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GEODIVERSITY IN PIAUÍ STATE: A LOOK AT THE DISSERTATIONS PRODUCED IN THE GRADUATE PROGRAM IN GEOGRAPHY OF THE FEDERAL UNIVERSITY OF PIAUÍ

Geodiversidade no estado do Piauí: um olhar para as dissertações produzidas no programa de pós-graduação em geografia da Universidade Federal do Piauí

Geodiversidad en el estado de Piauí: una mirada a las disertaciones producidas en el Programa de Posgrado en Geografía de la Universidad Federal de Piauí

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ABSTRACT

By virtue of the need to identify future paths for the development of research on geodiversity and geoheritage in Piauí State, the present research aims to analyze the dissertations produced in the Graduate Program in Geography (PPGGEO) of the Federal University of Piauí (UFPI) that address geodiversity, geoconservation, geotourism and geoeducation. To this end, we opted for a qualitative-qualitative approach that was systematized in four stages, namely: 1) search for specific bibliography, such as: articles, dissertations and theses that served as a basic foundation for this research; 2) survey of the dissertations defended on the website of the PPGGEO and later the download of the research on the website of the catalog of theses and dissertations of the Coordination for the Improvement of Higher Education Personnel (CAPES); 3) reading and systematization of the pertinent information to these researches; It is worth noting: year of defense, general objective, methodology and main results; 4) Content analysis and categorization of future approaches. The results indicate that although this research axis is being consolidated in PPGGEO UFPI and in Piauí, especially with productions linked to the Research Group on geodiversity, geomorphological heritage and geoconservation (GEOCON), research is still incipient when considering the territorial extension and the potential and abiotic richness of the state. In view of this, it is inferred the need for research that seeks to establish relationships between geodiversity and culture (geoculture), geodiversity and tourism (geotourism), and, even more, geoscientific dissemination to diverse

audiences, which can be initiated by establishing a relationship between geodiversity and education (geoeducation).

Palavras-chave: Geodiversidade; Geopatrimônio; PPGGEO-UFPI; Dissertações.

RESUMO

Em virtude da necessidade de identificar caminhos futuros para o desenvolvimento das pesquisas sobre geodiversidade e geopatrimônio no estado do Piauí, a presente pesquisa visa analisar as dissertações produzidas no Programa de Pós-Graduação em Geografia (PPGGEO) da Universidade Federal do Piauí (UFPI) que abordam sobre geodiversidade, geoconservação, geoturismo e geoeducação. Para tal, optou-se por uma abordagem quali-qualitativa que sistematizada em quatro etapas, a saber: 1) busca de bibliografia específica, tais como: artigos, dissertações e teses que serviram como fundamento basilar a esta pesquisa; 2) levantamento das dissertações defendidas no site no PPGGEO e posteriormente o download das pesquisas no site do catálogo de teses e dissertações da Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES); 3) leitura e sistematização das informações pertinentes a estas pesquisas; cabe nominar: ano de defesa, objetivo geral, metodologia e principais resultados; 4) Análise de conteúdo e categorização das abordagens futuras. Os resultados apontam que muito embora esse eixo de pesquisa esteja se consolidando no PPGGEO UFPI e no Piauí, sobretudo com produções vinculadas ao Grupo de Pesquisa em geodiversidade, patrimônio geomorfológico e geoconservação (GEOCON), as pesquisas ainda são incipientes ao considerar a extensão territorial e a potencialidade e riqueza abiótica do estado. Frente a isso, infere-se a necessidade de pesquisas que busquem estabelecer relações entre geodiversidade e cultura (geocultura), geodiversidade e turismo (geoturismo), e, mais ainda, a divulgação geocientífica a públicos diversos, que pode ser iniciada ao estabelecer relação entre geodiversidade e educação (geoeducação).

Palavras-chave: Geodiversidade; Geopatrimônio; PPGGEO-UFPI; Dissertações.

RESUMEN

Debido a la necesidad de identificar caminos futuros para el desarrollo de investigaciones sobre geodiversidad y geopatrimonio en el estado de Piauí, la presente investigación tiene como objetivo analizar las disertaciones producidas en el Programa de Posgrado en Geografía (PPGGEO) de la Universidad Federal de Piauí (UFPI) que abordan la geodiversidad, la geoconservación, el geoturismo y la geoeducación. Para ello, se optó por un enfoque cualitativo-cualitativo que se sistematizó en cuatro etapas, a saber: 1) búsqueda de bibliografía específica, tales como: artículos, disertaciones y tesis que sirvieran de fundamento básico para esta investigación; 2) relevamiento de las disertaciones defendidas en el sitio web del PPGGEO y posterior descarga de la investigación en el sitio web del catálogo de tesis y disertaciones de la Coordinación de Perfeccionamiento del Personal de Nivel Superior (CAPES); 3) lectura y sistematización de la información pertinente a estas investigaciones; Cabe destacar: año de defensa, objetivo general, metodología y principales resultados; 4) Análisis de contenido y categorización de enfoques futuros. Los resultados indican que, a pesar de que este eje de investigación se está consolidando en el PPGGEO UFPI y en Piauí, especialmente con producciones vinculadas al Grupo de Investigación en Geodiversidad, Patrimonio Geomorfológico y Geoconservación (GEOCON), la investigación aún es incipiente cuando se considera la extensión territorial y la potencialidad y riqueza abiótica del estado. Ante esto, se infiere la necesidad de investigaciones que busquen establecer relaciones entre geodiversidad y cultura (geocultura), geodiversidad y turismo (geoturismo), y, más aún, divulgación geocientífica a públicos diversos, lo cual puede iniciarse estableciendo una relación entre geodiversidad y educación (geoeducación).

Palabras clave: Geodiversidad; Geopatrimonio; PPGGEO-UFPI; Disertaciones.

1 INTRODUCTION

Geodiversity is defined as the geological plurality and aspects related to phenomena that, in turn, give rise to different landscapes, rocks, minerals, fossils and that, in view of this, favor the development of life on Earth (Gray, 2004; Brilha, 2006). Such discussions emerge assiduously after the Malvern Conference on Geological and Landscape Conservation, in 1993, hosted in the United Kingdom (Gray, 2004) in the quest to debate the relevance of the abiotic environment for maintenance and sustenance of life on Earth, as well as the promotion of discussions and research about the theme.

It is considered that geodiversity encompasses any existing abiotic framework on the planet, that, consequently, sustains life on Earth. Thereby, it is considered that it encompasses the ground we walk on, the landscapes that form the planet and the changes that were marked/carved on the landscapes for thousands of years, that are considered an important part of our history (Brilha, 2005).

Geodiversity, directly or indirectly, was present in the construction of the history of society, whether in constructions, constraining the availability of food or giving subsidies for maintenance of life on Earth. With the development of science, throughout the course of history and, consequently, the deepening of the debate around environmental issues, people talked much about biodiversity, without giving, therefore, the due attention to the base that sustains biota, geodiversity (Silva, 2020).

Despite still being a recent field, compared to other research areas, the field of geodiversity has been expanding in the past few years. Thus, it has as pioneer the professor in the department of geography of the University of London, Murray Gray, the first to focus on this theme, with the publication entitled: *Geodiversity: vuluing and conserving abiotic nature* (Brilha, 2005). For Gray (2013), geodiversity is the natural diversity of geological, geomorphological, soil and hydrological elements. Including its assemblages, structures, systems and contributions to the landscape.

Even though there is no formalized conceptualization of geodiversity by the scientific community (Santos; Valdati, 2017), countless authors, such as: Gray (2004; 2013); Nascimento, Mansur and Moreira (2015); Silva (2016); Rodrigues and Bento (2018) among others, discuss the conceptualization of geodiversity, considering, always, scientific and technical rigor and the epistemological bases of the term. It is evidenced, therefore, the articulation of the concepts, not clashing with the proposal suggested by Murray Gray. In

summary, geodiversity is the variety of abiotic elements, including in it the environments and processes (Silva, 2020).

Notwithstanding the currently developed discussions about biodiversity, it is evidenced a dissent with regard to the attention, researches and disclosure given to the biotic aspects in comparison to the abiotic. In view of this, it is considered that the approach about geodiversity still is recent, when considering the studies about biotic diversity, emerging in the international scene in the 1990s and, in the national scene, after the 2000s (Armesto *et al.*, 2015; Meira; Morais, 2016; Silva; Aquino, 2018; Barbosa; Aquino, 2020; Silva *et al.,* 2022; Silva; Nascimento; Rapanos, 2022).

Silva, Nascimento e Rapanos (2022) demonstrate the advancement of academic researches about geodiversity in Brazil, corroborating that it is a rising field of research in the country. The authors located 209 researches in 36 Brazilian universities, from among these, 73 researches concentrate in the northeast, region that leads the ranking of academic productions about geodiversity. At State level, Piauí has, according to the authors, only three defended dissertations until April 2021.

Thus, there is the following question: what are the main contributions, thematic axes and future research agendas presented by the dissertations defended in PPGGEO/UFPI? In view of this, the present research aims to analyze the dissertations produced in the Graduate Program in Geography (PPGGEO) of the Federal University of Piauí (UFPI) that deal with geodiversity, geoconservation, geotourism and geoeducation and is justified by the necessity of identifying future paths for the development of researches about geodiversity and geoheritage in Piauí State.

2 METHODOLOGICAL PROCEDURES

In search of meeting the objective of this research, it was opted for the qualitative and quantitative approach, therefore, at the same time as it was sought to quantify the dissertations produced in PPGGEO, defended between the years 2017 (beginning of the researches about the theme in question) and 2022 (last paper presented about geodiversity).

Thus, the approaches, deepening, comprehension and trends of the researches about geodiversity in the state were analyzed (Silveira; Córdova, 2009), in order to give subsidies for future researches.

The research was organized in three basic stages, namely:

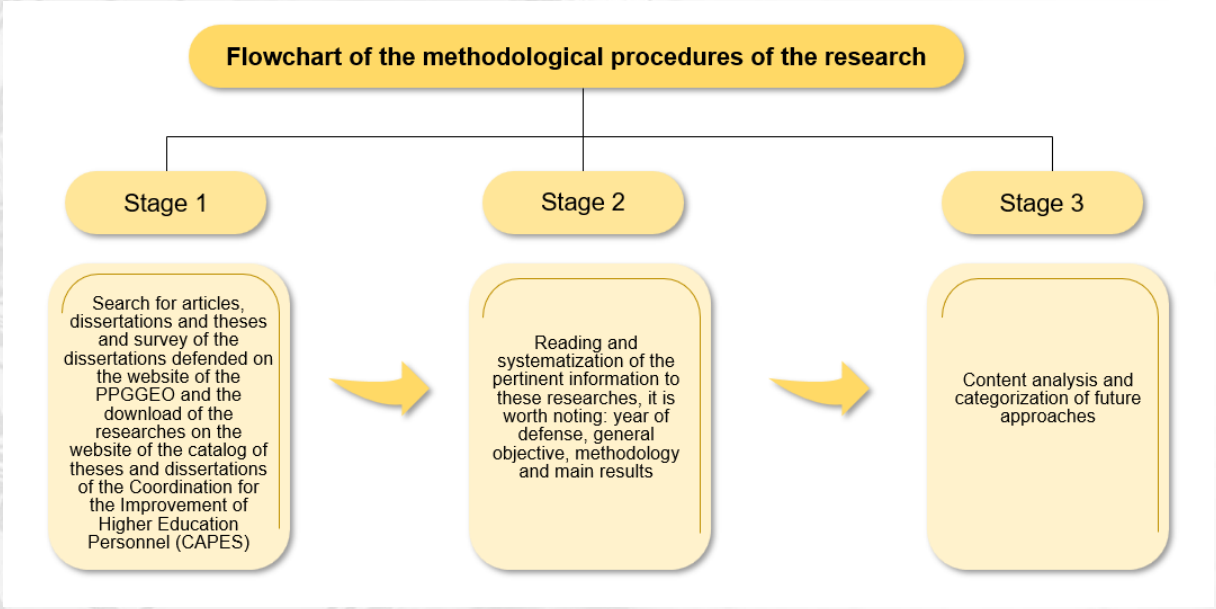
1) Search for specific bibliography, such as: articles, dissertations and theses that served as basic foundation for this research and survey of the dissertations defended on the website of the PPGGEO (https://sigaa.ufpi.br/sigaa/public/programa/portal.jsf?id=372) and later the download of the researches on the website of the catalog of theses and dissertations of the Coordination for the Improvement of Higher Education Personnel (CAPES) - (https://catalogodeteses.capes.gov.br/);

2) Reading and systematization of the pertinent information to these researches, it is worth noting: year of defense, general objective, methodology and main results;

3) Content analysis and categorization of future approaches.

The Figure 01 presents the systematization of the methodology employed in the research.

Figure 01 – Flowchart of the research stages.



Source: Elaborated by the authors (2023).

3 RESULTS AND DISCUSSION

In this section, the results obtained in the research are presented, being structured in three subsections: (i) evolution of the researches about geodiversity in Piauí State; (ii) characterization of the dissertations defended in PPGGEO/UFPI e (iii) Thematic axes and future demands.

3.1 Evolution of the researches about geodiversity in Piauí

From the survey performed, eight researches(dissertations) defended were located in a time frame from 2017 to 2021. Namely: Silva (2017); Silva (2019); Araújo (2020); Silva (2020); Silva (2021); Ferreira (2021); Amorim (2022) and Chaves (2022). The Figure 02 evidences the evolution of the researches about geodiversity in PPGGEO - UFPI.

Figure 02 – Chart about the evolution of the researches about geodiversity in PPGGEO UFPI

Year	No. of dissertations
2017	1
2018	0
2019	1
2020	2
2021	2
2022	2
Total:	8

Source: PPGGEO - UFPI. Organized by the authors (2023).

In the face of this, it is inferred that the initial milestone of the productions in PPGGEO was in 2017, with the research entitled: geodiversity and geological/geomorphological heritage of “Cities of rocks” - Piauí: touristic and didactic potential. It is noted that in the last six years, in 2018 alone there were no dissertations defended in the program about the theme in vogue.

In complement to the survey performed in this paper, a study elaborated by Silva *et al*. (2022) about academic researches produced in Piauí State as for the geodiversity theme and correlated concepts - including geoheritage, geological heritage, geomorphological heritage, geoconservation, geotourism and geopark. The analysis of the data evidences the evolution (in the quantitative ambit) of the scientific productions between the years 2010 and 2021. So, it is highlighted the existence of 50 academic papers that, notwithstanding they are current, still are incipient, when considering the potentialities of the state and the necessity of expansion, so that the entire territory is served with researches about geodiversity.

Consequently, the research of Silva *et al*. (2022) points to the following conclusions: i) accumulation of scientific productions in the north-central region of Piauí, not including, therefore, all the regions of Piauí; ii) centralization of the researches in IES - Federal Institute of Piauí (IFPI), State University of Piauí (UESPI) and UFPI. It is considered, however, the existence of researches about geodiversity in the municipalities of Nossa Senhora de Nazaré, Boqueirão do Piauí, Campo Maior, Jatobá do Piauí e Piripiri.

3.2 Characterization of the dissertations defended in PPGGEO - UFPI

In order to characterize the data about the dissertations defended in PPGGEO – UFPI, Table 01 systematizes, in a decreasing manner, the data related to the researches developed, containing: author, year, objective and main results, as follows.

Table 01 – Dissertations produced in PPGGEO - UFPI about geodiversity from 2017 to 2022

Dissertations defended in PPGGEO UFPI about geodiversity			
Author	**Year**	**Objective**	**Main results**
Chaves	2022	To characterize and inventory geodiversity and geoheritage (geological/ geomorphological) of the municipalities of Boqueirão do Piauí, Campo Maior, Jatobá do Piauí e Nossa Senhora de Nazaré - PI, as a support to territorial planning and, in addition, the implementation of educative practices geared toward geoscience, geoconservation and incentive to geotourism	18 locations of relevant interest were inventoried (LRI). From among these, eight, according to parameter established in geomorphosites, presented high value. That locations endowed with other values, such as: touristic, cultural, economic, etc. And seven with low geomorphological value, considered geodiversity sites. Consequently, for a disclosure, 10 locations were selected (geosites and geodiversity sites for disclosure [geotouristic itinerary]).
Amorim	2022	To survey the distinct environmental characteristics in order to show a reality of the municipality that is still unknown, involving the community in this recognition and preservation, and contribute to the growth of this area of study.	Four geomorphosites and seven geodiversity sites were inventoried. From among these, nine were selected for a disclosure (informative booklet and geotouristic itinerary). With regard to the cultural heritage, seven locations that indicate the culture and history of Piripiri-PI were pointed.

Ferreira	2021	To analyze geodiversity and geological and geomorphological heritage of the municipalities of Assunção do Piauí e São Miguel do Tapuio, as a support to geoconservation, geotourism and didactic activity initiatives.	Through inventory, 13 geomorphosites and two geodiversity sites were located. Therefore, when considering the inventory undertaken, it is considered the necessity of infrastructure on the part of government in order to favor the income generation and sustainable use of these locations.
Silva	2021	To analyze pedodiversity and fragility of the soil in geomorphosites of geotouristic interest of the municipalities of Castelo do Piauí, Juazeiro do Piauí e Buriti dos Montes in Piauí State.	It is inferred that the area of study demonstrates pedodiversity that range from low to moderate that showed to be suitable using *Shannon*'s methodology. According to Silva (2021), they are soil mostly belonging to a very fragile class, ranging from 0,690 to 0,809. Moderate, high and very high erodibility. With regard to the land use capacity, it is pointed that they are unsuitable land for agricultural activities, however, they can serve to shelter and recreation.
Araújo	2020	To inventory and evaluate geological/geomorphological heritage of the municipalities of Caldeirão Grande do Piauí e Francisco Macedo.	Ten geomorphosites were inventoried in the municipalities studied. The research demonstrated that most of the geomorphosites present great scientific value, touristic with relevant value of educative use.
Silva	2020	To evaluate geodiversity and geoheritage of the municipalities of Juazeiro do Piauí, Novo Santo Antônio, São João da Serra and Sigefredo Pacheco, as a support to geoconservation and geotourism initiatives.	As a result, the inventory and quantification of 36 geosites/geomorphosites were obtained, from among these, nine were selected for a disclosure, those with good access and who had accommodation offer were the selected ones. Thus, products, disclosure and valorization pages on Instagram and Facebook were developed as well as the elaboration of didactic resources.

Silva	2019	To evaluate geological-geomorphological heritage of the littoral zone of Piauí.	Five geosites were inventoried and characterized in the littoral zone of Piauí. For Silva (2019), the scientific value of the geosites characterized proved to be satisfactory with a view to understanding the dynamic and evolution of the home zone, the touristic use.
Silva	2017	To perform a survey of geodiversity and the geological/geomorphological heritage of “Cities of rocks” – PI as a support to geoconservation and geotourism initiatives.	From the methodology used in the research of Silva (2017), it was possible to infer the geological/geomorphological potential, especially, for didactic and touristic use. Therefore, six geomorphosites were characterized as medium touristic and didactic value, four with high value and four with low potential.

Source: Organized by the authors (2023).

Paying attention to a more directed look at the qualitative aspects of the analyzed studies, It is noteworthy that these have similar methodological procedures and are essentially composed of: literature review of correlated concepts (geoheritage, geological heritage, geomorphological heritage, geoconservation, geotourism and geoparks), field research (in view of the observation of the study areas for the completion of the inventory and quantification forms, as well as the photographic record), elaboration of the cartographic material for the spatialization of the geomorphosites/geodiversity sites inventoried in these areas, in addition to the presentation of geoeducative propositions as valorization and disclosure strategies.

Thus, table 01 confirms the argument raised above, by highlighting the similarity between the objectives and the main results achieved in the respective works. Thus, the analysis of the dissertations allows to infer that the stages of inventory and quantification of the geoheritage and the geodiversity sites of the study areas are pointed as the main results that lead to the propositions of disclosure and valorization strategies.

By directing attention to the results achieved in the analyzed works, the authors agree in their discussions, as they present as the main gaps in the areas of study: the scarcity of scientific investigation, valorization and disclosure as well as other geoconservation measures, therefore these areas are subject to the risk of degradation of

the geoheritage. As possible solutions to the problems, in general, the same authors suggest the expansion of scientific research related to geoconservation in the respective spatial areas, as well as in other regions of the state, as well as the implementation of geoconservation strategies in the educational and geotourism fields, thus contributing to sustainable development.

Regarding the current status of research about geodiversity, it is inferred that the works produced in PPGGEO-UFPI present a methodological trend towards the application of geoconservationist strategies linked to the stages of inventory, quantification, classification, valorization and disclosure, thus, having a lack regarding the applicability of the monitoring stage of geodiversity sites and/or geoheritage.

With regard to future challenges, in turn, it is understood that there is the necessity of expansion of the scientific studies related to geodiversity in Piauí State related to the use of methods focused on the monitoring of geoheritage prone to degradation, as well as researches relating to the stages of geoconservation that stimulate geoculture, geotourism and geoeducation – spreading the discussion to different audiences.

3.3 Thematic axes and future demands

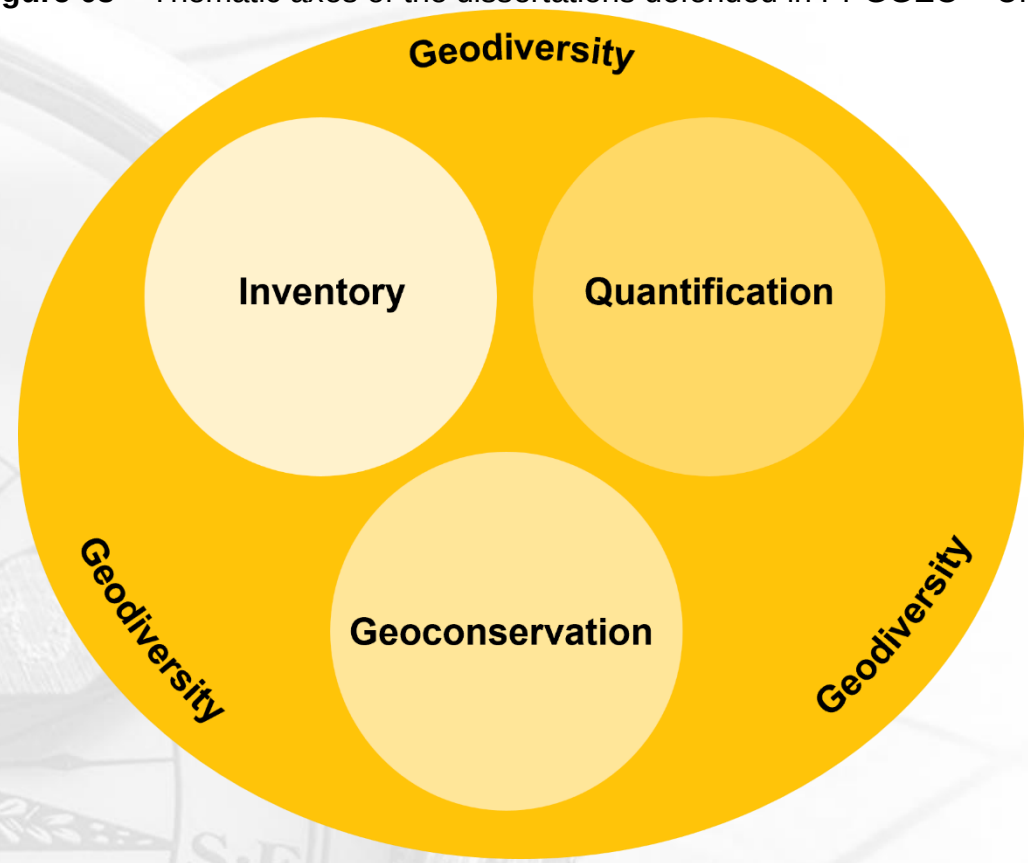
From the analysis of the above-mentioned dissertations, it is inferred the convergence of the following research axes evidenced in Figure 03.

Thus, even though this research axis is being consolidated in PPGGEO-UFPI and in Piauí, especially with productions linked to the Research Group on Geodiversity, Geomorphological Heritage and Geoconservation (GEOCON), created in 2017, research is still incipient, when considering the territorial extension and the potential and abiotic wealth of the state. In view of this, it is inferred the necessity of researches that seek to establish relationships between geodiversity and culture (**geoculture**), geodiversity and tourism (**geotourism**), and, moreover, geoscientific dissemination to diverse audiences, which can be initiated by establishing a relationship between geodiversity and education (**geoeducation**).

Thus, when considering the discussion engendered here and the relevance of geodiversity to society, Brilha (2005) stresses the necessity of conservation of the geological heritage, which are the places where one or more elements of geodiversity occur, and they also present scientific, pedagogical, cultural, touristic, ecological value, or other

characteristics. It is also understood that geodiversity has values, namely: intrinsic, cultural, esthetic, economic, functional, scientific and educative value.

Figure 03 – Thematic axes of the dissertations defended in PPGGEO – UFPI



Source: The authors (2023).

It should also be noted that the values and sub-values are interconnected, so that, in loco, these values interpose themselves in the composition of geodiversity. Thus, it is considered that researches that seek to evaluate and quantify geodiversity and geoheritage are of fundamental importance for the knowledge and, consequently, for the conservation of the Earth's history and as a possibility to enhance the local economy, since, for Pereira (2006, p. 34), “places of geomorphological interest are seen as elements of culture and enhancers of activities related to environmental education or geotourism”.

Thus, it is highlighted that the researches developed in PPGGEO – UFPI are being disseminated through articles published in national and international journals and scientific events, about the latter, it is worth pointing out the works presented at the IV Luso-Brazilian Meeting on Geomorphological Heritage and Geoconservation – ELBPGG, that took place between June 5 and 8, 2023, in Santa Maria, Rio Grande do Sul. The event featured eight papers about Piauí State, the result of the research of graduates and master's students from

PPGGEO – UFPI.

As an example of the works mentioned here, the following studies should be highlighted: Silva and Aquino (2021), Amorim *et al*. (2022), Aquino *et al*. (2022), Ferreira *et al*. (2022), Chaves and Aquino (2023a, 2023b), Silva, Maia and Cunha (2023), Amorim and Aquino (2023), Silva, Araújo and Figueiró (2023a, 2023b), Silva, Baptista and Moura (2023), Silva and Baptista (2023). That said, such investigations highlight, in Piauí scenario, perspectives of geoheritage utilization of Piauí State with a view to enhancing practices such as: geotourism, geoeducation and geoculture at the same time that they highlight existing gaps, which can later be filled.

Although there is still a necessity of expansion, the researches about geodiversity in Piauí State are on the rise. This fact is linked to the advancement of academic publications about geodiversity in Brazil, considering that this is a theme that has grown in recent years. It should be noted that, in Brazil, research began to expand after the 2000s. Thus, the Northeast region is the main center of scientific production about geodiversity in Brazil, followed by the Southeast region, with 65 researches, the South, with 51, the Central-West, 13 and the North, 7 (Silva; Nascimento; Rapanos, 2022).

When considering the scenario of Piauí State, according to Silva, Nascimento and Rapanos (2022), the UFPI occupies the eighteenth position in the national ranking, while in the Northeast region, it reaches the seventh position (three researches), only behind UFPE, UFC, UFRN (10 researches), Federal University of Bahia (UFBA, nine researches), Federal University of Paraíba (UFPB, nine researches) and Federal University of Sergipe (UFS) with four works. This study, notwithstanding Silva's findings, Nascimento and Rapanos (2022), locates the existence of eight dissertations, which, if considered, would elevate Piauí at the national level, to the tenth position, and at the northeast level, to the seventh place.

Pescatore, Bentivenga e Giovano (2023) classify geoconservation into three types, namely: **basic geoconservation** (definition and characterization of environmental, cultural and socioeconomic contexts), **popularization and application of geoconservation** (evaluation and classification, production and management of data about geoheritage, planning of geoconservationist actions aiming at the dissemination of knowledge about geoheritage to different audiences) and **technical geoconservation** geared toward the production of action and territorial management.

In this context, it is pointed the relevance of scientific research for the discovery of the possibilities and connections that geodiversity can exert for the well-being of present and future generations. About this, Brilha *et al.* (2018), from an integrative review,

demonstrates the network of relationships that geodiversity establishes for the sustainable management of georesources, through ecosystem regulation services (conditions that allow the existence of life), support (conditions that allow the development of life), provision (renewable and non-renewable resources that are fundamental for life in society) and culture (contribution to physical development and cultural activities).

4 FINAL CONSIDERATIONS

Considering the initial proposition of this research, it is pointed that the proposed goal was achieved, whereas the present paper demonstrated the advance of the academic productions about geodiversity in Piauí State from 2017 to 2022, highlighting only the year 2018 without productions about the theme.

From the analysis of the dissertations, it is possible to affirm that the researches, while relevant, still are incipient, targeting the following thematic axes: inventory, quantification for the purpose of geoconservation. There is, therefore, the necessity of expanding the researches into different publics (schools and society at large) and thematic axes (geoculture, geotourism and geoeducation). When considering the research by Pescatore, Bentivenga e Giovano (2023), the scientific productions in Piauí State still target basic geoconservation (characterization of geodiversity and the environmental, cultural context in which geoheritage is inserted), where the discussions about geodiversity are limited to the scientific community.

When considering the discussions engendered, it is believed that the research contributes to the characterization of the academic studies (dissertations) defended in PPGGEO/UFPI, that, from the analysis performed, it was inferred the necessity of researches that deal with geoscientific disclosure (geoeducation and geoculture) as proposed by Moura-Fé (2015) and Moura-Fé *et al.* (2022), to unite the scientific community with schools and community at large and, thereby, promote an application and popularization of the discussions relating to geoheritage of Piauí.

Therefore, the present paper searches to instigate the researchers to expand the field of investigation into new possibilities, where the geodiversity theme and correlated concepts are considered current and relevant themes with regard to socio-environmental conservation, so debated at the present time. However, it is known that the researches already performed are fundamental, considered, therefore, starting points so that the new

thematic axes are researched. Culture, art, popular knowledge, education and communication are axes in which geodiversity can find profitable spaces of investigation.

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