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Articles and essays

Potentialities of Geotourism to Create a New Tourism Segmentation in Brazil

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Abstract

Tourism as an economic activity presents itself in segments, attributing who produces, who distributes, and who consumes the services in a given space. Ecotourism and Cultural Tourism are among already recognized segments. Geotourism is proposed for a new segment which values natural and cultural heritage by visiting and interpreting abiotic attractions. We therefore sought to discuss Geotourism as a tourism segment under the auspices of the Ministry of Tourism's (MTUR — *Ministério do Turismo*) theoretical framework. For this purpose, bibliographic and documentary research of the expressions "geotourism" and "tourism segment" were conducted in scientific and technical productions on the platforms Google Scholar, Scopus, and Brazilian Digital Library of Theses Dissertations (BDTD). The results demonstrate that scholars did not reach consensus on whether Geoturism is a tourism segment, but the MTUR's assumptions support its recognition and prioritization in future public policies of regionalization and sustainability. This study's data are from the MTUR in partnership with government agencies and teaching and research institutes, among others. These data could be used to list and validate Geotourism as a tourism segment with public policies that encourage research, especially related to commercialization and demand profile.

Keywords: Tourism Segmentation. Tourism Market Segmentation. Geotourism.

Resumo

Potencialidades do Geoturismo para a Criação de uma Nova Segmentação Turística no Brasil

O turismo como atividade econômica, se apresenta através de segmentos turísticos, agregando quem produz, quem distribui e quem consome os serviços em um dado espaço. Há segmentos já reconhecidos, como Ecoturismo e Turismo Cultural, o Geoturismo surge como uma proposta de um novo segmento, que valoriza os patrimônios natural e

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cultural, por meio de visita e interpretação de atrativos abióticos. Neste sentido, propõe-se a discussão do Geoturismo enquanto segmento turístico sob os auspícios do marco teórico do Ministério do Turismo (MTUR). Para tanto foi realizada pesquisa bibliográfica e documental das expressões "geoturismo" e "segmento turístico" em produções científicas e técnicas nas plataformas *Google Scholar, Scopus* e Biblioteca Digital Brasileira de Teses e Dissertações. Os resultados demonstram que: não há um consenso entre estudiosos do Geoturismo se é um segmento turístico, mas os pressupostos do MTUR dão subsídios para que seja reconhecido e prioritário nas políticas públicas de regionalização e sustentabilidade no futuro. Recomenda-se a construção de uma rede integrada de oferta e demanda geoturística, em níveis local, regional e nacional, para que o Geoturismo seja elencado e validado como segmento turístico, por meio de políticas públicas que estimulem mais estudos, em especial relacionados à sua comercialização e perfil da demanda.
Palavras-chave: Segmentação Turística. Segmentação da Oferta Turística. Geoturismo.

Resumen

Potencialidades del geoturismo para la creación de una nueva segmentación turística en Brasil

El turismo como actividad económica, se presenta a través de segmentos turísticos, agregando quién produce, quién distribuye y quién consume los servicios en un espacio determinado. Ya existen segmentos reconocidos, como el Ecoturismo y el Turismo Cultural, el Geoturismo aparece como una propuesta para un nuevo segmento, que valora el patrimonio natural y cultural, por medio de visitas e interpretación de atractivos abióticos. En este sentido, se propone discutir el Geoturismo como segmento turístico bajo los auspicios del marco teórico del Ministerio de Turismo (MTUR). Para la pesquisa, se realizó una investigación bibliográfica y documental de las expresiones "geoturismo" y "segmento turístico" en producciones científicas y técnicas en las plataformas Google Scholar, Scopus y Biblioteca Brasileira de Teses e Dissertações. Los resultados demuestran que: no existe consenso entre los estudiosos del Geoturismo si se trata de un segmento turístico, pero los presupuestos del MTUR otorgan subsidios para que en el futuro sea reconocido y prioritario en las políticas públicas de regionalización y sostenibilidad. Se recomienda la construcción de una red integrada de oferta y demanda geoturística, a nivel local, regional y nacional, para que el Geoturismo sea catalogado y validado como segmento turístico, por medio de políticas públicas que incentiven más estudios, especialmente relacionados con su comercialización y perfil de demanda.
Palabras clave: Segmentação Turística. Segmentação da Oferta Turística. Geoturismo.

Introduction

Tourism is an economic and social phenomenon (United Nations World Tourism Organization — UNWTO, 2020a) originated in the modern era and divided into economic and sociological aspects (Panosso, 2010). The first tends to be valued regarding productivity (employment, income, companies, etc.) while the second is valued regarding conservationism (natural and cultural).

Classifications of the tourism economy include the so-called "tourism segments." Among the numerous segments, a relatively recent movement seeks to consolidate activity in a new segment: Geotourism. Geotourism is an activity that aims to visit and interpret places with geological and correlated resources that,

added to the social, cultural, and historical aspects of the destinations, are configured as tourist attractions.

Beyond contemplation, Geotourism aims to attract people interested in obtaining additional information regarding natural and cultural heritage. Far from being purely a landscape appreciation visit, its local geodiversity approach focuses on building self-knowledge about the geological resources' particularities and characteristics. Geodiversity is understood as a "natural variety (diversity) of geological (rocks, minerals, fossils), geomorphological (landforms, topography, physical processes), soil, and hydrological elements, including its assemblies, structures, systems, and contributions for the landscape" (Gray, 2013) and as the main highlight in the practice of Geotourism.

Tourism researchers — e.g., bachelors in Tourism (Moreira, 2010; Coutinho, Urano, Mate and Nascimento, 2019; Bento, Farias, and Nascimento, 2020) — should debate and focus on understanding Geotourism as an independent activity in their scientific analysis, contributing to the thinking of Geoscience researchers — e.g., Geologists and Geographers (Bento and Rodrigues, 2010; Castro and Ruchkys, 2017; Romão and Garcia, 2017; Pereira, 2017; Barbosa and Aquino, 2020) —, commonly involved in the theme.

We therefore considered the theoretical framework of the Ministry of Tourism (Brazil, 2010a) regarding tourism segmentation in Brazil to examine if the practice of Geotourism can define it as a tourism segment, corroborating with other related research (Coutinho et al., 2019; Bento, Farias, and Nascimento, 2020). We emphasize that the appreciation of the environment and new trends and social, academic, and economic discussions elected Ecotourism – a segment recognized by the MTUR and the UNWTO – as a guide for actions, immensely privileging the issues – albeit important – of fauna and flora, that is, the conservation of biodiversity. The sustaining base of these landscapes (geodiversity) is thus undervalued, considered as the "forgotten half of nature conservation", that is, geoconservation (Sharples, 2002). Today's discussions and appreciation of elements were not perceptible from the ecotourism perspective.

Several scientific studies report on tourism from the perspective of geographers and geologists, who can demonstrate that geotouristic activity is a tool for disseminating information about the existing geodiversity. Geoturism improves the interpretation of the environment, the awareness of the importance of locations, and the search for conservating and maintaining natural heritage. Many studies show the progress of this theme, emphasizing recent bibliometric analyses (Moreira, 2010; Ruban, 2015; Pereira, 2017; Kuleta, 2018; Duarte, Braga, Marques and Sá, 2020; Herrero-Franco, Montalván-Burbano, Carrión-Mero, Apolo-Masache and Jaya-Montalvo, 2020).

Therefore, this article aimed to analyze Geotourism as a concept based on MTUR's tourism segmentation documents, seeking to clarify this activity's relevance with a theoretical-conceptual discussion about tourism segmentation.

Methodology

This study has an exploratory and qualitative approach. Bibliographic research was conducted on informational material, books, papers, and others that

discuss the studied subject (Prodanov and Freitas, 2013). Books, indexed magazine articles, literary productions such as dissertations and theses, and documents prepared by MTUR were examined to become familiar with Brazil's tourism segmentation.

To compose this study's theoretical basis, national and international studies available on the Google Scholar and Scopus platforms were used. The search criteria were the expressions "geotourism" and "tourism segmentation"; then, the associated terms "geodiversity", "geological heritage", "geoconservation", and "tourism market". The Digital Brazilian Library of Theses and Dissertations (BDTD — *Biblioteca Digital Brasileira de Teses e Dissertações*), some books available on Google Books, and printed books were also used as resource.

Additionally, documentary research was carried out, that is, the consultation of materials that did not receive analytical treatment. These documents are available in diverse sources, such as public agencies or private companies, and in several forms, including research reports, diagnostics, strategic plans, statistical tables, among others (Gil, 1991). Official MTUR documents were therefore analyzed regarding tourism segmentation, including the Conceptual Framework document (2006), the Tourism Regionalization Program — Brazil Itineraries (*Programa de Regionalização do Turismo — Roteiros do Brasil*) (Brazil, 2007) and the document Segmentation of Tourism and the Market (*Segmentação do Turismo e o Mercado*) (Brazil, 2010), among others, which were accessed from the official MTUR website.

Tourism Segmentation

Initial studies of tourism segmentation date back to the 1970s, seeking to defining types of tourists (Barretto and Rejowski, 2009). For Ansarah and Panosso (2010, p. 2):

> The idea of segmenting the tourist market, in any destination, has the same semantic meaning, namely: identifying people with similar affinities and desires who are willing to consume the same product. Tourist companies do this, so they can therefore better know their consumer and thus offer better products, captivating them.

For Beni (1998, p. 171), segmentation is a "statistical technique that allows decomposing the population into homogeneous groups, and also the marketing policy that divides the market into homogeneous parts, each with its own distribution channels, different motivations and other factors".

On the other hand, for Lovelock and Wright (2001), a segment corresponds to "a group of current and potential customers who share the same characteristics, needs, purchasing behavior, or consumption patterns". From the perspective of tourist demand, a segment comprises individuals who have already gone or intend to go on tourist trips, adapting supply to demand.

Accordingly, the tourism market comprises four basic elements: tourist demand, touristic supply, geographic space, and market operators (Brazil, 2010a). Tourists' decision of going on trips is based on motivational factors and the existence of facilities that enable traveling and accommodation in destinations.

Tourism demand means the need or desire to consume goods and services by one or more tourists in a visited destination. This demand influences the tourism supply of certain services, products, infrastructure, and tourism segments in the most varied destinations.

Tourism supply is composed of elements that together form the tourism product, including: tourist attractions (natural, cultural, or both); tourist services (means of accommodation, restaurants, entertainment, and means of tourism transportation); tourist infrastructure (public communication, financial, health, and other services); and the infrastructure to support tourism (urban access roads, sanitation, energy, and others that are also used by the resident community of tourist destinations) (Ignarra, 2002).

Tourism product is defined as a:

> Combination of tangible and intangible elements, such as natural, cultural, and man-made resources, attractions, facilities, services and activities around a specific center of interest which represents the core of the destination marketing mix and creates a an overall visitor experience including emotional aspects for the potential customers. A tourism product is priced and sold through distribution channels and it has a life cycle (UNWTO, 2020b).

Tourism demand can be segmented using criteria such as: age; follow-up type; income level; geographic space; travel duration; travel motivation; urban centers; and means of transport (Palhares, 2002; Ignarra, 2003).

Next, the segmentation of tourism supply and the analysis and discussion of geotourism as a tourism segment will be described.

Segmentation of Tourism Supply

Tourism supply must be aligned to the specificities presented by tourism demand, deeply analyzing the points of view of the supply and the demand in a given space to understand visitors' profile and, thus, create different products to satisfy them (Brazil, 2010a).

In 2006, three years after its creation, the MTUR launched the theoretical framework regarding priority segments in Brazil, based on demand: Rural Tourism, Cultural Tourism, Ecotourism, Nautical Tourism, Adventure Tourism, Sun and Beach Tourism, Business and Events Tourism, Sports Tourism, Study and Exchange Tourism, Fishing Tourism, Health Tourism, and Social Tourism.

Such segments were identified based on the existence of: "activities, practices, and traditions (agriculture, fishing, sports, cultural and faith manifestations); aspects and characteristics (geographic, historical, architectural, urban and social); and certain services and infrastructure (health, education, events, accommodation, and leisure)" (Brazil, 2006, p. 3).

The theoretical framework also includes segmentation based on offer, considering the motivation of the tourists' trips and the behavior of service providers and the local population of the destinations according to an existing demand. Because of the dynamic nature of demand consumption patterns, new tourist

activities could arise and, consequently, new products may be formatted, feeding a cycle of new supply and eventually tending to a new segment.

Accordingly, in 2020, the UNWTO (2020b) published definitions of tourism, emphasizing 14 tourism segments. Regarding the understanding of tourist segments between global and national tourism institutions, we verify a certain alignment, with eight common segments. Four of the UNWTO's segments are not correlated to those from the MTUR, and six MTUR segments have no correlation with UNWTO's (Table 1).

Table 1 – Correspondence between the Tourism Segments recognized by MTUR (Brazil, 2006) and by UNWTO (2020b)

Tourist Segments	
Ministry of Tourism	**World Tourism Organization**
Rural Tourism	Rural Tourism
Cultural Tourism	Cultural Tourism
Ecotourism	Ecotourism
Nautical Tourism	----------
Adventure Tourism	Adventure Tourism
Sun and Beach Tourism	Coastal, Maritime, and Inland Water Tourism
Events and Business Tourism	Business Tourism
Sports Tourism	Sports Tourism
Study and Exchange Tourism	----------
Fishing Tourism	----------
Health Tourism	Health Tourism
Social Tourism	----------
----------	Wellness Tourism
----------	Mountain Tourism
----------	Gastronomic Tourism
----------	Educational Tourism
----------	Medical Tourism
----------	Urban / City Tourism

Source: Prepared by the authors (2020).

The MTUR proposes that tourism supply and its attractions should be organized by routing, which can be understood as "a marketing process directed to a specific product — the tourist itinerary, emphasizing the theme that ensures the unique identity of the itinerary" (Brazil, 2010a, p. 33). The Ministry of Tourism (Brazil, 2010a) also emphasizes that tourism segmentation can consolidate travel itineraries and structure products.

For this to happen, tourism activity planning is decentralized and shared with the country's Federation Units. This strategy helps strengthen and position tourism by organizing tourist regions and recognizing regional spaces and important tourism segments. These are developed by the Tourism Regionalization Program — Brazil Itinerary, which is designed and executed by social actors from the region

(Brazil, 2013), such as the circuits, routes, and tourist resorts, respectively from the states of Minas Gerais (MG), Rio Grande do Sul (RS), and São Paulo (SP).

Considering the understanding of regionalization and routing as ways to promote tourism segmentation, we emphasize the importance of doing market research and, therefore, proposing a more suitable tourism segment. Understanding if the travel motivation of individuals or groups are related to the intended segment is essential, seeking to define the tourism demand profile.

In another document, MTUR (Brazil, 2010a) shows that segments present in tourist routes are planned and implemented based on tourism demand and on their social, economic, environmental, cultural, and other characteristics. Public managers, the private sector, and organized civil society should be in charge of planning and elaborating tourism supply by research, diagnostics, and analysis referring to the tourism demand's characterization data (motivation, income, origin, schooling, work/employment, etc.), the potential of the territory, and the attractions that can become tourism product.

Therefore, considering the marketing mix, the 4 P's (Price, Place, Product, and Publicity): are there products in the destination formatted for the segment? Who markets these products, how, and where are they made available? Moreover, financial questions include: what are the segment's economic contributions to companies offering local products and services? And finally, sociological questions: what are the benefits for resident communities?

Geographic space is the destination itself, where the relations between supply and demand occur. Its importance is attributed by surveys on attractions and physiographic, cultural, social, and infrastructure characteristics, among others necessary for the segment's practice and the local community's quality of life.

Routing can thus contribute to these surveys by indicating the potential of each destination and leading to its commercialization, since it "helps the process of identification, elaboration, and consolidation of new tourist itineraries" (Brazil, 2010a, p. 33). Furthermore, segmentation allows structuring and legitimizing the itineraries that excelled in tourism supply based on the local community's characteristics and on demand specificities.

Choosing the type of tourism to be implemented in a given space must focus on sustainable development. Moreover, "segmentation does not have a certain recipe or a single form. It results from a combination of factors, analyses, and specific strategies for each reality" (Brazil, 2010a, p. 153).

In this perspective, determining a new tourist segment to be developed in a given destination must focus on analyzing the demand — be it real or potential — and implementing segments that use natural and cultural resources carefully, such as with Geotourism, which will be discussed below.

Geotourism as a Tourism Segment

Geotourism is considered as a tourist activity practiced in various destinations around the world (Dowling and Newsome, 2006; Dowling and Newsome, 2010; Hose, 2016; Sadry, 2020; Singh, Wei and Anad, 2021), focusing on visits to natural spaces (Mantesso-Neto, Mansur, Ruchkys and Nascimento, 2012), urban or mixed spaces (Garofano and Govoni, 2012) such as conservation units (Bento

and Rodrigues, 2013), cities (Liccardo, Mantesso-Neto and Piekarz, 2012; Del Lama, 2019), and geoparks — including aspiring geoparks and projects (Farsani, Coelho and Costa 2012; Carvalho and Rudzewicz, 2015; Gürsay and Günes, 2014; Ngwira, 2015; Beretić, Dukanović and Checchini, 2019; Silva and Maracajá, 2019) — being no different in Brazil (Manosso, 2007; Cruz, Steinke and Araújo, 2012; Moura-Fé, 2015).

To promote the discussion on Geotourism, we emphasize that this segment has similarities (and differences) with Ecotourism, the latter being defined by the MTUR (Brazil, 2010b, p. 16) as a segment that "uses the natural and cultural heritage sustainably, encourages its conservation, and seeks to form an environmental awareness by interpreting the environment, promoting the well-being of populations". This segment includes the practice of activities in a natural environment, seeking environmental, cultural, and social conservation.

The United Nations Educational, Scientific and Cultural Organization (UNESCO, 1972) has defined environments that need conservation as World Heritage Sites. The concept of Ecotourism addresses these sites, which are natural and cultural heritages. Natural heritage is the set of the location's physical, biological, and geological resources and the habitat of species of fauna and flora which are valued from the scientific and aesthetic point of view. On the other hand, cultural heritage concerns monuments with historical, artistic, and scientific value, such as architectural works like sculptures or paintings, archaeological elements, and caves. Ecotourism's understanding and interpretation of natural heritage, usually focuses on biodiversity, considering geodiversity only as a contemplation of the landscape. Geotourism, on the other hand, seeks to balance the use of both heritages in its practice, as shown by its definitions below.

To understand Geotourism and recognize it as a tourist segment in Brazil, its concepts and national and international definitions were analyzed on how the activity emerged, its meaning, and its importance for interpreting and conserving the environment. Studies on Geotourism began in 1995, in the United Kingdom, with the author Thomas Hose, who understands Geotourism as a recent but promising form of tourism (Hose, 1995).

In the 1980s, Hose (1995) identified locations with important geological resources in England, which were being lost due to misuse. He noticed the need to develop mechanisms to explain and help understand the importance of conserving these resources. Geotourism thus appears as a way of identifying, promoting, and conserving the geodiversity of tourist attractions. The segment encourages the acquisition of public and political support and economic increases for conservation, seeking to help and integrate the global community of geosciences – such as the UNESCO Global Geoparks Network (2015) –, recognizing its scientific importance.

Geotourism "provides interpretive facilities and services to promote the value and social benefit of geological and geomorphological sites and their materials and to guarantee their conservation for the use of students, tourists, and other users with casual recreational purposes" (Hose, 2000, p. 136). It includes visiting and providing information on natural resources, emphasizing geodiversity, contemplation, and interpretation to find meaning and value for conservation.

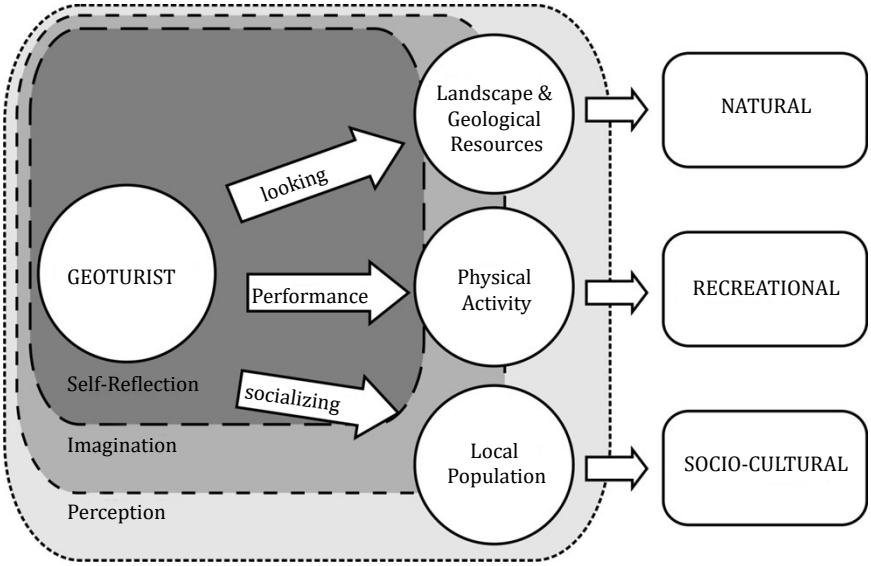
We emphasize that, since geoscientists rarely disseminate the scientific meaning and social importance of geosites, Geotourism emerges as a necessary

precursor for geoconservation (Hose, 2011). This activity seeks to protect and maintain tourist attractions together with existing collections of specimens, archives, and materials, reinforcing the essential need to bring knowledge and information to society about the importance of geological resources (Hose, 2000).

Geoconservation includes managing geological sites of interest *in situ* and *ex situ* with specific procedures such as inventory, assessment, conservation, valuation, and monitoring (Henriques, Reis, Brilha and Mota, 2011).

Geological resources thus gain new meaning and interpretation when applied to Geotourism (Coutinho et al., 2019), increasing the visibility of the activity, unlike using natural heritage only for contemplative purposes, according to Aquino, Schänzel, and Hyde (2018) (Figure 1).

Figure 1 – Conceptual framework on geotourism consumption and experience production, modified from Aquino, Schänzel, and Hyde (2018).



According to Conti, Elicher and Lavandoski (2021, p. 18), geotourism "might be, currently, the largest and biggest field when thinking about an activity that combines visiting and science". The authors emphasize that this definition is already a reality in some countries, increasing its relevance for segmentation by MTUR in Brazil.

Individuals get involved with various tourist resources (including geological ones) when participating in geotourism. Geotourists are described as those who interact and consume these resources by looking, acting, and socializing and by complex psychological processes involving perception, imagination, and self-reflection. A multiplicity of experiences can thus be produced, in this case, centered on three dimensions: natural, recreational, and socio-cultural (Aquino et al., 2018).

Regarding the public of Geotourism, the geotourists, Hose (2008) indicates two groups: Educational (dedicated users) and Recreational (nondedicated users). The first refers to individuals linked to educational institutions, whatever their schooling level, who seek to develop geological resources studies. In their case, trails can be offered to them. The second group includes those considered

amateurs, who seek visitation, contemplation, and interpretation of geological resources. They are offered visits to geoparks.

For Prendivoj (2018, p. 1), geotourists can be latent and archetypal. The latter "seek knowledge-building opportunities", whereas the first "seek new tourist experiences." On the other hand, for Grant (2010), the "real geotourists" include geoamateurs, geospecialists, and geoexperts, according to their geo-knowledge.

In this sense, Hose (2012) identifies the emergence of Modern Geotourism, whose premise is based on the "romantic" aesthetic movement, which attracted modernist artists to capture natural resources images with a literal and philosophical view of the land. This modernist vision corroborates the emergence of the widespread practice of Geotourism, based on the type of geotourist who focused only on the aesthetic contemplation of the landscape, such as *locus amoenus* and *fugere urbem*.

Geotourism focuses on geodiversity, prioritizing sustainable development and conservation while seeking to understand the historical and cultural aspects of abiotic resources as attraction factors (Dowling, 2011). The segment – an intersection between Community-Based Tourism and Ecotourism – is considered a more sustainable form of tourism, based on the equal generation of economic, social, environmental, and cultural benefits to all involved in it (Newsome and Dowling, 2018) and on aspects of geodiversity and interrelationships with tourist attributes.

The characteristics of Geotourism are noticeable, including its attention to geodiversity, its natural or cultural operating environment, and its informational nature, among other aspects. These differ Geoturism from Ecotourism, but the two practices can be combined.

As an example, Bento, Farias, and Nascimento (2020) add that the main attraction of Geotourism is geodiversity, which can occur in natural and urban areas, whereas Ecotourism happens in natural areas only.

Geotourism seeks environmental conservation while also raising awareness for the interpretation of geological resources, accompanied by social, historical, and cultural aspects. This benefits both residents, who come to know and value their usual surroundings, and tourists, who get more authentic experiences in their visits (Lorenci, 2013).

The aforementioned authors have similar views of Geotourism, which focus on understanding geological resources as possible attractions. These can be considered a first aspect towards understanding Geotourism. A second aspect is evidenced by authors such as Stueve, Cock, and Drew (2002), Stokes, Cock, and Drew (2003), Buckley (2003), among others, who approach Geotourism by understanding the use of geographic aspects in general for tourist visits.

In this second aspect, for Stueve et al. (2002), Geotourism is strictly related to sustainable tourism, maintaining the ecological, social, economic, and cultural balance and combating the impacts from mass tourism. The activity seeks to conserve the destination's geographic character and all its natural and human attributes, focusing on the impacts on resident communities, their lives, and their economies.

Stokes et al. (2003) states that Geotourism covers all aspects of traveling, not just the environment. Their definition describes tourism that supports or enhances the geographical character of the destination, concerns aspects of

sustainability on a trip, and seeks to provide an authentic trip with the experiences that travelers demand.

Buckley (2003) endorses Stueve et al. (2002), stating that there have been several attempts to define terms appropriately related to what Geotourism proposes, associated with the cultural and natural characteristics of a given geographical location that attract tourists.

In this regard, Geotourism promotes the conservation of the environment, respecting and valuing the local culture and its heritage while gathering natural, historical, and cultural aspects to give tourists more authentic travel experiences. The benefits of Geotourism include: the generation of jobs and income for residents; support for maintaining the integrity of the places visited; information and awareness of residents and tourists about the natural, cultural, and geological heritage of the area; and the generation of knowledge that gives tourists more authentic experiences (National Geographic, 2020).

As an example, the travel agency GeoWorld Travel (2020), specialized in Geotourism, corroborates the definition presented by the European Geopark Network (2011) in the Declaration of Arouca (Table 2):

Table 2 – Declaration of Arouca

Guidelines	Description
1. Concept of geotourism	The type of tourism that supports and values a territory's identity, considering its geology, environment, culture, aesthetics, heritage, and residents' well-being. Geological tourism is one of the multiple components of geotourism.
2. Conserving, Disseminating, and Valuing Life on Earth	Geological tourism is a basic tool for conserving, disseminating, and valuing Life on Earth history, including its dynamics and mechanisms. It lets visitors understand the past to see the present from another perspective and project the shared future for Earth and humanity.
3. Valuing geological heritage	The valuing of geological heritage should try opening new paths and prioritizing the use of new technologies over traditional information posters.
4. Disseminating knowledge and information about geological heritage	Knowledge and information about geological heritage must be accessible and intelligible to the general public, presented easily and avoiding the use of data with specialized and scientific language.
5. Applying the basic principles of interpretation to geological heritage.	Using the basic principles of interpretation and applying them to the geological heritage. The understanding of a natural space should arouse curiosity and emotion much more than teaching.
6. Encouraging territories to develop geotourism	The incentive must focus on the environment, the geological heritage, and the cultural, historical, and landscape values of the place. It must also involve local citizens and visitors, who will help build regional identity and promote what is authentic and unique in the territory, and guarantee environmental integrity, social justice, and sustainable economic development for the territory and its inhabitants.

Fonte: GeoWorld Travel (2011).

The travel agency's example shows that the international market has companies specialized in Geotourism. These companies offer diverse tourism products for

those who seek trips focused on geodiversity, with visits to geosites, among others, without requiring prior knowledge of such information. The trip's objective, that is, understanding these regions and their attractions, is therefore accessible.

Accordingly, Geotourism should be considered as a new tourism segment. Its range of activities focus on the conservation of geodiversity and biodiversity, making tourism products valuable for residents and tourists and differing from Ecotourism and other segments of natural environments (Moreira, 2014). Furthermore, Brazil can be a conservation economy in the finite life cycle of non-renewable natural resources, such as part of abiotic environments, since it has one of the most important mineral wealth and diversity of landscapes worldwide. Moreover, the investment in a modality of tourism responsible with the knowledge and impact on natural resources meets public policies and private initiatives for education, improving the population's quality of life and satisfying the tourists. Domestic tourism, especially, stimulates the population's sense of belonging to their heritage.

Final considerations

Part of this study's results shows that, from the Ministry of Tourism's point of view, tourism segmentation is relevant and necessary for understanding offer based on tourism demand. The analyzed documents thus suggest that tourism supply in destinations requires cultural and geographic characteristics, infrastructure, demand, statistical surveys, federal government public policies, local management, and creation of more tourist itineraries, which make geotourism viable as a segment.

This study's main objective was reached. Official MTUR documents on tourism segmentation in Brazil showed guidelines regarding the choice of segments in tourist attractions. These segments were elected according to demand, local characteristics, infrastructures appropriate to the execution of the intended segment, and the planning of public agencies and local private initiatives.

Accordingly, the most varied segments of tourism (such as Ecotourism, Sun and Beach, Adventure Tourism, among others) are practiced in destinations that: better support their activities, have environmental characteristics (natural, cultural, or both), and have adequate infrastructure to meet the needs and desires of the resident community and the possible tourists. Public power and private initiative must also articulate regarding the planning and choice of the segment to be implemented.

Geotourism can be understood as an activity that sustainably uses the geographic space, its constituent aspects, geodiversity/geopatrimony, and biodiversity. Moreover, it respects the cultural aspects inherited by the local community, who require protection to avoid their degradation or disappearance from the breadth and importance of the local attractions. Such protection can be combined with the valuation and conservation of the various attractions by teaching environmental awareness to tourists and hosts, bringing socio-economic benefits to the latter.

Overall, we identified that Geotourism has characteristics to become a tourist segment, including the practice of activities that value the destinations' traditions and environmental, geographic, architectural, historical, and other aspects.

It also has a certain degree of services and infrastructure, which, although intended for other segments, could support an existing geotourist demand.

Based on the official documents of the MTUR, besides requiring studies of conceptual reflections, Geotourism needs several actions to be considered a tourism segment, including quantitative and qualitative researches that show: the existence of a significant demand for formatted and marketed products; the economic benefits received by tour operators; and the social benefits received by the resident community.

Studies must emphasize the existence of adequate infrastructure for the segment and the well-being of the population. This is not yet seen completely in Brazil, whose tourism segment is still undetermined.

However, research can contribute in considering the feasibility of Geotourism and later provide the MTUR with subsidies for the planning and dissemination of the activity. They also offer the possibility that financial resources will be allocated to destinations that fit the activity's practice.

Regarding public policies, MTUR (Brazil, 2018) states that promoting destinations and tourism products requires technical criteria, considering the tourism segments and the relevant markets in the country. Therefore, the segments officially defined by the MTUR determine the allocation of resources for implementing adequate infrastructures for a destination or tourist attraction. Geotourism may become a target for investments by public and private authorities after research enhances its feasibility in Brazil, removing impediments for its promotion by the MTUR despite not yet being considered a segment.

To contribute to the thoughts of the MTUR on Geotourism, future research will generate data and information that help understand the activity based on the conceptual aspects treated in this study, allowing the MTUR to decide based on real data regarding the segmentation of Geotourism, whether in cultural or natural areas (Facuri, 2020).

MTUR (Brazil, 2018, p. 94) shows that monitoring the ordering, structuring, and performance of activities aimed at tourism is essential. The Ministry suggests assessing the activity's economic impacts since "the economic impacts of the tourist segments are still insufficient," advising "to carry out qualitative and quantitative studies and research on the characteristics of the various segments of tourist activity."

We therefore recommend that new scientific research explore Geotourism — especially regarding the demand and commercialization of geotourism products — using qualitative and quantitative approaches, for example, seeking to monitor this way of practicing the activity, to verify data with the actors involved and the tourist attraction itself, and to provide subsidies to government entities, showing: how practice has been going; the attractions of this activity; what motivates visits to these attractions; and the social, environmental, and economic impacts left.

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