tourism Research
Bao, Y., & McKercher, B. (2008)	Empirical	Quantitative	Primary research: 10 (5 short haul + 5 long haul)/ Hong Kong Secondary research: 95,000 people	Secondary: Data obtained from the Visitor Profile Report 2005, that derives from face-to-face interviews	Asia Pacific journal of tourism research
Barros, C., & Machado, L. (2010)	Empirical	Quantitative	346 people / Madeira, Portugal	Questionnaires	Annals of Tourism Research
Bigné, E., Sánchez, I., & Andreu, L. (2009).	Empirical	Quantitative	400 tourists that have stayed within the last 2 years.	Personal Interviews	International Journal of Culture, Tourism and Hospitality Research
Boerjan (1995).	Empirical	Qualitative	400 Flemish holiday-makers/ Bruges, Belgium	Questionnaires	The Tourist Review
Boto-García, D., Baños-Pino, J. F., & Álvarez, A. (2019).	Empirical	Quantitative	19,111 / Asturias - Spain	Questionnaire	Journal of Travel Research
Cheung, C., Takashima, M., Choi, H., Yang, H., & Tung, V. (2021).	Empirical	Qualitative	21 / Japan	Interviews	Journal of Travel & Tourism Marketing
Choi, B., An, J., & Lee, S. (2020).	Empirical	Quantitative	-	Not used	Korea Economic Daily

Authors	Theoretical/ Empirical	Methodology Qualitative/ Quantitative/ Both	Sample Size/ Country or City	Data Collection Technique	Name del Journal
Croes, R. R. (2006).	Empirical	Quantitative	32 countries / The Caribbean	Data	Tourism Management
Davies, B. (1990).	Theoretical	Qualitative	-	Not used	International Journal of Hospitality Management
Downward, P. y Lumsdon, L. (2003)	Empirical	Quantitative	England	Self-completion questionnaire by way of accommodation providers	Tourism Economics: The Business and Finance of tourism and recreation
Dunn, S., & Iso-Ahola, S. (1991)	Empirical	Quantitative	255 / Washington DC, USA	2 page questionnaire	Annals of Tourism Research
Dunne, G., Flanagan, S., & Buckley, J. (2007)	Empirical	Quantitative	40 city break visitors/ Dublin, Ireland	In-depth interviews	Journal of Travel & Tourism Marketing
Edgar,D, Littlejhon. D and Allardyce. L (1994).	Empirical	Quantitative	20 largest short break providers / Scotland	Telephone Interviews	International Journal of Contemporary Hospitality Management
Enne D. & Schofield P. (2011)	Empirical	Mixto	10000 university students and personnel, providing 150 useful answers.	Questionnaires and inferential statistics methods.	International journal of tourism research.
Fluviá, M., Rigall-I- Torrent, R., Espinet, J., Carriga, A., & Saló, A. (2011).	Theoretical	Quantitative	-	Not used	Estudios de Economía Aplicada
Gearing CE, Swart V and Var T (1974).	Empirical	Quantitative	26 tourism experts	Survey to tourism experts where they weigh on factors that they consider important. They do not ask tourists directly.	Journal of Travel Research
Gomes de Menezes, A., Moniz, A., & Cabral Vieira, J. (2008)	Empirical	Quantitative	400 people/ Azores, Portugal	Questionnaires	Tourism Economics: The business and finance of tourism and recreation
Heeley, J. (2015).	Theoretical	Qualitative		Not used	International Journal of Tourism Cities

Authors	Theoretical/ Empirical	Methodology Qualitative/ Quantitative/ Both	Sample Size/ Country or City	Data Collection Technique	Name del Journal
Herington, C., Merrilees, B., & Wilkins, H. (2013).	Empirical	Both	200 typical tourists	Focus group and questionnaires.	Journal of Vacation Marketing
Hu, Y. & Ritchie, J. R. B. (1993)	Empirical	Quantitative	400 telephone interviews in Canada.	A telephone survey questionnaire	Journal of Travel Research
Huybers T (2003)	Empirical	Quantitative	384 / Australia	Questionnaires	International Journal of Tourism Research
Huybers T. (2003a)	Empirical	Both	575 surveyed/ 4 geographical zones near Sydney	Interviews	Tourism Economics: The business and finance of tourism and recreation
Jacobsen, J. K. S., Iversen, N. M., & Hem, L. E. (2019).	Theoretical	Quantitative	1324 / Noruega	Survey	Annals of Tourism Research
Kozak, M., & Rimington, M (1998)	Theoretical	Qualitative	-	Not used	International Journal of Contemporary Hospitality Management.
Lew AA (1987)	Theoretical	Qualitative	-	Not used	Annals of Tourism Research
Lohmann, M. (1991).	Theoretical	Both	Approximately 3,500 survey respondents per year.	Data obtained from representative surveys.	The Tourist Review
Martinez-García, E., & Raya, J. (2008)	Empirical	Quantitative	990 foreign tourists staying in Catalonia /Catalonia, Spain	Interviews	Tourism Management
Martins, M. R., da Costa, R. A., & Moreira, A. C. (2022)	Empirical	Quantitative	334 backpackers visiting Porto, Portugal	Questionnaire survey	International Journal of Tourism Research
Mazor-Tregerman, M., Mansfeld, Y., & Elyada, O. (2015)	Theoretical	Qualitative	-	Not used	Journal of Tourism and Cultural Change
Mc Kercher, B. (2017)	Theoretical	Qualitative	Hong Kong	Not used	International Journal of Tourism Research,
Mo, C., Howard, D. R., & Havitz, M. E. (1993)	Empirical	Quantitative	102-member scale verification sample.	The tourist role scale	Annals of Tourism Research
Molina Collado, A. (2007)	Theoretical	Quantitative	560 tourists / Toledo, Spain	Interviews	Revista de Análisis Turístico

Authors	Theoretical/ Empirical	Methodology Qualitative/ Quantitative/ Both	Sample Size/ Country or City	Data Collection Technique	Name del Journal
Moll de Alba J., Prats L. And Coromina L.(2016)	Theoretical	Quantitative	6,539 tourists who visit Barcelona / Barceñona, Spain	Surveys made by Turisme de Barcelona	European Journal of Tourism Research
Moll-de-Alba, J., Prats, Ll., & Coromina, Ll. (2017)	Empirical	Quantitative	10,953 surveyed tourists.	Surveys to tourists	Analysis of the profiles of tourists, both short and long duration
Murphy, P., Pritchard, M., & Smith, B. (2000)	Empirical	Quantitative	3,088 surveys.	Data from the summer and fall 1994 visitor surveys conducted by Tourism Victoria, which is the local destination association.	Tourism Management
Murphy, P., Niininen, O., & Sanders, D. (2010)	Empirical	Both	134 focus group participants and 74 interview participants / Australia	Focus Groups and Industry Interviews	CRC for Sustainable Tourism Pty-
Mussalam, G. Q., & Tajeddini, K. (2016).	Both	Both	158 / Switzerland	Questionnaires	Journal of Hospitality and Tourism Management
Neal. J.D. (2003)	Empirical	Quantitative	826 / USA	Survey	Journal of Quality Assurance in Hospitality and Tourism
Nientied, P. (2020).	Theoretical	Qualitative	Rotterdam	Not used	International Journal of Tourism Cities
Packer. (2020)	Theoretical	Qualitative	156 staff members of Australian university	Focus groups	Annals of Tourism Research Empirical Insights
Packer. (2021)	Empirical	Both	110 participants / Australia	Questionnaires	Annals of Tourism Research Empirical Insights
Park, J. Y., & Jang, S. (2018)	Empirical	Quantitative	481 / USA	Online survey	Journal of Travel Research
Pearce, D. (2015).	Theoretical	Qualitative	25 participants / New Zealand-	Interviews with practitioners	International Journal of Tourism Cities

Authors	Theoretical/ Empirical	Methodology Qualitative/ Quantitative/ Both	Sample Size/ Country or City	Data Collection Technique	Name del Journal
Pike, S. (2002).	Empirical	Qualitative	142 papers in the destination image literatura from the period 1973-2000.	Factor analysis. T-tests (21), perceptual mapping (21), analysis of means (20), cluster analysis (14), importance-performance analysis (9), repertory grid (8), mapping techniques (3), constant sum (2) and conjoint analysis (1).	Journal of Tourism Studies
Pratt, S. (2015)	Empirical	Quantitative	7 small island developing states	Data	Annals of Tourism Research
Reitano, A., Fazio, M., Schrripa Spagno, F. & Karanasios, N. (2021)	Empirical	Both	1253 individuals. Via Snowball sampling.	Questionnaires	Symphonya Emerging Issues in Management
Saarinen, J. (2006)	Theoretical	Qualitative	-	Not used	Annals of Tourism Research
Šagovnović, I., & Kovačić, S. (2020).	Empirical	Quantitative	203 domestic and international tourists of Novi Sad	Online Questionnaire	International Journal of Tourism Cities
Schmidhauser H. And Gallen St. (1992)	Theoretical	Both	-	Not used	The Tourist Review
Sharma, R. D. (2010)	Theoretical	Qualitative	11 people / Darwin, Australia	Foccus groups and Interviews	WIT Transactions on Ecology and the Environment.
Smith L (1994)	Theoretical	Qualitative	-	Not used	Annals of Tourism Research
Tsiotsu, R., & Vasioti, E. (2006)	Both	Quantitative	170 individuals who participated in a three-day trip in Greece / Hepeiros, Greece	Questionnaires	Journal of Travel & Tourism Marketing
Uysal, M. y Jurowski, C. (1994)	Empirical	Quantitative	Respondents (9,367 out of a total of 11,500 completed interviews) who were 18 years of age or older, had taken a trip (pleasure, visiting friends and relatives) in the last three years.	Satisfaction survey to tourists that visited the island in the Caribbean, in the 50s.	Annals of Tourism Research

Authors	Theoretical/ Empirical	Methodology Qualitative/ Quantitative/ Both	Sample Size/ Country or City	Data Collection Technique	Name del Journal
Uysal, M., McDonald, C. D., & O'Leary, J. T. (1988).	Empirical	Quantitative	6720 people of ages 12 years or older	Personal interviews to population from the United States.	Journal of Travel Research
Williams, A. M., & Shaw, G. (2009)	Theoretical	Qualitative	-	Not used	Land Use Policy
Valls, J. F., Sureda, J., & Valls-Tunon, G. (2014)	Empirical	Quantitative	5,942 European citizens from 7 European countries / Europe	Questionnaires	Journal of Travel & Tourism Marketing
Vu, H. Q., Luo, J. M., Li, G., & Law, R. (2020).	Both	Both	Hong Kong	Density Clustering Technique	Journal of Hospitality & Tourism Research
Yang, J. (2017)	Empirical	Quantitative	400 people/ China	Questionnaires	Advances in Social Science, Education and Humanities Research
Yang, Y., & Zhang, H. (2015)	Empirical	Quantitative	27,709 observations / Jiangsu, China	Questionnaires Data from province-wide domestic tourist survey	Tourism Analysis
Yuan, S. y Macdonald, C (1990)	Empirical	Quantitative	1500 people in Japan, France, Germany and United Kingdom	Interviews	Journal of Travel Research

CONCLUSIONS

Based on the fact that there is no consensus regarding the number of days or nights that a short break or city break entails, in many cases these concepts are used interchangeably (Enne & Schofield, 2011; Martínez-García & Raya, 2008), and there is even confusion regarding the term "short break," as it has sometimes been used to indicate day trips (Downward & Lumsdon, 2003; Tsiotsou & Vasioti, 2006). Moreover, it is important to consider the key determinants in the description of a "short break": the number of days the trip lasts, the distance, sociodemographic characteristics, the attributes of the attractiveness of the destination, etc.

Based on the literature review, the following determinants

of the "short break" concept are proposed: 1) duration of stay: 3 to 4 nights; 2) destination: mainly domestic or close places, away from the place of residence; 3) age: young and middle-aged people; 4) the fact that this is not the main annual trip; 5) the fact that it is not a business trip; and 6) the fact that it is more of an impulse decision than a planned one.

Regarding city breaks, it is proposed that they should be differentiated from the concept of short breaks and that the main destination of a city break should be a city. However, a deeper literature review regarding this type of vacation is needed to propose the determinants of this concept.

Additionally, one of the determinants of short breaks is the attributes of the destination's attractiveness (Barros & Machado, 2010; Gomes de Menezes et al., 2008; Herington et al., 2003; Murphy et al., 2010; Sharma, 2010; Smith, 1994), referring to what a traveler should find when visiting the destination. Based on the literature review, the following dimensions of a tourist destination are proposed: 1) natural resources, 2) cultural and historical resources, 3) social factors, 4) tourist services, and 5) infrastructure. The dimension "natural resources" includes the surrounding nature, like the flora and fauna, scenery, and weather (Dunn & Iso-Ahola, 1991; Fluviá et al., 2011; Gearing et al., 1974; Hu & Richie, 1993; Lew, 1990; Murphy et al., 2000). The dimension "cultural and historical resources" includes ruins, religious sites, and historical sites (Dunn & Iso-Ahola, 1991; Fluviá et al., 2011; Hu & Richie, 1993; Gearing et al., 1974; Lew, 1990; Murphy et al., 2000). The dimension "social factors" refers to the hospitality of the local people, their friendliness, the language spoken, and their jobs (Dunn & Iso-Ahola, 1991; Mo et al., 1993; Murphy et al., 2000). The "tourist services" dimension includes sporting facilities, nightclubs, theaters, places to eat, and lodging (Gearing et al., 1974; Fluviá et al., 2011; Hu & Richie, 1993; Lew, 1990; Murphy et al., 2000). The "infrastructure" dimension refers to the highways and to the water, electricity, communication, and transportation situation (Dunn & Iso-Ahola, 1991; Fluviá et al., 2011; Gearing et al., 1974; Hu & Richie, 1993; Lew, 1990; Mo et al., 1993; Murphy et al., 2000).

This paper contributes to the tourism sector literature because it identifies the dimensions of tourist destinations. These findings can help tourism managers to design short break packages that best suit their customers.

As for the contribution to professionals who work in the tourism sector, this study will allow for the development of a strategy for competitive destinations with the goal of providing current and potential regional or local short break destinations that are differentiated and more attractive on the market (Murphy et al., 2010). To this end, collaborative effort in the tourism industry is needed; that is to say, the public and private sectors must work together to develop short break destinations so they contribute to the regional and local economies of the country.

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A systematic review of cultural ecosystem services and valuation methods

Una revisión sistemática de los servicios ecosistémicos culturales y métodos de valoración

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Received: 2022-07-19

Accepted for publication: 2022-10-05

Published: 2022-12-31

ABSTRACT

This work aimed to investigate the amount of scientific productions in relation to cultural ecosystem services and valuation methods. An analytical-documentary perspective was used to describe the state of the art of these valuation methods, their operational complexity and forms of application. A systematic review of the literature was carried out, in the quantitative, descriptive and analytical research section, we used the ISI Web of Science and Scopus databases, generating 1332 articles from which the following were extracted: year of publication, type of publication, number number of citations, language, author, journal name, publisher, number of authors of each publication and impact factor. An increase in studies on cultural ecosystem services was verified over the years, since this quantity is associated with a greater number of citations and, consequently, with a high impact factor of the journals. Finally, cultural ecosystem services constitute a growing research field characterized by a growing number of publications from various academic disciplines.

Keywords: Intangible benefits; Non-material services, Ecosystems; Subjectivity; Operational complexity

RESUMEN

Este trabajo tuvo como objetivo indagar la cantidad de producciones científicas con relación a los servicios ecosistémicos culturales y métodos de valoración. Se hizo uso de una perspectiva analítico-documental, para describir el estado de arte de esos métodos de valoración, su complejidad operativa y formas de aplicación. Se realizó una revisión sistemática de la literatura, en la sección de investigación cuantitativa, descriptiva y analítica, utilizando las bases de datos ISI Web of Science y Scopus, generando 1332 artículos de los que se extrajo: año de publicación, tipo de publicación, número de citas, idioma, autor, nombre de la revista, editorial, número de autores de cada publicación y factor de impacto. Se verificó un aumento de los estudios sobre los servicios ecosistémicos culturales a lo largo de los años, ya que esta cantidad está asociada a un mayor número de citas y, en consecuencia, a un alto factor de impacto de las revistas. Finalmente, los servicios ecosistémicos culturales constituyen un campo de investigación en progreso, que se caracteriza por un número creciente de publicaciones de diversas disciplinas académicas.

Palabras clave: Beneficios intangibles; Servicios no materiales, Ecosistemas; Subjetividad; Complejidad operativa.

1. INTRODUCTION

The concept of ecosystem services (ES) has been developed to provide a holistic assessment of the benefits that humans derive from ecosystems. It is based on the idea that goods and services are ultimately generated by ecological functions (or processes), which give rise to benefits or aspects that are of value to people (Alexander, 1998).

The economic valuation of ecosystem services is often used as an argument to promote conservation issues and solve problems of environmental degradation (Castro et al., 2011). Certain aspects of ecosystem services may be inherently difficult to recognize through monetary approaches, not only because of ethical concerns, but also because their concrete, place-based nature may mesh poorly with the hypothetical or abstract counterfactuals typical of ecosystem services. declared preference methods (Cooper et al., 2016).

Consequently, cultural ecosystem services (CES) have proven resistant to monetary valuation, as many aspects of ecosystems, such as their aesthetic or spiritual qualities, are valued precisely for the non-commercial benefits they provide (Scholte et al., 2015). Consequently, a growing group of scholars have developed sociocultural valuation methods to capture the value of SEs (e.g., Agbenyega et al., 2009; Casado-Arzuaga et al., 2013; Hartter, 2010; Martín-López et al., 2012). Because the valuation of cultural ecosystem services remains one of the most difficult and least accomplished tasks in ecosystem services research.

Cultural ecosystem services have been relatively neglected by researchers and policymakers compared to provision, support and regulation services (Schaich et al., 2010). However, the purpose of distinguishing a category of services designated as cultural is to highlight that there are non-material products of ecosystems that are important to people, mostly non-consumptive products that affect people's physical and mental states. Nevertheless, presents conceptual and methodological difficulties in its application (La Rosa et al., 2016). It remains mired in innumerable criticisms, when specifying the nature of intangible values, but more significantly when it comes to relating intangible values to ecosystem functions (Gee and Burkhard, 2010).

This work aims to investigate the amount of scientific productions present in relation to cultural ecosystem services and valuation methods through scientometrics.

Making use of an analytical-documentary perspective, to describe the state of the art of these valuation methods, their operational complexity and forms of application.

The document is structured as follows: in the first section, a conceptualization of cultural ecosystem services, typology, operational complexity and valuation methods. In the second section we present the results from scientometrics. The searches originated in the titles, abstracts and keywords of documents published in relation to cultural ecosystem services. Emphasizing aspects such as: year of publication, unpublished publications or bibliographic reviews, number of citations, language, author, name of the journal, publisher, number of authors of each publication and impact factor.

2. Conceptualization of cultural ecosystem services

CES are the result of dynamic, complex, physical or spiritual relationships between ecosystems and humans, across landscapes and often over long periods of time (Fagerholm et al., 2012; Plieninger et al., 2013). They arise through human-ecosystem interactions (Chan et al., 2012a) and can be associated with all ecosystems, from uninhabited wilderness and coastal ecosystems to urban green spaces.

Once degraded, it is unlikely that they can be replaced by technical or other means (Hernández et al., 2013; Reid et al., 2005). They are also, due to their intuitive and largely subjective nature, non-generalizable: different people perceive CES in heterogeneous ways, depending on their backgrounds, experiences, cultural heritage, age, and gender (Plieninger et al., 2013; Suckall et al., 2009).

Assessments of cultural ecosystem services are quite subjective and value laden, as each individual or each group of individuals has different value systems and demands. Several factors must be considered such as experience, habits, belief systems, behavioral traditions and judgment, as well as lifestyles (MA, 2005).

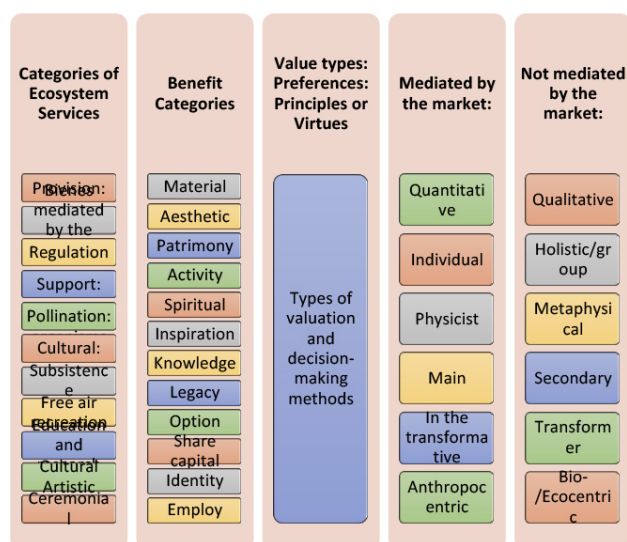
There are several characteristics of CES that make its evaluation different from the evaluation of other SEs (Figure 1). First, the general dependence of CES on an individual's value systems makes their evaluations less quantitative than other services (i.e., provision services) that can be quantified independently of the presence of humans (Nahuelhual et al., 2014). Another important issue is the difficult use of spatial geographic units for the evaluation of CES (Burkhard et

al., 2012). Explicitly space-based evaluation presents many challenges, and studies have primarily focused on mapping the benefits rather than the provision of CES (Milcu et al., 2013). For such reasons, interdisciplinary and transdisciplinary cooperation in CES evaluation better supports the evaluation process (Cheng et al., 2019).

CES are important because they are critical to well-being. Russell et al. (2013) identifies 10 key components of well-being: physical and mental health, spirituality, certainty, sense of control, security, learning/capacity, inspiration/realization of imagination, sense of place, identity/autonomy, connection/belonging, and subjectivity (in general). Although there are a variety of approaches to human well-being and the environment, he concludes that the evidence shows that knowing and experiencing nature makes us happier and healthier. Perhaps these ecological contributions of nonmaterial or extramaterial benefits, including experiences and capabilities, are some of the most prominent and compelling reasons for people to conserve or restore natural systems (Chan et al., 2012a).

Finally, the attractiveness of CES as a concept is rooted in both the diversity of applications and the recognition that sociocultural values underpin all other ecosystem services, and thus can be seen as a window into broader socioecological interactions (Chan and Satterfield, 2015; Pröpper and Haupts, 2014).

Figure 1. The interconnected nature of services, benefits and values



Source: Chan et al. (2012b). Modified by authors.

2.1 Typologies of cultural ecosystem services.

Cultural ecosystem services are defined by the Evaluation of Millennium Ecosystems (MA) as the “non-material benefits that people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation, and aesthetic experiences” (MA, 2005, p. 40). The MA still provides the most comprehensive overview and categorization to date, with the following suggested categories:

- Cultural diversity (in the sense that the diversity of ecosystems is a factor that contributes to the diversity of cultures).
- Spiritual services (recognizing that many religions attach spiritual and religious values to ecosystems or their components).
- Knowledge systems (traditional and formal) (appreciate that ecosystems influence the types of knowledge systems developed by different cultures).
- Educational values (Understand that ecosystems, their components and processes provide the foundation for both formal and informal education in many societies).
- Inspiration (in the sense that ecosystems provide a rich source of inspiration for art, folklore, national symbols, architecture and advertising).
- Aesthetic values (Many people find beauty or aesthetic value in various aspects of ecosystems, as reflected in support for parks, scenic drives, and selection of housing locations.)
- Social relationships (In the sense that ecosystems influence the types of social relations that are established in particular cultures. Fishing societies, for example, differ in many respects in their social relations from nomadic herding or agricultural societies).
- Sense of place and identity (ecosystems as a central pillar of the “sense of place” that is associated with recognized characteristics of its environment).
- Cultural heritage values (Understanding that many societies place a high value on the maintenance of historically important landscapes (“cultural landscapes”) or culturally significant species).
- Recreation and ecotourism (recognizing that people often choose where to spend their free time based in part on the characteristics of natural or cultivated landscapes in a particular area).

Despite mounting research over the last decade, the assessment of cultural services remains arbitrary and lar-

gely limited to marketable services such as tourism. The evident difficulties in standardizing definitions and measurements have challenged the accounting of cultural services in decision-making processes (Hernández et al., 2013). Despite the intuitive logic of the above categories, working with the concept of cultural ecosystem services presents a number of problems. The M.A. (2005) and the RUBICODE project (Vandewalle et al., 2009) acknowledge that, so far, spiritual, religious, recreational, and educational services have only been evaluated in small local studies, mainly because the data needed for these evaluations are not widely available.

2.2 Operational complexity of the concept

As with other CES, working with cultural ecosystem services requires identifying 'operating units' to which functions, benefits and values can be assigned (Haines-Young et al., 2007). When appreciating a panorama or nature, one is observing the (real physical landscape) the knowledge of the object and the satisfaction that people obtain by visiting or simply knowing that it exists, which refers to one of the value categories (Farber et al., 2002).

For this reason and due to their immaterial quality, cultural services are often much more difficult to assess than support, provision or regulation services. There is a bias towards CES leisure concepts such as recreation, tourism, aesthetics, and educational values (Pröpper & Haupts, 2014). Here are some operational complexities of the concept, including: inherent difficulty of establishing a clear relationship between the intangible values that can be assigned to certain elements of the ecosystem and the functions or benefits of the ecosystem (Vejre et al., 2010).

The main drawback of cultural ecosystem services, is that the value is not a calculable result. Awareness of the formal qualities of a place, for example, is just one element of many dimensions that come together in an aesthetic experience (Hansen-Möller, 2009). Factors related to the observer also come into play, social and cultural experience, habits, belief systems, behavioral traditions, judgment and lifestyles, factors in other words that are related to the observer and, at best, of the cases, indirectly with the ecosystem (Kumar and Kumar, 2008). Therefore, work with cultural ecosystem services it must consider the values in the ecosystem as well as the relationship between the observer and the environment, including the personal and social driving forces that influence the demand side.

Currently, there are numerous indicators for most ecosystem services, but very few for cultural services (Feld et al., 2009). In general, reflect poorly on economic indicators and are rarely tradable (Martín-López et al., 2009). The main reason why researchers propose that the real evaluation of CES is not possible, is inadequate or inappropriate (Hernández et al., 2013).

However, and the concept is used more and more in theoretical and practical contexts (Milcu et al., 2013). The growth of interest in the CES has been accompanied and further stimulated by significant debate related to the integration of the CES into decision-making and governance processes. To make them comparable with other SEs in compensation and management plans, many have tried to develop ways of assigning monetary values (Coscieme, 2015; Van Berkel and Verburg, 2014).

Thus, the increasing attention on CES is not simply a recognition of the technical shortcomings of existing ecosystem service assessments, but because CES assessments emphasize non-monetary valuations and deliberate valuation methods, they also provide a scenario to challenge existing modes of environmental resource assessment or governance and the values that underpin them (Hirons et al., 2016).

Finally, existing research that addresses the effects of cultural ecosystem services on human well-being has been carried out in the Global North, that is, high-income countries, especially in North America and Europe. Still, gaps in knowledge are evident, especially with regard to Africa, Central Asia, East Asia, and Latin America (Kosanic and Petzold, 2020). A new challenge that should be detailed in future works is interdisciplinarity to better understand the role played by ecosystems (Kumar and Kumar, 2008). In addition, there is growing recognition of the need to unite analytical and participatory methodologies to establish more comprehensive valuations of ESAs and overcome individual conceptions of value (Kenter, 2016).

2.3 Methods for Valuing Cultural Ecosystem Services

They can be characterized along several dimensions: whether they are based on quantitative or qualitative data or a combination, examine people's stated or revealed preferences, result in monetary or non-monetary valuations, involve stakeholders in the valuation process, facilitate deliberations, social learning among stakeholders, and provide spatial analysis.

2.3.1 Methods that prioritize monetary valuation

The hedonic pricing method uses the assumption that people will pay more for houses, which are near a park or lake, because they provide CES. Many aspects of the aesthetic environment significantly impact total view area, as well as some types of land cover (water and grass) positively influence home sales prices (Farber et al., 2002; Sander and Haight, 2012).

The travel cost method is applicable when direct physical access to CES locations is important. The method seeks to quantify the financial resources and/or time needed to travel to an area that provides the cultural ecosystem service, such as a national park or nearby forest, as a means of assessing the total value that area brings (Costanza et al., 1989).

Willingness-to-pay/accept methods are a type of stated preference method whereby participants are invited to express the value of an ecosystem service through the amount of money they say they would be willing to pay to encourage (or prevent) a change in the provision of a given ecosystem service (Barrena et al., 2014). This is also known as contingent valuation: the service demand can be obtained by posing hypothetical scenarios that involve some valuation of alternatives (Carson and Hanemann, 2005).

The advantage of monetary methods is that they can be used to compare and make a trade-off assessment between CES and other SEs (i.e., brokerage services) regulation, services of provisioning and support services). Although cultural diversity, knowledge systems and social relationships are rarely investigated with monetary methods, this is one of the reasons why more and more researchers use non-monetary methods (Cheng et al., 2019).

2.3.2 Methods that give priority to non-monetary values

In contexts where monetary valuation methods are opposed by people, or are not considered appropriate, various non-monetary valuation methods can be used. Scaling methods ask stakeholders to assess the value of ecosystem services using arbitrary scales rather than monetary values. These scales are flexible in that they can be used in many studies and can be symmetrical and balanced Likert scales (eg, a five-point scale: "very good", "good", "neutral",

"poor" and "very good"). Or simple numerical scales from 0 to 5 (Kopperoinen et al., 2014).

Ranking methods ask stakeholders to prioritize a range of CES options in an order and use the order as a measure of value. Some versions of this method use text-based approaches (either with moving cards or flipcharts), while photo-getting approaches use images, which can be manipulated to represent different SE for classification and are particularly useful for overcoming language barriers (Martín-López et al., 2012).

Analysis of social network photographs provides a revealed preference option for the analysis of cultural ecosystem services. Georeferenced and openly collaborative photographic datasets are analyzed for evidence of cultural ecosystem service potential, through photographs of particular charismatic species, aesthetic landscapes, or ecosystem-based recreational activities. The geolocated nature of these images allows us to identify spatial patterns in the CES uptake (Martínez et al., 2016).

CES can also be evaluated using quantitative modeling approaches. Geographic information systems (GIS)-based approaches, for example, have been used to assess numerous SEs by applying expert- or stakeholder-guided values combined with spatial data related to land use and/or ensembles of complementary data, for example, of hedonic pricing methods, to quantify the accessibility of the sites that provide ECS in relation to population centers (Kopperoinen et al., 2014).

Bayesian belief networks (BBN) are used as a means to implement deliberative-analytic approaches in relation to ecosystem service mapping and scenario outcome modeling (Haines-Young, 2011). Modeling approaches are particularly useful as they can be used to predict changes in SE provision as a result of changes in policy or action. The explicit quantification and mapping of ecosystem services is considered as one of the main requirements for the implementation of the concept of ecosystem services in environmental institutions and decision-making (Daily and Matson, 2008).

However, non-monetary methods typically require large, time-consuming databases, trained enumerators, highly trained facilitators, and advanced processing skills to avoid the dominance of individual influences in focus groups (Cheng et al., 2019).

2.3.3 Methods that prioritize stakeholder understanding, social learning, and co-production of knowledge

There are various narrative and artistic methods by which the experiences of individuals' interactions with nature can be expressed directly by stakeholders (Satterfield, 2001). These methods include a variety of techniques including interviewing, oral histories, voice or video recording of events, storytelling, obtaining photographs, and artistic expression. Allowing stakeholders freedom of expression, these inventions allow their complex, multiple and varied experiences with ecosystems to be presented with little influence from the evaluator, often in very creative ways. However, the analysis of the results still requires an external interpretation.

Scenario building provides a descriptive way to explore the future development of ecosystem services. Scenario-based approaches can draw on expert opinion and/or public participation to develop a "story line" for how the future may unfold and use these story lines to explore the implications of changing service provision (Plieninger et al., 2013). In addition, there are numerous anthropological methods such as participant observation whereby the evaluator develops his or her own understanding of the associations between people and the environment through lived experience with the stakeholders in question (Calvet-Mir et al., 2012).

Deliberative group discussions (Wilson and Howarth, 2002), citizen juries (Spash, 2007), and the Q methodology (Pike et al., 2015) use group activities and participatory and deliberative approaches to obtain detailed information on the relationship of people with the natural environment and the socio-cultural values that they give it. Another resource to be used is participatory GIS, a common approach that uses spatial information as a baseline to facilitate discussion among stakeholders. Geoinformation tools used in these applications include collaborative spatial data collection using remote sensing methods, participatory maps, aerial photography and imagery; analysis and representations (McCall, 2003).

Participatory modeling is another approach that deliberately attempts to break the power asymmetry inherent in expert-based modeling of local contexts. Based on the premise that the different actors involved in resource management operate with different reference areas and time scales in mind, the approach focuses on the representa-

tion of this diversity in its tools and in the form of coordination workshops (Étienne, 2013).

2.3.4 Integrated Methods

Although it is convenient to separate the approaches as stated above, multiple, combined or hybrid approaches integrating these methods and assessment frameworks can be developed to customize an approach for a given problem (Kopperoinen et al., 2014). The use of multiple methods, for example, can allow users to understand a given service from different angles: a modeling approach can provide an overview of the services provided by an area based on land use, and a mapping exercise participatory mapping can complement this by providing experience of the same space.

In addition, there are numerous techniques for evaluating decisions. Multi-criteria decision analysis (MCDA), for example, provides a means of evaluating how well different decisions affect outcomes by specifying the relationship between the amount of a given indicator (for example, available open space) and its importance for a given outcome (for example, recreation) (Satterfield et al., 2013). MCDA has the advantage of being able to take any kind of quantified values (e.g., cultural and/or biophysical, monetary and/or non-monetary, quantified and/or expert-based) and, specifying the relationships, convert them (either deliberately or expertly directed) into a common arbitrary unit that can be compared (Adamowicz et al., 1998).

Although integrated and mixed methods approaches may generate better insights, the findings are strongly influenced by the choice of methods and their implementation (Hattam et al., 2015).

It should be anticipated that culture itself is a complicated issue, including both tangible assets and intangible qualities that are lived or experienced rather than easily articulated in response to the direct question-and-answer formats that characterize preference surveys and similar instruments. research. Alternative methods that encourage narrative expressions of experience and meaning are therefore likely to be more productive (Satterfield et al., 2013).

Perhaps the biggest challenge in the valuation of ecosystem services lies in giving value to services that have no direct or indirect material benefits, referring here to bene-

fits that are conceptual rather than physical (Chan et al., 2011; Oleson et al., 2015). Examples include spiritual enrichment, cognitive development, recreation, and aesthetic experiences.

As such, expressions of astonishment and all their parallels are probably not compatible with the kinds of direct question-and-answer formats used, for example, by contingent valuation, preference surveys favored by economists. However, they may be amenable to measures based on narratives or descriptions, which decision analysts and the psychologists usually call constructed scale (Keeney and McDaniel, 1992) or constructed value (Lichtenstein and Slovic, 2006) in which different degrees of wonder (eg, "a little" or "a lot") can be tied directly to the narratives.

Neglected services such as social relationships, cultural diversity, and knowledge systems are mostly assessed using stated preference methods, such as interviews, questionnaires, and GIS, as those services are more abstract and rely heavily on public perception (Cheng et al., 2019).

More research is needed on developing non-monetary methods to value cultural ecosystem services and incorporate them into easy-to-use tools (Daily et al., 2009). Therefore, interdisciplinary approaches are needed to improve understanding of cultural ecosystem services that take into account the dynamic nature of human-environment interactions and potential synergies and trade-offs between cultural, supporting, provisioning and regulation (Tengberg et al., 2012).

An assessment of cultural ecosystem services must also include a historical perspective, as well as the different perspectives and perceptions of different stakeholder groups that are not easily translated into quantitative indicators (Milcu et al., 2013). Because spiritual, inspirational, and place values are not products of single experiences, but products of all kinds of experiences associated with ecosystems. Therefore, they recommend more inclusive valuation approaches and integration with biophysical and economic service models (Chan et al., 2011).

3. MATERIALS AND METHODS

We carried out a systematic review of the literature, in the quantitative, descriptive and analytical research section we used the ISI Web of Science databases (<http://www.isiknowledge.ez163.periodicos.capes.gov.br>) and

Scopus (<http://scopus.com.ez163.periodicos.capes.gov.br>) to perform an exhaustive search based on the terms described in (Table 1). The research was carried out on titles, abstracts and keywords of scientific articles, including the publication periods from 2007 to 2022 (Table 2).

Table 1. Keywords for searching academic databases.

Search terms
P1: "cultural ecosystem services"
P2: "cultural ecosystem services" and "valuation methods".

Table 2. Number of articles consulted

Font	Number of papers
Articles searched in Web of Science	1379
Documents searched in Scopus	1082
Elimination of duplicates, gray literature	1129
Included in the review	1332

Some information on the selected studies was identified and recorded, such as: year of publication, original articles or bibliographic reviews, number of citations, language, author, name of the journal, publisher, number of authors of each publication and impact factor. For the impact factor of each journal, the 'JCR Impact Factor' package was used (Faisal, 2021). Thus, once the data had been collected and organized in spreadsheets, they were tabulated and then evaluated using descriptive statistics and Pearson's correlation tests to classify the probable relationships between the variables studied: I. The number of publications per year; II. The number of citations per year; III. Impact factor and number of authors; IV. Impact factor and year; V. Impact factor and number of citations.

4. RESULTS AND DISCUSSION

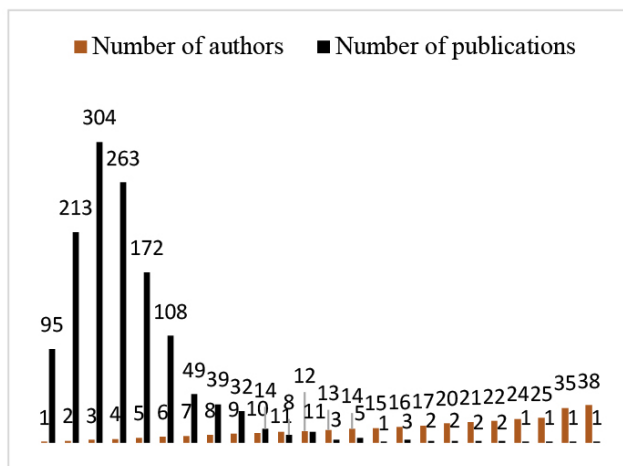
A total of 1,332 documents were entered in the databases, which were structured as follows: Environmental Sciences - 839 documents (33%) and Agricultural and Biological Sciences - 506 documents (20%) which stood out in the areas of publication knowledge. The same publication often had broad areas of knowledge, because Cultural ecosystem services are one of the four main categories of services. However, cultural services cannot be treated independently and depend on provision, regulation and support services, at the same time that the expression of cultural ecosystem services influences the way ecosystems are viewed and managed (Tengberg et al., 2012).

The journals that stood out in publications with a multidisciplinary approach were: Ecosystem Services with 161 publications (12%) and Ecological Indicators with 62 publications (5%) in relation to the publishers that stood out were Elsevier BV with 290 publications (23%) Mdpi with 127 (10%) and Elsevier Ltd with 108 (8%). Regarding the type of work, the majority (85%) of the documents found were original articles and only 6% were review articles, among the other 9% there were notes, errata, book chapters, letters, conference papers and others.

The most recurrent original language of publication was English (96%) followed by Spanish (1%). Mastery of the English language in science has become paramount and the importance of having a unifying language will continue to grow because language is essential in the scientific environment, in the publication of scientific works and discoveries, which allow the communication of scientific knowledge in the international context between teaching and learning institutions. Thus, a concern arises about the mastery of the English language in the academic field in which it is sought to optimize reading, comprehension, and writing (Zambonato, 2019). For this reason, there are financing agencies that direct economic resources to Post-graduate Programs that have international inclusion, that is,

The article with the highest number of citations (1194) addresses the provision of multiple ecosystem services in landscapes and empirically demonstrates ecosystem services, the title is: "Ecosystem service bundles for analyzing tradeoffs in diverse landscapes" from 2010.

Figure 2. Number of published documents and their respective number of authors, years 2007 – 2022



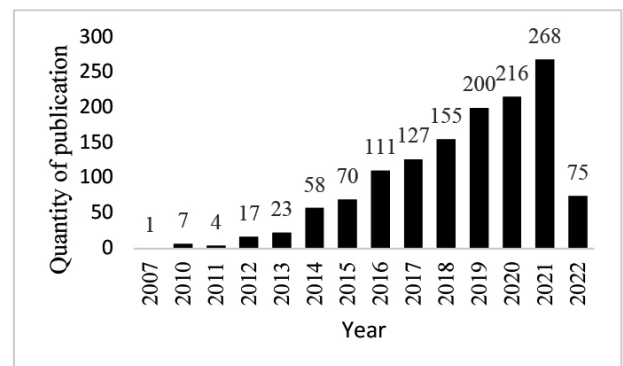
Source: self made.

Most of the publications obtained a low number of citations, that is, from 20 to 1194 citations, 402 (35%); the average number of citations of the 1132 publications is 30. The impact factor of a journal or newspaper is related to the frequency with which the articles are cited, revealing the quality of that journal. Very few studies on CES have been carried out in Latin America where the historical, social and economic conditions are different from those of Europe or North America (Kosanic and Petzold, 2020).

On average, the selected articles had 4 authors. Most of the articles (69%) have six or fewer authors (Figure 2). Likewise, there has been a significant increase in the literature published on this topic in the last 20 years, apparently growing exponentially from 2005 when the MA was published (Hernández et al., 2013). As shown in Figure 3, there was a significant increase in scientific production over the years, in 2021 there was a production peak with 268 articles published.

In addition, an association is verified between the impact factors related to the number of authors and a propensity to increase the citation in relation to the number of authors (Table 3). The research by Mattedi and Spiess (2017) showed a significant association between the impact factor and the number of authors per article, since publications with a greater number of authors tend to receive more citations, corroborating this study (Table 3). Therefore, there is a tendency to increase the number of citations according to a considerably significant impact factor. The notion of cultural ecosystem services has generated a variety of ideas and, most likely, we will witness the rapid evolution of this field of research in the coming years (Milcu et al., 2013).

Figure 3. Number of publications throughout the years 2007-2022.



Source: self made.

Furthermore, the study showed that, over the years, there was a significant approval with the impact factor of published journals and the number of citations. The Impact Factor is used to measure the quality of a given journal, those with a higher Impact Factor are considered more important. Thus, they represent the relationship between the number of citations of a journal with its number of published articles, that is, it considers the journal as a whole and includes all the citations and title of the journal (Miglioli, 2017). Therefore, in the academic field it is important to publish in high-impact journals with the intention of attesting to performance (Goldenberg, 2019). Therefore, the impact factor will continue to be used in Brazilian scientific evaluations, but its limitations can be overcome through aggregation with other methodologies, since this method should not be the only one applied to help in scientific evaluation, because it can cause erroneous and inconsistent conclusions (Almeida and Gracio, 2020). With this, we observe the importance of relating the impact factor as other variables as in this study that we perform correlations.

Table 3. Associations between the number of citations, the number of authors, the year and the impact factor of the journals that have published on cultural ecosystem services.

Associations	<i>r</i>	<i>p</i> *
Number of citations x Year	-0.5174	< 0.0001
Number of citations x Impact Factor	0.2312	< 0.0001
Number of authors X Number of citations	0.1017	0.0016
Number of authors X Year	0.0415	0.1919
Number of authors X Impact factor	0.1085	0.0008
Impact Factor X Year	-0.0981	0.0023

Source: Own elaboration, 2022.

5. CONCLUSIONS

Ecosystems provide goods and services that are necessary for the survival of humanity and the development of society and cultures. The loss of these ecosystem services also has negative impacts on human well-being in terms of loss of access to safe food and water, and traditional medicine, which affects health.

There are various valuation methodologies to find an estimate of the value of the goods and services provided by ecosystems. The most appropriate for each case will depend on both the characteristics of the good or service to be valued (whether or not it has a

market, whether it is a cultural or provision service, etc.) Therefore, more holistic CES assessment methods are needed, particularly in the Global South, to identify the role that CES play in the lives of communities, while improving the incorporation of CES in environmental planning.

This study verified an increase in studies on cultural ecosystem services over the years, since this quantity is associated with a greater number of citations and, consequently, with a high impact factor of the journals. Cultural ecosystem services constitute a growing field of research characterized by a growing number of publications from various academic disciplines.

Finally, cultural ecosystem services have attracted attention in a wide variety of publications, originating from multiple academic disciplines and employing heterogeneous approaches. The heterogeneity in approaches to cultural ecosystem services research may be due to three interacting circumstances. First, the diversity of approaches and apparent lack of cohesion rightfully correspond to the eclectic nature of cultural ecosystem services. Second, within all groups, cultural ecosystem services tended not to be the priority focus of research projects. In third place, The multitude of perspectives on cultural ecosystem services reflects the development of a relatively new field of research that lacks a well-established and replicable research framework. The diversity of research on cultural ecosystem services indicates scientific dynamism, but, at the same time, the lack of a strong common terminology and understanding

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Innovation and creativity in the tourist offer: challenges and perspectives for Holguin tourism destination, Cuba

Innovación y creatividad en la oferta turística: retos y perspectivas para el destino turístico Holguín, Cuba

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Received: 2022-11-07

Accepted for publication: 2022-12-05

Published: 2022-12-31

ABSTRACT

Innovation is a key tool for the commercialization of creative experiences. The article aims to identify the challenges and perspectives for tourism innovation in Holguin tourism destination, Cuba. To this end, the features of innovation in tourism and the relevant factors for the design of creative experiences were identified. A Scopus search on tourism innovation was carried out, the processing in Bibexcel software allowed to analyze the productivity of articles and the use of VOSviewer to identify the main contributions through the co-citation of authors. The identification of relevant factors for designing creative experiences was carried out through the analysis of keywords in VOSviewer of the articles published in Scopus on the subject. An Occurrence-Strength matrix of keyword links was developed to identify the priority level of each factor. An exchange was carried out with academics and researchers of Holguin destination to know its current situation. The results show that, although tourism is characterized as an innovative sector, there are important gaps to be filled. Tourism innovation should be oriented to the creative experience through the development of factors such as co-creation. Among the main challenges facing the destination is the need for flexible and integrative thinking in organizations.

Keywords: tourism innovation, tourism experience, creativity

RESUMEN

La innovación es una herramienta clave para la comercialización de experiencias creativas. El artículo pretende identificar los retos y perspectivas de la innovación turística en el destino turístico de Holguín, Cuba. Para ello se identificaron las características de la innovación en el turismo y los factores relevantes para el diseño de experiencias creativas. Se realizó una búsqueda en Scopus sobre innovación turística, el procesamiento en el software Bibexcel permitió analizar la productividad de los artículos y el uso de VOSviewer para identificar las principales contribuciones a través de la co-citación de autores. La identificación de los factores relevantes para el diseño de experiencias creativas se realizó a través del análisis de palabras clave en VOSviewer de los artículos publicados en Scopus sobre el tema. Se elaboró una matriz de ocurrencia-fuerza de los vínculos de palabras clave para identificar el nivel de prioridad de cada factor. Se realizó un intercambio con académicos e investigadores del destino Holguín para conocer su situación actual. Los resultados muestran que, si bien el turismo se caracteriza por ser un sector innovador, existen importantes vacíos por llenar. La innovación turística debe orientarse a la experiencia creativa a través del desarrollo de factores como la co-creación. Entre los principales retos a los que se enfrenta el destino está la necesidad de un pensamiento flexible e integrador en las organizaciones.

Palabras clave: innovación turística, experiencia turística, creatividad

INTRODUCTION

Innovation is currently considered a powerful tool for survival in the international market. Companies tend to be more competitive when they are innovative and take advantage of environmental opportunities. Hence, research and development play a relevant role in the search for alternatives that allow an increasingly effective business performance.

In tourism, this quality is indispensable since its raison for being is to obtain income through the commercialization of tourist experiences. Thus, although its understanding requires being seen from disciplines such as economics, geography, sociology and psychology undoubtedly have great weight. The recognition of the value of the intangible in the construction process of tourism products is a basic condition for meeting the expectations of today's consumers.

In this process, innovation is an indispensable phase in extending the life cycle of tourism products, since it is the rejuvenation of the offer that makes it possible to retain current customers and gain access to other markets. Therefore, innovation for companies enables increased efficiency and sustainable competition (Rojo Gutiérrez et al., 2019), while for consumers it influences satisfaction and improved experience (Işık et al., 2019).

Derived from the above, tourism managers focus on achieving to provide memorable experiences to consumers, focusing on intangible goods, rather than tangible ones. In fact, creative or experiential tourism is currently spoken of as a new form of innovative management of the different modalities, which focuses on the co-creation of experiences through the use of technologies, collaborating consumers, local community and tourism providers (Richards, 2020).

However, although it is common to speak of tourism as an innovative sector, scientific production on tourism innovation is not among the most abundant and in practice it is often not possible to identify innovations, which is reflected in the lack of statistics on the subject. This phenomenon is largely due to the economic nature of innovation since its emergence, accompanied by a technological and radical or disruptive nature.

Consequently, there have been several positions in the

literature on the measurement of innovation in tourism, ranging from criticism of the autonomous approaches to the treatment of the subject to the existence of studies that justify these approaches. In view of the divergence of perspectives, it is necessary to analyze the particularities of tourism that influence the specific features of innovation in comparison with other industries.

The identification of the features of innovation in tourism from the scientific production can contribute to more clarity on the subject from the practical point of view, from a greater orientation and objectivity in the work of the companies. The binomial science-innovation is an important starting point for efficient and effective tourism management, in a context characterized by information saturation and the intensive use of new technologies.

In Cuba, the highest authorities stimulate the innovation process from the universities to meet the needs of the territory, it is aspired to achieve a creative and innovative organizational management (Díaz-Canel Bermúdez, 2021). Current policies support these desires, the Update of the guidelines of the economic and social policy of the Party and the Revolution for the period 2016-2021 calls to improve the marketing of tourism services (154), its diversification and quality (155), as well as the use of ICTs in the digital transformation of the destination making more efficient and competitive processes related to tourism management (156).

Similarly, the Economic-Social Strategy for boosting the economy and confronting the global crisis caused by COVID-19 recognizes innovation and competitiveness among its principles and calls for the transition to innovative tourism products and the acceleration of clusters with other sectors (health, culture, sports, ecology).

In this context, in Holguin destination, the project of the Scientific and Technological Park of the University of Holguin and the Mintur trace as line of investigation XII the design and improvement of tourist products. Holguin develops the Sun and Beach modality as the main offer, however, the product portfolio misses important potentialities. There are shortcomings in terms of the tourist-local community link in the construction of experiences; insufficient use of technologies to know what the tourist expects to obtain from the products, which is an indispensable phase of innovation; as well as dissatisfaction in the indicators of repeat visits and recommendations to other

people, linked to consumer loyalty to the destination (Serrano-Leyva, Feria-Velázquez, et al., 2021).

Despite the favorable conditions for a change oriented to an innovative organizational management that solves society's problems through science, there are many challenges linked to the need for human capital, as the main executor of innovation, to be able to assume risks and be willing to continuously improve processes.

The objective of the research is to identify the main challenges and perspectives for the innovation of the tourist offer in Holguin destination.

To this end, the starting point is to determine the features of innovation in the tourism sector and to identify the relevant factors for innovation in order to achieve creative experiences.

METHODOLOGY

A search on tourism innovation was carried out in the Scopus database. The terms "tourism innovation" were used as thematic descriptors in the filter title, abstract and keywords of scientific articles. These descriptors were used so as not to limit results and to enable the analysis of the theoretical structure of innovation in general. The non-restriction of the time frame also pursued this objective.

The database obtained was processed with Bibexcel software to calculate productivity by years and productivity by authors. The VOSviewer software was used for the analysis of co-citation of authors, in order to identify the most relevant authors in the field of study. A bibliographic review was carried out in which these indicators were taken into account for the selection of the reading portfolio. Then, the historical-logical method was used to identify regularities in order to determine the features of innovation in tourism.

A search was conducted in the Scopus database on the role of experience in the framework of creative tourism. The search equation used was "creative tourism" AND "experience". The search was carried out on the title, abstract and keywords of the articles. To identify the re-

levant factors in the conception of experience in creative tourism, the keywords of each article were analyzed using VOSviewer software. A thesaurus was elaborated to homogenize the terms of equal meaning. The indicators of occurrence (frequency of descriptors in the articles) and strength of links (most representative in the field of study) were used (van Eck & Waltman, 2010).

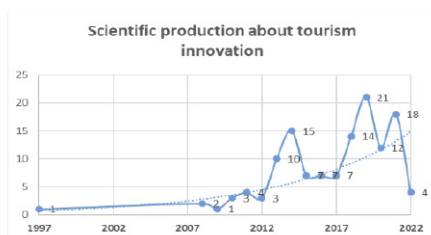
To identify the level of priority of each factor in the design of creative experiences, an Occurrence-Strength matrix of the links was elaborated, using as a reference the algorithm of the Importance-Valuation matrix of Ábalo Piñeiro et al. (2006). The factors were placed on a rectangular coordinate axis according to the weight of occurrence-strength of the links (x;y). Two parallel reference axes were plotted. For the axis parallel to the abscissa axis, the average occurrence of the factors was taken into account, while for the axis parallel to the ordinate axis, the average of the link strength indicator was taken into account. In the upper-left quadrant are the factors most relevant to the field of study, but less addressed. In the lower-left quadrant are the least addressed and least relevant. The upper-left quadrant shows the most relevant and addressed factors and in the lower-right quadrant, the most addressed and least relevant.

In the analysis to identify the main challenges and perspectives for the innovation of the tourism offer based on the development of creative tourism, ideas were exchanged with academics and researchers from the University of Holguin and the Ministry of Culture in the province, as well as with tourism managers.

RESULTS AND DISCUSION

The Scopus search yielded a total of 129 publications corresponding to the period 1997-2022. The year with the highest productivity was 2019, because since the crisis originated in tourism by Covid-19, innovation in the sector has been the subject of interest of the international scientific community, including organizations such as the World Tourism Organization (UNWTO) and the United Nations Educational, Scientific and Cultural Organization (UNESCO), which have repeatedly called for the promotion of the subject as a necessity for recovery.

Figure 1. Scientific production on tourism innovation in Scopus



Authors such as Anne-Mette Hjalager, who has systematized the subject and has 7 publications in Scopus, as well as Colin Michael Hall and Allam M. Williams, who are among the most cited authors (more than 100 citations), are important references for the analysis. The following co-citation network shows these authors as central nodes.

Figure 2. Co-citation of authors addressing the topic of tourism innovation



In the scientific production on tourism innovation, there is no consensus on the definition and measurement of the construct. There are several attempts to demarcate or autonomy of the topic in the sector. Authors are inclined to differentiate the subject both from other industries and from the rest of the services. This has led to the existence of new approaches that need to be evaluated.

Schumpeter was the first author to refer to innovation in his book *The Theory of Economic Development*, published in 1911. The author gives continuity to a classic line of economic research: economic development, and introduces two concepts of great impact, innovation as a cause of development and the innovative entrepreneur as a

propitiator of innovation processes. Explaining Schumpeter's conception of economic development is far from the object of research; the authors limit themselves to emphasizing that the genesis of innovation is of an economic nature, being considered a fundamental force of capitalist production, and is also restricted to the technical system. Schumpeter focuses, therefore, on technological innovation, with the particularity of having a radical or disruptive character.

By radical innovations he means: the introduction of new consumer goods on the market, the emergence of a new method of production and transportation, the achievement of the opening of a new market, the generation of a new source of supply of raw materials and the change in the organization (of any organization or in its management process) (Schumpeter, 1934). However, innovation should not be limited to technology alone. In this respect, Daft (1978) proposes the "double core" model where, in addition to the "technological core" ("technical system"), he refers to the "administrative core" ("social system") of the company, which would make it possible to assess innovation in services.

This is due to the fact that it is only since the 1990s that this sector begins to relate to the subject, but from a perspective of subordination or assimilation, applying concepts of technology or manufacturing. Later, as a result of the consideration of the particular characteristics of services such as co-terminality of production and consumption, information intensity, importance of the human factor and organizational factors (Hall & Williams, 2008), two new trends take place, the autonomy or demarcation approach sustained in the differentiation with manufacturing and the synthesis approach that explains more precisely the boundaries between manufacturing and services (Montresor, 2018).

In fact, Schumpeter's definition was expanded over time, in the search for a more inclusive definition. The best example is found in the Oslo Manual, recognized in the international framework as the main methodology for measuring innovation and a key tool for decision-making. The first edition dates from 1992; however, it recognized innovation in the services sector from its second edition in 1997. In its fourth edition, the manual eliminates the distinction between

technological and non-technological innovation. It outlines new guidelines for measuring innovation not only in the productive sector, but also in other types of organizations and individuals (Unión Europea, 2019).

Tourism as another service is distinguished from manufacturing and although it shares the above features with services, it has characteristics that make innovation in the sector different. Hall and Williams (2008) refer to the characteristics of tourism that influence innovation, such as the grouping of related activities; temporality; spatiality; encounters between the tourist and the tourism industry; and encounters between the tourist and the host community.

These characteristics influence the development of innovation:

- The clustering of activities implies that the perception of the experience depends on the overall quality, which can influence whether the innovation carried out in one subsector propitiates other innovation or on the contrary prevents it
- The temporality and fixity of space: the act of tourism is not storable, it happens at a programmed time and place. The challenge of innovation in this context lies in the reprogramming of the activity, looking for alternatives that allow its execution.
- The encounters between the tourist and the industry: the way in which tourism companies operate in the creation of experiences is visible to competing companies, which makes it a constant focus of innovation due to its importance and the impossibility of patenting each innovation
- The encounters between the tourist and the host community have a series of socioeconomic impacts that increase with the arrival of more tourists to the destination, which requires sustainable innovations.

Consequently, "innovation in tourism services could be based less on the accumulation of internal technological knowledge and more on knowledge development and learning capabilities" (Camisón & Monfort-Mir, 2012, p. 787). Seen from this approach, the weight of innovation lies in the firm's response to the changes occurring in the environment, rather than in the result as Schumpeter does.

It is also important to note that in tourism there is a predominant orientation to experience rather than functionality. Volo (2006) considers that tourism innovation is con-

ditioned by the perception of changes in the consumer's experience. This line has been continued by authors such as Hoarau-Heemstra and Eide (2019) and Gardiner (2021) and is based on the "economics of experience" (Pine & Gilmore, 1999).

Despite agreeing with Volo (2006) regarding the role of experience in the definition of innovation, we agree with Drejer (2004) in assessing the risk of an overly broad definition of innovation that can lead to confusion of the term with the normal activity carried out by the company. Taking this aspect into account, 23 definitions of the innovation construct were analyzed (Annex 1) to assess the inclusion of the necessary features. The analysis of the definitions shows that, although Schumpeter's concept limits the inclusion of various tourism innovations, conditions such as novelty, reproducibility and economic impact should prevail.

Based on the previous analysis, it is considered that the definition of tourism innovation, in the first place, should be more comprehensive than Schumpeter's definition, i.e. it should not be restricted to the technological core; it should consider the organization's capacity to take advantage of the opportunities of the environment, it should be perceived in the consumer's experience and also meet Schumpeterian conditions in terms of novelty, reproducibility and economic impact.

Although with an integral character of destination, the World Tourism Organization (UNWTO) provides a definition that satisfies the conditions addressed: tourism innovation is the introduction of a new or improved component that brings material and immaterial benefits to tourism stakeholders and the local community, that improves the value of the tourism experience and the key competencies of the tourism sector and thus enhances tourism competitiveness and/or sustainability (UNWTO, 2019, p. 25).

Regarding the classification of innovation, Dussauge et al. (1992) posits that innovation can be classified according to the magnitude of the change that occurs into:

Incremental: the product architecture is not changed, only some of its components or concepts are reinforced or improved.

Radical: both the architecture and the components are altered, it is a new product.

Modular: the modular components of a product are radically changed, but its architecture remains unchanged.

Architectural: the way in which the product's components and concepts are articulated is modified, but the components and concepts are only reinforced or remain unchanged.

According to its nature, innovation has also been classified into technological and non-technological, technological innovation from the Schumpeterian perspective refers to qualitative changes in production techniques and productive organization (Schumpeter, 1934), hence in the Oslo Manual (2005) it is associated with product and process innovations. Non-technological innovations, on the other hand, are those that satisfy a necessary change or adopt technologies and are linked to organizational and commercial innovations (Unión Europea, 2005).

Before discussing how the classifications of innovation in tourism have been approached, the authors consider it necessary to refer to the novelties of the 2019 Oslo Manual with respect to the subject, which represent a starting point to consider because of their topicality. In this new edition, as previously mentioned, the handbook eliminates the distinction between technological and non-technological innovation and reduces "from the complexity of the previous list-based definition, which comprises four types of innovations (product, process, organization and marketing), to two main types: product innovations and business process innovations" (Unión Europea, 2019, p. 34). Therefore, they are considered as basic definitions:

- Product innovation, considered a new or improved good or service that differs significantly from the company's previous goods or services and that has been introduced into the market
- Business process innovation understood as a new or improved business process for one or more business functions that differs significantly from the company's previous business processes and that the company has put into use.

The recognition of these two categories as basic forms of innovation simplifies the discussion of the treatment of the different positions assumed regarding the types of tourism innovations. Montresor (2018) states that in this topic there has been no consensus in its definitions and therefore, the limits for the study of its reproducibility and

relevance are not clear and also the mutual relationships or co-occurrence of different categories blurs the types of innovation.

This is evident in the literature on tourism innovation linked to experience, where the traditional types of innovation (product, process, organization and market) overlap. Weiermair (2005) states that this close relationship is due to a value chain approach. Undoubtedly, as far as tourism experience is concerned, innovation implies the rupture of category boundaries and what is called in services a "fuzzy" character (Hjalager, 2010).

Therefore, the perception of innovation in the tourism experience is considered a distinctive feature for the tourism sector. The study of the tourism experience can be very broad due to its subjective nature and linkage with factors of different natures. Among the most widely accepted approaches in the tourism literature is the one contributed by Pine and Gilmore, considered the basis for the study of innovation, since the authors break with the traditional approach to services by giving a new role to the consumer. For Pine & Gilmore (1999), experience is something that occurs when a company intentionally uses services as a setting, and goods as props, to involve individual customers in a way that creates a memorable event.

Thus, commodities are considered fungible, goods tangible, services intangible and experience memorable. The transition to the experience economy occurs just as the industrial economy gave way to the service economy, based on new technologies that imply changes in the interests of consumers. Experience becomes a commodity and its economic value increases according to its quality. Pine & Gilmore (1999) identify two dimensions: consumer participation, which moves between the extremes of passive and active, and the connection with the environment, which can be absorption or assimilation. Based on these dimensions, the experience can be entertainment (passive and absorptive), educational events (active and immersive), escape (active with greater absorption) and aesthetics (passive and absorptive).

Finally, the authors propose some principles for experience design such as theming, harmonizing impressions with positive cues, eliminating negative cues, blending memories and activating the consumer's senses. The experience economy will grow through the "gales of creative destruction" (Pine & Gilmore, 1999), a concept addressed by

Schumpeter and which in context refers to the importance of experience innovation in changing business models. Experience innovation and design are driven by what is important to tourists in experiencing something new and meaningful, whether to engage more actively in a traditional passive experience or to offer the same experience in a different context (Hoarau-Heemstra & Eide, 2019). In this environment, a new consumer emerges who belongs to the "creative class" addressed by Florida (2003), for whom the co-creation of the experience plays a fundamental role in satisfying their needs.

Creative or experiential tourism responds to the needs of this new tourist. Although creative tourism has an essentially cultural nature, linked to the EUROTEx project that sought to preserve artisanal production by marketing local products to tourists (Sano, 2016), its essence in adding value to the offer through customization and differentiation from mass production has been extended to the management of the tourism offer in general in search of authenticity.

This innovative way of making and managing tourism has been evolving and is currently in its 4.0 stage where technologies have been integrated for the construction of hybrid experiences (Richards, 2022) that respond to the needs of travelers who are more aware of their actions, who want to be active participants rather than passive observers. However, the subject is still quite young and presents gaps that need to be filled for a better understanding of the field of study. Serrano-Leyva, Díaz-Pompa, et al. (2021) by reviewing the scientific production on creative tourism in Scopus identifies among the main lines of research, the creative experience.

The search for articles on tourism experience in the context of creative tourism in Scopus yielded a total of 33 articles. The keyword analysis allowed us to identify the main factors for the construction of experiences in creative tourism. Figure 3 shows the level of priority of each factor using the Occurrence-Strength of Links matrix.

Figure 3. Matrix of factors for the design of experiences in creative tourism



The development of creative industries and cities as an enabling space for the development of the modality. The co-creation of experiences, local culture and creative attractions in the conception of the offer. Planning at the destination level and its sustainability are the most relevant and addressed factors, which are therefore a priority for the implementation of creative tourism.

The active participation of tourists, the authenticity of the offer and the development of projects for creative tourism are identified as relevant and little addressed issues. These topics constitute research opportunities, the development of which are relevant contributions to a better understanding of creative tourism management.

They are peripheral topics, linked to research on the creative tourism experience: generation Y, tourism marketing, tourism management and product design.

CONCLUSIONS

The tourist destination Holguin, located in the northeastern part of Cuba, enjoys an excellent geographical position having within its limits beautiful beaches that constitute its main attractions. The tourist modality par excellence is precisely the Sun and Beach tourism. However, studies conducted by Palao Fuentes et al. (2021) show that this is in its consolidation stage and it is necessary to renew offers that rejuvenate the product's life cycle. Innovation is an opportune tool to face this challenge.

To begin planning creative tourism in Holguín, it is necessary to start by mapping the favorable resources for the design of experiences in line with this form of management. Taking into account the factors identified as most relevant, the destination has significant potential for the development of creative industries and the planning, design and development of the city as a fundamental space for creative tourism.

Holguín is a destination with an active cultural life. It is rich in resources with attractive potentialities. On a tangible level it has museums, theaters, art schools, parks and other infrastructures. However, every space is open to creativity, even in small establishments such as cafés, which belong to the private sector and have very particular characteristics according to their target market.

It is worth noting that the core of creativity in the context of offering experiences lies in intangible heritage. It is necessary to rethink the way tourism is done and to be in line with new trends. Here are some ideas for the design of creative products:

In the nervous center of the city is located the Provincial Museum La Periquera, where the historical memory of the people of Holguín is protected. Among its main attractions is the tunnel of love, a space that keeps the legend of Ana Sánchez Roblejo de Peláez and Serafín Irioste, protagonists of this 18th century myth:

She, a beautiful young woman recognized throughout the region; he, a simple volunteer officer who every afternoon made his tour right in front of the house. It is said that always at the same time the wife of Commander Agustín Peláez would appear through one of the balconies and her gaze would fall again and again on that uniformed gentleman who silently longed for her.

A large tunnel that served as a cistern for the San José and San Isidoro Churches, the Military Hospital, the Spanish Army Barracks and the forts located in the foothills of the Loma de la Cruz was witness to this love as genuine as it was forbidden, the conduit had in its interior multiple divisions that through thick iron doors isolated one sector from the other.

Doña Ana, dressed in the Andalusian style, after exchanging smiles and glances from the second floor of her mansion, had the habit of attending the masses sponsored in the San José Church, whose parish priest was the spiritual guide of her family.

This religious devotion and friendship that united her to the priest meant that no one was surprised that at the end of the services, the lady passed to the back of the altar and lost herself in the curtains of the confessional, a place that concealed a small stairway leading to the tunnel.

Half an hour later the lady would appear while smoothing her hair and arranging her clothes, but one day and for inexplicable reasons the fire alarm was heard, the divisional doors were hermetically sealed, the locks were opened and the water of the Marañón River flooded all its sections in a few minutes.

False Alarm! Rumor had it that some time later, the activities returned to normal, the passageway was again without water and while Agustín Peláez was going about his usual route, the lifeless bodies of Ana and Serafín were discovered.

Although there were no comments, it was described in the memories of the villagers that for many years in the grave of the young woman, buried at the foot of the hill of the cross, could be read on her tombstone: "A Doña Ana Sánchez Roblejo who could die in her bed full of virtues and died without honor, in the tunnel of La Periquera" (Domínguez, 2020).

A museum full of potential to offer creative experiences. The legend of the tunnel of love would have a greater impact on the consumer experience with the support of technology, as well as local artists. The story recreated with moving images, the reproduction of sounds in accordance with the story and even the theatrical representation of the couple in love at unexpected moments for the audience, can bring the experience to life. That suspenseful ending referring to the endurance of the young woman's screams in the tunnel, using this type of resources would have an impact on the memorability of the visit.

Another symbolic place is the Plaza de la Marqueta, built in 1848, with the purpose of commercializing objects, goods and services, it was the first market of the former Hato de San Isidoro and currently a central space in which it is possible to acquire different products or access to various services. The Plaza de la Marqueta is an ideal place for creative experiences, beyond the sale of products, it is an ideal space for tourists to observe the production of handicrafts and even try to create their own souvenirs. Achieving more tourist-community interactivity through activities such as modeling and the presentation of local artistic talent at the same time as the sale of handicrafts may be some alternatives.

In addition, visits to art schools where to exchange with young talents, to take traditional dance classes, give the possibility to feel local, to live useful and authentic experiences. Holguin has the strength of having Paradiso, a travel agency specialized in cultural tourism. However, the commercialization of this type of product requires new efforts. First, the creation of a digital platform that integrates the entire offer of the destination, allowing the co-creation of experiences and providing attractive information on tangible and intangible resources.

However, the development of creative cultural tourism requires good management. The link between culture, tourism, community and local government must be indissoluble in order to achieve sustainability from the economic, environmental and sociocultural dimensions. Efficient integration is needed among all the agents involved in the creation of the offer, whether public or private. They must all be in function of offering authentic experiences that do not erode the destination's resources.

Thinking about the development of creative tourism from an innovative perspective is an achievable challenge. However, to achieve it, it is necessary to eliminate the inadequacies in the planning, organization, control and monitoring of processes and the lack of comprehensiveness and vision regarding the levels of risk and deficiencies and innovative capacity (Presidencia de la República de Cuba, 2021) in the destination's organizations.

Despite the favorable conditions for a change oriented to an innovative organizational management that solves society's problems through science, there are many challenges. The main one is the need for a more flexible thinking within organizations, capable of promoting and assuming

the challenges and taking advantage of the opportunities of the environment. This requires scientific and administrative leaders capable of influencing the members of the organization and directing efforts towards the same direction marked by creativity and innovation.

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ANNEXES

Definition	Author	Features
Introduction to the market of a new good or a new class of goods; the use of a new source of raw materials (both product innovation); the incorporation of a new production method not experimented in a certain sector or a new way of commercially treating a new product (process innovation), or the so-called market innovation, which consists of the opening of a new market in a country or the implementation of a new market structure.	Joseph Schumpeter (1935)	Novelty
Innovation is the process of integrating existing technology and inventions to create or improve a product, process or system. Innovation in an economic sense consists of the consolidation of a new product, process or improved system.	Freeman & Soete (1974)	Novelty Economic impact
An innovation is a practical idea or object perceived as new by an individual unit or other type of adoption into a system.	Rogers (1983)	Novelty
Innovation refers to the process of providing ideas that can be used to solve any problem. Ideas for reorganization and cost reduction, putting in place new budgeting systems, improving communication or team product development are also innovations. Innovation is the generation, acceptance and implementation of new ideas, processes, products or services.	Kanter (1983)	Novelty Reproducibility
It is the adoption of an idea or new behavior for adaptation in the organization.	Damanpour & Evan (1984)	Novelty
Innovation is the specific tool of innovative entrepreneurs; the means by which they exploit change as an opportunity for a different business (...) It is the action of endowing resources with a new capacity to produce wealth. Innovation creates a 'resource'. There is no such thing until man finds the application of something natural and then endows it with economic value.	Drucker (1985)	Capacity Novelty Economic impact
Innovation is the production of new technological knowledge, different from invention which is the creation of some theoretical scientific idea or concept that can lead to innovation when applied to the production process.	(Elser, 1992)	Novelty
A process that includes the technical, design, manufacturing, commercial and management activities involved in the sale of a new product or the use of a new manufacturing process or equipment.	Rothwell (1992)	Novelty
In business, innovation is something that is new or significantly improved, done by a company to create added value, either directly for the company or indirectly for customers.	Business Council of Australia (1993)	Novelty Economic impact
Innovation includes not only new technologies, but also new methods and ways of doing things that might even seem irrelevant. Innovation manifests itself in a new product design, a new production process, a new way of selling, training, organizing, etc., so that innovation can occur in any activity of the value chain and thus the company can achieve sustainable Competitive advantage	Porter (1993)	Novelty competitive advantages.
Innovation, at the level of an individual company, could be defined as the application of ideas that are new to the company.	Gibbons et al, 1994	Novelty

Definition	Author	Features
Innovation is the transformation of knowledge into new products and services. It is not an isolated event, but a continuous response to changing circumstances.	Nelson (1997)	Novelty Dynamic capacity
A set of activities within a period of time and place that lead to the successful introduction to the market, for the first time, of an idea in the form of new or improved products, services or management and organizational techniques.	Pavón & Hidalgo (1997)	Novelty
Innovation is the complex process of bringing ideas to market in the form of new or improved products or services. This process is composed of two parts, not necessarily sequential and with frequent back and forth paths between them. One is specialized in knowledge and the other is mainly dedicated to its application to turn it into a process, a product or a service that incorporates new advantages for the market.	CONEC, 1998	Novelty Reproducibility
Innovation is the renewal and expansion of the range of products and services, and of the associated markets; the introduction of new methods of production, supply and distribution, communication; the introduction of changes in management, work organization as well as in working conditions and workers' qualifications.	COM (2003)	Novelty
Introduction of a new or significantly improved product (good or service), a process, a new organizational or marketing method in the company's internal practices, workplace organization or external relations.	OCDE 2005	Novelty Dynamic capacity
Innovation refers to a process that begins with a novel idea and concludes with its introduction to the market. Invention by itself is not an innovation	Freeman & Engel (2007)	Novelty
The process by which society extracts social and economic benefits from knowledge has become a must in any organization or institution, and even more so in developing countries where the adoption of this concept is fundamental for economic and social growth.	Ramírez, Martínez y Castellanos (2012)	Economic impact Dynamic capacity
Innovation is a broad concept that encompasses a wide range of activities and processes: markets, business activities, networks and competition, but also skills and organizations, creativity, and knowledge transfer.	OCDE, 2013	Novelty Dynamic capacity
Conversion of ideas and knowledge into improved products, processes or services for the market, in order to satisfy the needs of citizens, companies and public administrations.	Corma (2013)	Novelty Impacto
Process through which a company improves or creates new products, processes, ways of marketing and making organizational changes to adapt to the environment, respecting the environment and society, and above all, to generate sustainable competitive advantages over time to ensure its survival.	Seclén 2014	Novelty Competitive advantage Impact
New or modified entity. Realization or redistribution of value. Activities or processes that give rise to or are aimed at innovation.	Norma ISO 56000:2020	Novelty Impact
Process product that differs significantly from previous products and processes and that has been made available to potential users (products) or implemented in the organization (processes).	Manual Oslo: 2019	Novelty

Scientific Note

Sondondo Ayacucho Valley - Peru: Approach of a Tourism Based on Agrobiodiversity

Valle de Sondondo Ayacucho - Perú: Enfoque de un Turismo con Base en la Agrobiodiversidad

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Received: 2022-09-05

Accepted for publication: 2022-10-22

Published: 2022-12-31

ABSTRACT

The Sondondo Valley represents one of the most unique occupation territories in the southern highlands of the country, located in the Ayacucho region, Lucanas province; Given its longevity and the cultural processes linked to traditional agriculture, it would represent a productive space from the Pre-Hispanic era with roots that last to the present day (Kendall et. al. 2006, 2009, Aguirre 2009, Llalli & Tinoco 2010, Aparicio 2020). . Given its territorial extension with more than 5 thousand hectares of platform surface in current use (districts of: Aucará, Cabana, Carmen Salcedo and Chipao), a tourism initiative is proposed based on its potential for Agrobiodiversity, understood as the variety and variability of plants, animals and microorganisms of the earth that are important for food, as well as for agriculture and that result from the interaction between the environment, genetic resources and the management of the systems and practices used (FAO 1998). The proposed approach is based on a Sustainable Tourism matrix that includes four steps: research on the traveler, exploration of the territory, analysis of competition and co-opetition, finally the conceptualization of the tourist experience.

Keywords: Sondondo Valley, Agrobiodiversity, Sustainable tourism.

RESUMEN

El Valle de Sondondo representa uno de los territorios de ocupación más singulares de la sierra sur del país, emplazada en la región de Ayacucho, provincia de Lucanas; dada su longevidad y los procesos culturales vinculados a una agricultura tradicional, éste representaría un espacio productivo de época Prehispánica con una raigambre que perdura a la actualidad (Kendall et. al. 2006, 2009, Aguirre 2009, Llalli & Tinoco 2010, Aparicio 2020). Dada su extensión territorial con más de 5 mil hectáreas de superficie de andenes en uso actual (distritos de: Aucará, Cabana, Carmen Salcedo y Chipao), se plantea una iniciativa de turismo basada en su potencial de Agrobiodiversidad, entendida como la variedad y variabilidad de plantas, animales y microorganismos de la tierra que son importantes para la alimentación, así como para la agricultura y que resultan de la interacción entre el ambiente, los recursos genéticos y el manejo de los sistemas y prácticas empleadas (FAO 1998). El enfoque planteado se nutre a partir de una matriz de Turismo Sostenible que incluye cuatro pasos: investigación sobre el viajero, exploración del territorio, análisis de competencia y coope-tencia, finalmente la conceptualización de la experiencia turística.

Palabras clave: Valle de Sondondo, Agrobiodiversidad, Turismo sostenible.

INTRODUCCION

El Valle del Sondondo, ubicado al sur del Perú, constituye un testimonio único de la ocupación humana en los andes, desde hace 2,000 años este territorio viene siendo ocupado y modelado para la satisfacción de las economías campesinas hasta la fecha. La disposición de este sistema de andenerías es masiva a la actualidad y puede apreciarse a lo largo del río Sondondo y sus tributarios como son los ríos Negromayo y Mayobamba en un territorio montañoso- andino, entre los 3000 m.s.n.m hasta los 4500 m.s.n.m.

El sitio nos muestra una serie de usos de la tierra, adaptados durante años a las condiciones físicas y climáticas de la cordillera de los andes, evidencia de ello son las tecnologías de manejo agrícola y pecuario, únicas por su complejidad y diversidad en el área andina, atestiguándose actividades humanas que involucran el incremento de la producción de las praderas altoandinas a través de la ampliación de bofedales, permitiendo alimentar a grandes hatos de camélidos y con ello incrementar la producción de su fibra, esto se evidencia en los corrales prehispánicos diseminados mayormente en la puna de Cabana.

Estas estrategias de adaptación al medio fueron posibles gracias a la planificación detallada del territorio, evidencia de ello es la gran concentración de maquetas de piedra diseminadas en todo el valle. Todas estas singularidades se complementan con el valor asociativo del Valle del Sondondo, encontramos danzas milenarias asociadas a la resistencia andina colonial (Taky Oncoy), manifestaciones culturales vigentes asociadas a apus tutelares Osconta y el Karhuarazo, prácticas comunitarias productivas prehispánicas vinculadas a la dinámica territorial contemporánea, entre otros. De la misma forma, los agricultores/as conjugan un conjunto de saberes para planificar cada campaña agrícola, partiendo, principalmente de la observación de diversas señas que les permiten definir si se tendrá un año lluvioso o seco, con base a ello, deciden las fechas de siembra, el tipo de cultivos, las variedades a emplear, el diseño de los surcos para la siembra, entre otros. La presente propuesta se enmarca dentro de un modelo de Turismo Sostenible como una forma de preservar el ambiente agropecuario y conectar al turista con las costumbres andinas ancestrales relacionadas a la agricultura en andenes de filiación Prehispánica que conlleva características de una experiencia vivencial, todo el modelo se trabajara en la economía circular. Esta experiencia está diseñada para

las personas del segmento Millenials que buscan conocer nuevos e inexplorados lugares y realizar actividades al aire libre. La presente propuesta descansa en los tres pilares de la sostenibilidad turística, los cuales están representados en la conservación de los suelos y el agua, la belleza paisajística y otros servicios ambientales que proporcionan los andenes, la revaloración de los activos culturales tangibles e intangibles como son las festividades relacionadas al cultivo del "maíz" en los andenes, como: la "fiesta del agua" o la "fiesta de la rehabilitación de anden" y la siembra del "maíz", la "danza de las tijeras", la "gastronomía local" y los "saberes y conocimientos" de la agricultura tradicional; adicionalmente la inclusión social como parte fundamental del desarrollo turístico, generando así oportunidades de empleo con calidad y el alivio a la pobreza. Este producto busca que los visitantes actuales y potenciales tengan una experiencia turística sostenible y a su pleno alcance dando una alternativa mediante el turismo al desarrollo económico local y a la afirmación y revaloración cultural.

Características físico ambientales

La contaminación del aire es una externalidad negativa que está tomando una mayor importancia en la definición de políticas públicas en materias medio ambientales. Sin embargo, muchas veces no hay una clara relación entre las variables que explican la actitud, el conocimiento y el comportamiento medio ambiental propiamente tal. Según estimaciones del año 2012.

El departamento de Ayacucho comprende tres regiones climáticamente diferenciadas dadas las características de diferencia altitudinal y morfología del relieve, al norte en la fachada oriental andina se extiende la región montañosa de ceja de selva, con valles relativamente amplios y de sensación cálida; la otra región cubre el sector central de abrupta configuración y valles interandinos dominados por la cuencas del río Cachi y Pampas principalmente, y la región sur con predominio de planicies y montañas nevadas, con valles profundos, presenta un clima mayormente templado y seco donde está emplazado el Valle del Sondondo, la temperatura correspondiente en esta región alcanza niveles mínimos de 4°C aproximadamente, y niveles máximos de 22,8°C; salvo en ocurrencias de fenómenos como El Niño, que la temperatura desciende hasta -12°C, o La Niña con temperaturas de hasta -4°C, ocasionando heladas en casi todo el departamento.

En general este valle engarza áreas de puna y altiplanicies, con presencia de vertientes moderadas muy empinadas y

montañas altas hacia la margen derecha del río Mayobamba. Las unidades geomorfológicas más representativas se constituyen de: altas montañas, con geoformas que se encuentran sobre los 4000 m.s.n.m. de pendientes muy escarpadas, se encuentran en los límites del sector noreste del valle, las montañas menores, ubicadas principalmente en las vertientes del Mayobamba, este conjunto de montañas tienen una pendiente moderadamente empinada y cimas relativamente alomadas, se inician sobre los 2500 a 3000 m.s.n.m. la altiplanicie volcánica, esta unidad geomorfológica corresponde al sector de la cordillera de los andes, a una altitud que puede llegar hasta los 5000 m.s.n.m., está conformada por planicies que evidencian erosiones muy antiguas, y que actualmente constituyen superficies suaves ligeramente disectadas por quebradas pequeñas, litológicamente se aprecian rocas volcánicas conformadas por tobas brechoides y riolitas. La altiplanicie volcánica ondulada, comprende un área relativamente considerable del paisaje cultural, ubicadas en las zonas próximas a flujos hídricos, son planicies con ligeras ondulaciones cubiertas por rocas, estas constituyen depósitos que se acumulan al pie de las laderas, sobre pampas o terrazas, o continuos a ríos principales. Generalmente estas planicies están conformadas por material no consolidado, la altiplanicie volcánica disectada, domina una gran extensión en el sector centro y oeste del paisaje cultural, en los sectores con mayor altitud del valle del Sondondo, sobre los 3500 y 4500 m.s.n.m., está conformada por una litología de granos finos o elementos mayores angulosos de origen volcánico, cuenta con valles amplios debido a los procesos erosivos de desglaciación, así como áreas cubiertas por lagunas o antiguos escurrimientos superficiales, presenta frentes escarpados inestables con una geodinámica externa moderada. La colina moderadamente empinada, corresponde a laderas de pendientes moderadamente suaves, con ondulaciones donde se alojan cuerpos de agua y/o bofedales; se encuentran próximas a montañas de pendiente muy inclinada por lo que su constitución es principalmente de rocas calizas, granodioritas y gabros (de alta resistencia). El valle fluvio-glacial, esta unidad está referida a las terrazas contiguas que van por encima de los fondos planos de valle fluvial, corresponden a depósitos amplios de arena y grava con moderada estratificación que brindan una apariencia de "U". Los extremos de estos valles presentan frecuentemente depósitos fluvio-glaciares o morrénicos (MINCUL 2017).

Hidrográficamente el valle se encuentra irrigado por los ríos Negromayo, Mayobamba y Pichjane, que conforman las nacientes del río Sondondo, el cual discurre de sur a norte por la provincia de Lucanas hasta desembocar como afluente

en el río Cangallo, quien es a su vez afluente del Pampas (divisor natural con el departamento de Apurímac).

Cobertura vegetal

Considerando los rangos altitudinales (3000 - 4500 m.s.n.m.) con una diferencia de 1500 metros, el valle cuenta con una diversidad biológica característica de estos pisos altitudinales y clima, en los sectores más bajos predominan vegetación de porte arbustivo con un alto follaje de hojas verdes, las mismas que van modificando su estructura conforme asciende el relieve, hasta llegar a las zonas más altas donde predomina la formación de tólares y pajonales que pueden lograr alturas de 0.90 m, y césped de puna en los sectores más inclementes. El sector de valle interandino constituye el territorio modificado para dar paso a la producción agrícola, en algunos casos con vegetación exótica que se adaptó a un clima más templado .

La vegetación arbustiva y arbórea está representada por arboledas diseminadas de "molle" *Schinus molle* L., *Proustia cuneifolia* D.Don principalmente, *Gynoxys longifolia* Wedd., entreverados con algunos cactus como: *Corryocactus quadrangularis* (Rauh & Backeb.) F.Ritter, *Austrocylindropuntia subulata* (Engelm.) Backeb., *Echinopsis peruviana* subsp. *puquiensis* (Rauh & Backeb.) Ostolaza. Por encima de los 3500 m.s.n.m. se aprecian matorrales de consistencia coriácea como la "tasta" *Escallonia myrtilloides* L.fil., "taya", *Baccharis tricuneata* (L.fil.) Pers., "tola" *Parastrephia lepidophylla* (Wedd.) Cabrera, principalmente. El área de puna y césped de puna ubicada entre los 3800 y 4500 m.s.n.m. predominan gramíneas adaptadas al clima característico de estas elevaciones. Entre las especies que dominan este territorio se observan el "crespillo" *Calamagrostis vicunarum* (Wedd.) Pilg., "pacu pacu" *Aciachne pulvinata* Benth., esta área cubre más del 50% de la vegetación considerándose importante para a economía pastoril en la zona.

La vegetación en el Valle del Sondondo describe claramente las diferencias de elevación y suelo existentes en este territorio. Se denotan las texturas de la cobertura vegetal suaves en las partes más bajas de valle, hasta las afiladas espigas del pajonal y césped de puna en las planicies más altas. Esta cobertura natural de puna ha consolidado en el poblador del valle el aseguramiento del alimento en la crianza de camélidos y otras especies como la caprina y ovina, desarrollando una actividad pecuaria relativamente próspera, garantizando su permanencia debido a las fuentes de agua que fluyen del subsuelo de forma espontánea ((MINCUL 2017).

Sistema de andenes

Tradicionalmente se considera que el primer momento de estandarización de los espacios agrarios aterrazados se produjo durante el imperio Wari (600-1000 d.C.) en el área central de lo que hoy es el territorio peruano. Posteriormente, se apunta a una nueva expansión del aterrazamiento, acompañada de un desarrollo tecnológico en el Imperio Inca (1450 -1532 d.C.). Además se ha generalizado la idea de que esta estandarización de las terrazas en el Sur de los Andes peruanos se debe tanto a la expansión de los sistemas imperiales como a la necesidad del cultivo del maíz (Schreiberg, 2000) (Kendall & Abelardo, 2009). En este contexto se reporta que la evidencia más antigua de la presencia de andenerías en el Valle del Sondondo correspondería al periodo Intermedio Temprano adjudicado a la cultura Huarpa (100 d.C – 500 d.C.) con una consecuentes mayor expansión e impacto durante el Horizonte Medio correspondiente a la cultura Wari (500 d.C. – 900 d.C.), teniendo mejoras sustantivas durante la ocupación Inca (1470 d.C. – 1535 d.C.) en este territorio. En referencia a la unidad territorial se evidencia una notoria transformación del mismo constituyéndose en un espacio complejo compuesto tanto por las unidades agrarias andenes y terrazas, espacios de almacenamiento, sitios de ocupación y piedras maqueta talladas.

Producto de las investigaciones de corte arqueológico iniciadas en la década del 90 del siglo pasado se categorizaron 04 tipologías, esto, según las características físicas y estructurales de las terrazas, esta categorización realizada por la Dr. Ann Kendall asigna una cronología más o menos determinada a estas 4 tipologías de andenes; donde el tipo 1 se asociaba a la cultura Inca, el tipo 2 a las culturas Wari y Pre-Incas. El tipo 3 a las culturas anteriores al imperio Wari y el tipo 4 no presentaba adscripción cronológica clara (Kendall y Abelardo, 2009). Esta asignación tipológica de amplios sectores de terrazas y andenes en el valle con cronologías tan amplias, no parecían reflejar la realidad de las transformaciones del paisaje agrario del valle. Este sistema de andenerías ha continuado utilizándose durante la época de la Colonia (Siglos XVI – XIX) llegando hasta nuestros días. En ese largo camino de más de 2000 años, la extensión y el uso intensivo de la totalidad de estos andenes han ido progresivamente disminuyendo debido a factores derivados del despoblamiento, emigración, violencia política, cambio climático, mercado, debilitamiento de las organizaciones tradicionales, entre otros factores. El sistema de andenerías y terrazas agrícolas se encuentran dispuestos a lo largo de las laderas bajas y medias de

los valles del Negromayo y el Mayobamba (afuentes del Sondondo) y el mismo valle del Sondondo.

Los andenes del Valle del Sondondo son mayoritariamente asociados a sistemas de regadío, aunque también existe en las partes más altas, andenes de secano, es decir utilizados solo en tiempo de lluvias. En la actualidad se usan mayoritariamente los andenes que están asociados a los sistemas de regadío enmarcados en una amplia red de canales irrigación.

La organización social también se encuentra tamizada por la presencia de los ayllus, los cuales constituyen colectividades emparentadas por vinculaciones o filiaciones de parentesco de origen prehispánico. Mediante esta organización se planifica y distribuye actividades vinculadas a la producción agrícola, el trabajo urbano y las festividades. Si bien su presencia se ha ido retrayendo durante el último siglo aún continúa vigente en el distrito de Cabana. La existencia actual de los territorios comunales en el Valle del Sondondo en los distritos de Chipao, Cabana, Carmen Salcedo y Aucará tienen su origen en el sistema de ayllus, manteniéndose la actividad comunal para el trabajo agrícola, vía el uso del sistema de “minka” (trabajo colectivo para un bien común), promovida por las comunidades campesinas del valle.

Tabla 1. Características de los andenes en la tipología propuesta por A. Kendall

TIPO	Perfil de la plataforma	Muro de contención	Riego	Factores distintivos
1. Andén	Casi horizontal	Inclinado hacia el interior	Generalmente con irrigación	Estratos interiores con capas de suelos diferenciadas. Cascajo detrás del muro de contención.
2. Andén	Casi horizontal	Vertical	Con y sin canales de irrigación. Actualmente muchas son terrazas de secano.	Relleno de algunas piedras detrás de la cimentación. Estratos interiores con capas de suelos diferenciadas.
3. Andén,	Inclinado	Rústico con un muro de contención de dos o tres hileras de piedra	Sin irrigación Mayormente terrazas de secano	Pocas piedras en los rellenos de las capas internas de suelos.
4. Terraza de labranza	En pendiente pronunciada	Algunas piedras o vegetación retienen los suelos	Sin irrigación	Formada por erosión y apisonamiento en alto declive

Proceso cultural

A continuación se citan algunos investigadores que realizaron inferencias respecto al tema: Según González Carré (2007) el periodo Precerámico en esta parte de Ayacucho, sería aparentemente hasta más temprana de las que reporto MacNeich en Pikimachay en Huamanga-Huanta, debido a que ofrecería mayores y mejores condiciones por sus características físicas y la potencialidad de recursos; igualmente los reportes de Cavero y Pareja (2003) refieren, que en la Pampa Galeras se encuentra una pequeña cueva llamada Qishuarchayoq, ubicada en la margen derecha de un antiguo curso de agua dentro de la actual comunidad de Cabana, en ella se encontraron evidencia humana de un establecimiento ocupacional.

De acuerdo a alcances del proyecto PRODERN (2011) se han podido identificar evidencia aparente de ocupación humana por el establecimiento de abrigos rocosos y cuevas existentes en la margen derecha del río de Sondondo en la zona conocida como Quñuylla o Ñañulla, donde se evidencia la existencia de petroglifos en diversas representaciones en un frente rocoso; asimismo se observa la presencia de material lítico y una punta de proyectil en el sitio de Hualloco.

Durante el Horizonte Temprano (1500 a.C. – 100 d.C.), se tiene escasa información respecto a las características de la ocupación humana en esta parte del valle del Sondondo. Se toma como referencia el trabajo de Aramburú (2003) que reporta la presencia de alfarería con cerámica inciso con rasgos pre chavinoides, las mismas que deberían estar indicando el principio del Periodo Inicial en la cuenca media del río Sondondo. No se ha podido identificar a la fecha evidencia material de la ocupación asociada a la “época Chavín” en el valle.

Durante el Intermedio Temprano (100 años D.C. – 600 años D.C.) se inició la construcción de los primeros sistemas de andenerías (PRODERN 2011), esto en el marco de la búsqueda y ampliación de la frontera agrícola; las primeras construcciones de andenes se dan teniendo cierto grado de desarrollo en las técnicas constructivas, en la práctica de la ingeniería agrícola e hidráulica, entre otros. Es a partir de este periodo donde empezarían a tener vigencia los apus tutelares de Huachwayserca (Aucará), Qarwarazu (Chipao) Osqonta (Cabana), Aqaymarca (Andamarca).

Durante el Horizonte Medio (600 años D.C. – 900 años

D.C.) La influencia de Wari permitió un aprovechamiento de los diversos recursos del Valle del Sondondo, por lo que se le asocia con conglomerados poblaciones importantes como Qinkamoqo en Cabana y Caniche (Andamarca). Las condiciones climáticas adecuadas y la presencia masiva de andenes a lo largo del valle han permitido un incremento exponencial de la producción agrícola. Razón por la cual se habría producido la ocupación Wari para la explotación y obtención de los recursos en la zona (Schreiber 1991). Según los estudios de Schreiber (1991), se dio en este horizonte cronológico un aprovechamiento de los recursos naturales para satisfacer las necesidades alimentarias de las poblaciones del valle. Esta investigadora propone una organización para el almacenamiento de los excedentes de la producción en los tambos de Qeqa, Andamarca, Qinkamoqo y otros como en la microcuenca del río Mayo Luren (afluente del Sondondo). Para el caso de la puna se propone que para este periodo se iniciaría y potenciaría la actividad de producción de los camélidos tanto para el transporte (llama), fibra y carne (llama y alpaca) (PRODERN - 2011).

Durante el Intermedio Tardío (900 años d.C. -1470 años d.C.) se evidenció una ocupación humana a nivel de “aldeas de agricultores”, caracterizadas por ser pequeñas (Schreiber 1987), estas se ubican entre los 3000 a 3600 msnm. Las viviendas eran de forma circular, construidas con piedras talladas unidas con barro, las mismas que se disponían sin aparente orden, continuando la explotación de los recursos de la zona y la infraestructura vinculada a la agricultura intensiva. Para el caso de la parte de la puna, según los datos de (Cavero 2010), las ocupaciones humanas fueron más restringidas y estaban vinculadas a la presencia de aldeas de ganaderos. El decaimiento de la influencia Wari podría haber incidido en el resurgimiento de sociedades locales a lo largo del Valle del Sondondo y alrededores.

El Horizonte Tardío (1470 d.C. – 1535 d.C.), según González Carré (2007), es el inicio de la conquista de la actual región Ayacucho por parte de los Incas, ello fue posible luego del triunfo del Inca Pachacutec sobre la Confederación Chanca. Para esto, toda la región tuvo una gran importancia económica y militar, en cuanto era un territorio donde se concentraban diversos recursos naturales.

De acuerdo a los datos de Cavero (2010) para la provincia de Lucanas, los sitios Inca más representativos serían Pulapucu, Aucara, Quecca, San Pedro, Tambo de Quillkata

y los Ushnus de Osqonta, Wamanillo, Llakata, Incaperqa, entre otros. Su locación no fue fortuita, sino motivado por el interés de obtener a través del tributo los recursos que producía la zona.

Para el periodo Colonial las zonas de Lucanas y Soras tuvieron presencia de encomenderos, proceso que duró pocos años, pero sirvió para transformar la ocupación sostenible que se venía llevando en el prehispánico. Las encomiendas estuvieron presentes en la zona, fueron distribuidas entre los españoles y dados al manejo agrícola y ganadero. A la fecha se evidencia una ocupación continua de transformación de un espacio agreste a un territorio con las mejores aptitudes con espacios adecuados para la productividad agrícola y pecuaria. Las evidencias de esta ocupación datan de tiempos prehispánicos y se asocian a las dinámicas vinculadas a la productividad: andenes, canales y corrales; asimismo, el valle contiene otros elementos como sitios arqueológicos, red de caminos prehispánicos y espacios sagrados que hacen de este espacio único en el país.

METODOLOGIA

Ámbito de estudio

El Valle de Sondondo se ubica en la zona centro sur del Perú y parte central del departamento de Ayacucho de la provincia de Lucanas, entre las altitudes de 3,000 a 4,500 por encima del mar y las microcuencas hidrográficas formados por los ríos Sondondo, Negromayo y Mayobamba enmarcados en 04 distritos: Aucará, Cabana, Carmen Salcedo (Andamarca) y Chipao.

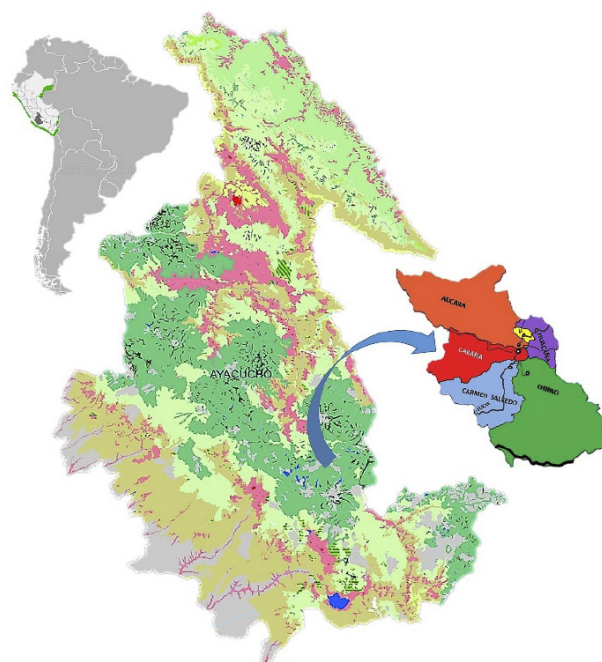
Este territorio comprende tres unidades territoriales: 1). Altiplanicie de Cabana, ubicado en la parte noroeste del distrito de Cabana, 2). Andenerías de Sondondo, emplazado en la parte sureste del distrito de Aucará, pasando por el distrito de Cabana, llegando hasta la parte norte del distrito de Chipao. 3). Andenerías y bofedales en Negromayo, ubicado en la parte norte del distrito de Carmen Salcedo (Andamarca).

Metodos

Se aplicaron los principios lingüísticos a través de la comunicación y la ecuación personal asociado a la analogía etnográfica la cual nos permitieron identificar los atributos turísticos enmarcados en la Agrobiodiversidad. La observación directa In situ, así como entrevistas, uso de

fichas y encuestas nos permitieron graficar el interés de la población local para el desarrollo turístico como fuente de ingreso indirecto, esto a partir de los atributos conferidos a su agricultura ancestral y las prácticas de ganadería.

Figura 1. Ubicación del Valle de Sondondo, Ayacucho - Perú



RESULTADOS

Actualmente este recurso turístico está inventariado y publicado en SIG MINCETUR, ostentando Jerarquía 2, y enmarcado en el proceso de obtención de Sello Safe Travels. Las Andenerías de Andamarca como recurso turístico está incluido en el Circuito turístico Valle del Sondondo y tiene la característica de ser Principal (Ancla). La vocación turística de la ZDT Ayacucho Sur está enfocada en la cultura viva relacionada a las actividades agrícolas en andenes Prehispánicos. La zona recibe flujo de visitantes especialmente nacionales que buscan espacios naturales andinos únicos e inexplorados. El sistema de andenerías de filiación Wari (Horizonte Medio 600 - 900 d.C.) caracteriza a una tecnología que ha permitido ampliar la frontera agrícola convirtiéndolo en el mayor complejo de andenerías de toda la región Ayacuchana. Tiene como complemento lugares propicios para el avistamiento de muchos ejemplares del "cóndor andino", festividades relacionadas al cultivo del maíz en el andén como es el caso del Yaku Raymi (limpieza de acequias en el que se aprecia la danza de las Tijeras, reconocida

como Patrimonio Cultural Inmaterial de la Humanidad por UNESCO), El Hatun Pata Tarpuy Raymi (fiesta de la Rehabilitación del andén agrícola y la siembra del maíz).

Los pobladores del Valle de Sondondo despliegan esfuerzos y voluntades a fin de llevar adelante el emprendimiento con una asociatividad que los congrega para tal propósito, en este caso concreto la Asociación para el Desarrollo Turístico y Cultural de Andamarca - ADETURC agrupa a emprendedores turísticos de la localidad toman la iniciativa y de manera proactiva en coordinación con instituciones públicas del sector turismo y gobierno local impulsan esta alternativa de desarrollo. Próximamente el lugar será declarado como Paisaje Cultural por el Ministerio de Cultura en la Categoría de VIVO porque conserva una función social activa en la sociedad contemporánea estrechamente vinculada al modo de vida tradicional donde se expresa la continuidad de las actividades agrícolas desde épocas Prehispánicas hasta la actualidad, producto de un conjunto de manifestaciones culturales singulares. Los andenes son centros de Agrobiodiversidad. Se tiene para el desarrollo de ventajas competitivas antes que ventajas comparativas.

Es importante resaltar la integración de la infraestructura agrícola y vial en la zona, tal fin conlleva al acceso de los diversos recursos agropecuarios no solo dentro del valle sino en la costa y en otras áreas serranas colindantes. Dicha integración se mantuvo en la época de la Colonia hasta mediados del siglo XX donde se inician la construcción de las carreteras que profundizan la integración con las ciudades de Puquio y Huamanga. Destacan gracias a diversos documentos históricos la referencia de sociedades como los Rukanas, Chipasmarcas, Soras, entre otros; de estos nombres derivan mucha de las toponimias locales existentes hasta el día de hoy.

En referencia a la fauna doméstica, existe una asentada especialización en la crianza de camélidos sudamericanos la cual evidencia una tradición milenaria que va desde la caza, pasando por su domesticación, hasta su crianza intensiva y especializada. Es desde la época Wari (600 años d.C. – 900 años d.C.) hasta la época Inca (1470 años d.C. – 1535 años d.C.) en que se asocian la construcción de un sistema de corrales para la crianza del ganado, vinculado a un proceso tecnológico de ampliación de la frontera de bofedales como forraje principal de llamas y alpacas, derivando en el mejoramiento genético de la fibra de alpaca. Durante la Colonia (siglos XVI – XIX), este

manejo genético de la fibra comenzó progresivamente a perderse por la intrusión de ganado ovino y vacuno. Actualmente, los pastores buscan recuperar su potencial genético, por lo que trabajan programas de mejoramiento basado en técnicas ancestrales que permitirá obtener nuevamente una fina fibra de alpaca.

Los pastores identifican los respectivos manantes de agua, acondicionando una qocha con diques artesanales y con champas (trozo de tierra con pasto), permitiendo almacenar el agua que será distribuida por los canales regulando el flujo de agua que permitan la ampliación del bofedal. A este proceso los pastores del Valle del Sondondo lo denominan cosecha del agua. Los mejores ejemplos de cosecha del agua los podemos apreciar en las zonas de: Chuycuñaapampa (zona alto andina del distrito de Cabana) y el Huayllawarmi (zona alto andina del distrito de Carmen Salcedo).

Otra de las evidencias materiales de uso y manejo del territorio altoandino en el Valle del Sondondo es la utilización de corrales para ganado camélido. A la fecha nos permite constatar el carácter intensivo y complejo del mismo, y cómo su distribución estuvo directamente asociada a las áreas de ampliación de bofedales desde tiempos prehispánicos. Destaca la concentración de estos corrales en la zona de Chuycuñaapampa ubicada en el distrito de Cabana. Se considera que los más pequeños pudieron ser centros de empadre; y los “corrales” rectangulares pudieron haber sido utilizados en el Chaccu.

Imagen 2. Preparación del terreno Agrícola



Imagen 2. Rehabilitación del andén Agrícola, festividad del Hantun pata tarpuy raymi (Foto A. Palomino)



Imagen 3. Sistema de andén Tipo 2, Andamarca (Foto E. Suclli)



Expresiones y manifestaciones culturales

Además de ser un territorio donde se ha manifestado una ocupación humana intensiva gracias a la transformación del medio; se ha convertido en escenario donde el imaginario colectivo de las poblaciones pasadas y presentes ha creado espacios y elementos sagrados muy importantes en la cosmovisión del poblador. En principio destaca la presencia del Apu Osconta (en las nacientes del río Negromayo), el cual constituye la expresión cultural más importante para las comunidades alto andinas de Cabana, posee un importante valor sagrado, así como múltiples

evidencias de origen prehispánico vinculadas al aprovechamiento del suelo para la actividad pecuaria.

En general estas expresiones culturales están asociadas a prácticas de pago tanto para los ganaderos, agricultores y grupos vinculados como los danzantes de tijeras, estos últimos realizan el “pago” no solo en el contexto natural del sitio sino también en las plazas de los centros poblados, así como las torres de las iglesias, estos pagos son usualmente acompañados de un cuerpo de músicos (violínistas, arpista y el propio danzante). El culto a los Apus depende de la ubicación de la estancia o moya, por lo que se “paga” a la montaña más próxima con el fin de protección y fertilidad. Los pagos hechos en contextos agrícolas incluyen un contenido basado en elementos de celebración como la “coca” y el vino, asimismo alimentos como la “quinua” y el “maíz”.

Imagen 4. Apu Osconta 4100 m.s.n.m. (Foto E. Suclli).



Red vial

Este territorio evidencia una conectividad y accesibilidad desarrollada antes de la presencia hispana, gracias a una red de caminos de origen prehispánico, articulando no solo longitudinalmente el valle y sus afluentes sino los diversos pisos ecológicos. En general está integrado bajo una sola concepción del territorio que fueron articulados por vías comunicativas cuyos orígenes probablemente estén asociados a la época Wari (Horizonte Medio: 500 d.C. – 900 d.C.) y que durante la época Inca con el Qhapaq Ñan (Horizonte Tardío: 1457 d.C. – 1535 d.C.) tuvieron su mejor manifestación. Estas redes viales no solo interconectaban

los diferentes pisos ecológicos del valle, sino que lo articulaban a la red de caminos hacia la costa y el Cusco. Destaca el camino Inca principal que viniendo de Nasca (en la costa) cruza las Pampas Galeras y pasando por el Cerro Osconta (distrito de Cabana) desciende hasta Aucará y continúa camino hacia Ccecca (distrito de Chipao) y desde allí a Soras y Sondor (Andahuaylas) rumbo al Cuzco. De este tramo principal se derivan ramales secundarios que conectan con el valle del Negromayo y el Mayobamba, afluentes del “Valle del Sondondo”.

Imagen 5. Qhapaq ñan o camino Inca (Foto E. Suclli).



Sitios arqueológicos

Como consecuencia de la transformación del territorio, que se convierte de un espacio inhóspito en uno acondicionado para una vida permanente, se inició una ocupación humana intensiva en el “Valle del Sondondo”. Evidencia de ésta son los diversos sitios arqueológicos dispuestos en los distritos de Cabana, Carmen Salcedo (S.A. Caniche), Chipao y Aucara. Estos sitios arqueológicos se ubican en las zonas agrícolas y en la puna, ambos están asociados a la actividad ganadera. Las evidencias más antiguas están vinculadas a la ocupación en la zona de puna dedicada a la caza y la recolección.

Imagen 6. Sitio Arqueológico Caniche, Carmen Salcedo (Foto E. Suclli)



Elementos arqueológicos aislados

Estas se evidencian fundamentalmente por la presencia de rocas líticas con signos de ser tallados, que denominamos como maquetas líticas. Las formas talladas en las maquetas indicarían que en el “Valle del Sondondo”, la actividad productiva agrícola estuvo planificada y respondía a una organización del territorio. Destaca como un buen ejemplo de planificación o sistematización de la actividad agrícola la presencia de dichas maquetas líticas que evocan diseños asociados a la actividad. Estas maquetas estarían asociados a la época Wari (Horizonte Medio de 500 d.C – 900 d.C.).

Infraestructura colonial

En general, en todas las capitales de distrito del Valle del Sondondo se conservan las diversas expresiones materiales de la infraestructura colonial y republicana, en especial iglesias, capillas, casonas, etc. En lo que respecta a las casonas apreciamos que diversas viviendas aún conservan el estilo colonial-republicano de los balcones, ellas se encuentran en los alrededores de la plaza principal. En lo que respecta a Patrimonio Cultural de la Nación encontramos el templo de la Virgen Inmaculada Concepción de Aucará, este templo posee valor histórico, pues la edificación data del siglo XVII, asimismo posee valor arquitectónico, ya que es un ejemplo de arquitectura religiosa de la época, éste mantiene el sistema constructivo utilizado en dicho periodo: adobe en sus muros, piedra en las torres del cam-

panario, etc. Vale mencionar que alrededor del templo surgieron numerosas expresiones culturales asociadas al culto de sus santos patrones: La Inmaculada Concepción, San Miguel Arcángel y en el siglo XX se agregó el culto a Señor de Untuna, lo que convierte al templo en un santuario regional.

Imagen 7. Templo de la Virgen Inmaculada Concepción de Aucará (Foto E. Sucilli).



Rituales tradicionales o asociativos

Presenta una amplitud de festividades que están vinculadas a la dinámica territorial y cultural de dicho espacio, en primer plano se tiene la fiesta matrimonial, la cual involucra un proceso de tres etapas de rituales separadas; a través de los cuales se legitima una unión marital: el Rimaycuy o Huarmi - Orccuy (pedir la mano), Iglesiapi casaracuy (matrimonio religioso), Municipalpi casaracuy (matrimonio civil). Los Carnavales que tiene su inicio con una danza ritual con flauta y tinya; la fiesta se inicia el domingo con la participación del “Niño Víctor”, patrón del pueblo, paseando por la plaza mayor y luego se dirigen a la loza deportiva las comparsas, y participan en el concurso, los participantes se dan latigazos en la pantorrilla con huara. Esta costumbre se denomina “chejollo”, este concluye el día miércoles de ceniza, dando gracias y recibiendo los tres latigazos en nombre de la trinidad. La fiesta del agua la cual se inicia antecediendo a las actividades agrícolas en el mes de setiembre, representa una ceremonia de fertilidad de la tierra, pero también es una fiesta de integración de la comunidad, se divide en dos partes: una que se realiza en la periferia del pueblo y otra en el mismo pueblo, los actos

rituales de la periferia tiene que ver con el sistema de riego, la organización del evento se realiza desde el 20 al 26 del mes de agosto, todos los años se organiza con la comisión central de administración de agua, conformado por la junta de regantes o usuarios del sector Negromayo, lado occidental y los regantes del sector de Vizca lado oriental, la comisión está conformada en grupos para cumplir sus funciones, existiendo una serie de cargos como el yacu alcalde (administrador y distribuidor del agua).

El Pucllay en Cabana, este se inicia desde el primero de enero, todos los martes y viernes en las noches se enfrentan en “chiccollunacay” y “huacctanacuy” (duelo de látigos y ponchos) los jóvenes del barrio de abajo y barrio de arriba. Desde muchos días antes de carnavales las huayllachas y la huifalas salen en las noches, mientras que van preparando el plato típico de “La Hulla”. En Cabana se celebran tres días de carnavales, iniciándose con el “yaya pucllachi” (juego para el señor cura), el día domingo, primer día de carnaval, venían los representantes de los anexos de Huaycahuacho y Sondondo a la casa cural, trayendo los mejores productos de sus chacras como un regalo para el señor cura, entraban bailando y cantando con sus respectivos tinya y flauta, luego delante del señor cura se retaban en duelo de “chiccollunacuy” terminando la ceremonia, retornaban a sus estancias (MINCUL 2017).

CONCLUSIONES

El Valle del Sondondo, constituye un testimonio único de la ocupación humana en los andes, desde hace 2 mil años este territorio viene siendo ocupado y modelado para la existencia humana. El lugar muestra una serie de usos de la tierra, adaptados durante años a las condiciones físicas y climáticas de la cordillera andina, evidencia de ello son las tecnologías de manejo agrícola y pecuario, únicas por su complejidad y diversidad en el área andina. El valle está reconocido como Patrimonio Cultural de la Nación R.D.N. N° 496/INC del 31.05.2002 y la R.D.N. N° 197/INC del 02.04.2003.

El sistema de andenerías del valle Sondondo constituye la respuesta tecnológica más adecuada para transformar el medio físico con fines agrícolas. Estos andenes han posibilitado ampliar la frontera agrícola mayoritariamente en las laderas bajas y medias del valle. La disposición de este sistema de andenerías es masiva hasta el día de hoy y puede apreciarse a lo largo del río Sondondo y sus tributarios como el Negromayo y el Mayobamba.

La práctica agrícola en el Valle del Sondondo, es funcional al aprovechamiento de la variedad de pisos ecológicos, siendo una práctica de carácter endogámico basado en filiaciones de parentesco dentro de un ámbito comunitario. El carácter comunitario de la organización agrícola se manifiesta en el funcionamiento de comités de riego, el cual representa un sistema de tenencia y manejo territorial de orden colectivo, los cuales se encuentran organizados dentro de una junta de regantes en coordinación con la comunidad campesina, estableciendo el orden y la planificación del riego.

AGRADECIMIENTOS

A toda la población Sondondina por su apoyo y acompañamiento durante los trabajos de campo, nuestro amigo Juan Andia autor del libro el Valle de Sondondo cuna del Cronista Huaman Poma de Ayala, quien nos alcanzó importantes información y datos de las manifestaciones culturales de este prodigioso lugar.

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Vol. 18, Nº2, Julio - Diciembre 2022

RIAT

Revista Interamericana de Ambiente y Turismo
Interamerican journal of Environment and Tourism

ISSN 0717-6651 versión impresa
ISSN 0718-235X versión online

riat.utalca.cl
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