sociedade & natureza

DOI: 10.14393/SN-v37-2025-72862x
Received: 22 March, 2024 | Accepted: 26 September, 2024 | Published: 08 January, 2025

Papers

Resilience and Place Identity in the Context of the Global Climate Emergency: A Comparative Study in Brazil and Portugal

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Keywords
Climate Change
Place Identity
Resilience
Psychometrics

Abstract
In this comprehensive study, Portuguese university students were compared with Brazilian counterparts on the parameters of place identity and resilience traits. To this end, following data collection via a questionnaire, psychometrics was combined with statistical analysis methods, with the primary goal of understanding how place identity and resilience contribute to fostering climate resilience. The results reveal a generally accurate perception among participants regarding the consequences of climate change in their respective regions, with a more pronounced awareness observed in areas predicted to experience greater climate changes. Notably, in Portugal, a significant correlation emerged between a heightened risk of floods and stronger local identity, whereas among Brazilian participants, a similar correlation was observed with dry conditions. This presentation focuses on the analysis of Local/Social Identity and Resilience (Takviriyanun scale). The results also highlight a predominantly positive connection between participants and their local communities. It is noteworthy that individuals with a stronger sense of local identity demonstrate greater resilience in four out of the five factors analyzed (Support, Determination, Optimism, and Other Supports). It is concluded, therefore, that a strengthened local identity is associated with an increased capacity to cope with climate change. In this way, the possibility arises to analyze the relationship between place identity and resilience as an essential psychogeographic concept for territorial management, as it emerges as a strategic tool to promote and enhance adaptation processes.

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INTRODUCTION

In 2019, a group of over 11,000 scientists declared that the planet is facing a climate emergency (Ripple *et al*., 2020). This group drew attention to the fact that if we do not curb material consumption, reduce greenhouse gases, protect ecosystems, reduce pollution, and encourage renewable energy, humanity will not be taking the urgent steps necessary to safeguard our endangered biosphere. The issue raised in this article stems from the fact that there is low individual/social engagement in addressing climate change, despite the existence of sufficient data demonstrating that the climate is being rapidly altered by anthropogenic actions. Such engagement is often influenced by the way individuals perceive and characterize the risk of climate change.

The central objective of the study underpinning this article also lies in the observation that, although there have been various climate changes of different magnitudes and scopes throughout history, at no previous time there were both the analytical capacity and the current body of information to anticipate such events. Consequently, the acceptance, rejection, or indifference towards these climate changes can be studied by an interdisciplinary set of sciences, which will be dedicated to identifying the predominant factors in each of these reactions.

Within the principles of resilience and adaptation to climate change, as proposed by the Intergovernmental Panel on Climate Change (IPCC) in 2014, these strategies become more effective when considering individuals' perceptions of climate phenomena. By taking into account subjective factors, it is essential to consider the specific location and its context, as well as its psychological geography (Camargo, 2023). In this sense, the identity constructed from place, with its physical and social aspects, can be a tool for analyzing individuals' capacity to understand climate change.

Regarding psychosocial elements, resilience traits demonstrate a unique individual character. Thus, individuals develop a very particular cognitive apprehension of the world, which may even predict their environmental behavior. Therefore, this study considers geographic variables (country, region, climate vulnerability zones) and psychological variables (place identity and resilience traits) that may influence how individuals perceive the effects of climate change.

The central objective of this research is to verify to what extent place identity and resilience traits contribute as promoters of climate resilience. For this purpose, the results and discussions of a comparative study between Portugal and Brazil are presented, based on a sample of Portuguese and Brazilian university students, at various levels, having used psychometrics, combined with statistical analysis methods of data collected in 2018. In the next sections, a debate on resilience and place identity can be found (i), followed by a characterization of the study area and the selected sample (ii); a detailed discussion of the methods used is presented (iii), the systematization of the data and a discussion of the results (iv), and finally, the central conclusion is outlined (v).

RESILIENCE AND PLACE IDENTITY: THE CONCEPTS OF THIS RESEARCH

Originally coined in the exact sciences, the concept of resilience gradually evolved to encompass the social sciences and psychology, with a particular focus on vulnerability, risk, and adaptation. In the late 1990s, resilience transitioned from natural ecology to human ecology (social sciences), driven by research from economists and geographers (Adger, 2000). Before that, still in the 1950s, the term resilience began to be used in psychology and finally became popular in this field in the 1980s and 1990s (Flach, 1988).

The interplay between people and their environments is an important aspect when conceptualizing resilience (Waller, 2001). The stressors, which arise from the environment where the individual lives, are mediated by the processes of perception, evaluation, and coping, and consequently result in positive or negative responses (Fletcher; Fletcher, 2005). This process is continuous and moderated by various personal and situational characteristics, including positive affect, self-esteem, and self-efficacy. Such variables related to resilience influence the stress process at various stages, namely: the individual's assessment of stressors, metacognitions in response to emotions felt, and the selection of coping strategies (Fletcher; Sarkar, 2013).

Resilience is essential for the adaptive capacity that contemporary society must cultivate to address climate change. Although these changes affect spaces in a differentiated way in terms of vulnerability, scale, and time, they demand a collective response. It is important to remember that adaptation is not a property of resilience; on the contrary, resilience

integrates the capacity for adaptation and mitigation (Klein, *et al.*, 2003).

In a study conducted by Cheng *et al.* (2012) on individual resilience among indigenous peoples who suffered from Typhoon Morakot in Taiwan (2009), the authors identified that resilience levels were higher in individuals who had a greater identification with the place. The identity constructed from the place can contribute to the process of resilience to climate emergencies.

As Fátima Bernardo and José Palma-Oliveira point out,

> "place identity is [...] a substructure of the social identity of the SELF, consisting of aspects of self-concepts based on the idea of belonging to geographically defined groups. Thus, places can be seen as social categories, with a shared social meaning as a result of the interaction between the elements of a group, and not only as a scenario in which the interaction occurs" (Bernardo; Palma-Oliveira, 2012, p. 37, authors' translation).

This identity is shaped by a cognitive process that draws on the perceptions, emotions, values, and feelings attributed to space, both individually and collectively. Terms such as bond, belonging, sense, and attachment, despite having diverse theoretical roots, have contributed to the construction of the concept of place identity.

One of the geographers who most highlighted this connection between man and place was Y. Tuan (2013), through a phenomenological reading that involves elements of memory and experience. For him, the bond lies in a street where one played in childhood, a square where young people met to talk, the country house for adults to interact with nature and escape the big city. These are spaces that, through the social relations of playing, talking, and interacting, have as a physical basis, a geography, an affectivity, a memory, an experience, and a bond. In these places of interaction of the self, the social, the environmental, symbols and meanings are constructed, which will be translated over time in a dynamic way, the way we perceive the geography that surrounds us. The geographical values acquired in these places are related to our perceptions and attitudes towards the environment.

The construction of personal identity, social identity, and place identity converge on the same geographic component: place. Fresque-Baxter and Armitage (2012) argue that place is where individuals experience the most profound impacts of climate change. In a review of the concept of place identity as an element of adaptation to climate change, the authors understand that it is constructed through a dynamic socio-spatial process that assigns value to elements of the environment, influencing their perception and attitudes, to the point of enabling individuals to identify and distinguish different levels of vulnerability.

According to Yongrui *et al.* (2018), as people's identification with a place increases, so does their ability to perceive and address environmental risks and changes. A strong identity and emotional connection to a place encourages residents to acquire local knowledge and contribute to better adaptation. Beyond fostering social cohesion, it also promotes collective action, enhancing community resilience in the face of climate change. This debate guided the design of this research and the criteria adopted for the selection of the study area, data collection, and analysis.

Study area, scenarios, and perception of climate change for Portugal and Brazil

Portugal and Brazil were defined as study areas due to their differing levels of climate risk. According to the Global Climate Risk Index (Eckstein *et al.*, 2018), Portugal ranks 11th in terms of climate risk among 183 countries, indicating a high level of exposure and vulnerability to extreme weather events. Brazil, on the other hand, ranks 79th. These different degrees of climate vulnerability allow us to verify the correlation between different perceptions for each level of severity, as well as other nationally differentiated factors. To calculate the index, the following data are considered: the total number of losses caused by climate events, the number of deaths, insured losses (sum of losses in US dollars in purchasing power parity - PPP), and total economic losses (losses per unit of Gross Domestic Product - GDP).

Continental Portugal was divided into two regions for this study, using the Tagus River as a boundary: the Southern Region, south of the Tagus, and the Northern Region, to the north. This regionalization reflects the physical, cultural, and socioeconomic differences between the two areas, as well as their varying levels of climate vulnerability. The autonomous regions of mainland Portugal were excluded due to their unique educational systems and the challenges associated with distributing the questionnaire.

In Brazil, following the Instituto Brasileiro de Geografia e Estatística Brazilian Institute of

Geography and Statistics (2017) (IBGE, Brazilian Institute of Geography and Statistics, in English, the government institute responsible for collecting statistical, geographic, cartographic, geodetic, and environmental information in Brazil), this study employed the country's official five-region political-administrative division: North, Northeast, Midwest, Southeast, and South.

In the context of climate change in Portugal, according to the *Risk Global Climate Risk Index* (CRI), Portugal ranks 11th in climate risk in a ranking with 183 other countries, which highlights the degree of exposure and vulnerability to extreme climate events (Eckstein *et al*., 2018). For indexing, the total losses caused by climatic events, the number of deaths, insured damages (sum of losses in USD at purchasing power parity - PPP), and total economic damages (losses per unit of Gross Domestic Product - GDP) are considered.

The southern continental region of Portugal is the most susceptible area in the country to climate change. There has been both an increase in temperature and a decrease in precipitation, resulting in droughts. Precipitation has undergone significant changes in recent decades, particularly in this area, with monthly series revealing that drought episodes have been more frequent and more severe since 1980 (IPMA, 2010).

According to the Instituto Português do Mar e da Atmosfera (2010) (IPMA, Portuguese Institute for the Sea and Atmosphere, in English, Portugal's national meteorological, seismic, and oceanographic service), the Northern Region of Portugal, specifically the North Zone, experienced a temperature increase of approximately 0.57°C per decade (40% higher than the average warming rate observed for the country's mean temperature). Precipitation was above average (in the region north of the Douro River in 17 of the last 30 years). The Center region of the country experienced a mean temperature increase of 0.29°C per decade (30% lower than the average warming rate for the country) and precipitation was below average in 20 of the last 30 years. In the Southern Region of Portugal, specifically in the Alentejo region, there was a mean temperature increase of 0.44°C per decade and a decrease in precipitation over 30 years. In the Algarve region, there was an increase in mean temperatures of 0.37°C per decade, and in terms of rainfall, there was a systematic reduction in spring precipitation, which was above average in autumn.

Mourato *et al.* (2014), in a study on water availability in southern Portugal under different climate change scenarios (2071-2100), predict a decrease in the percentage of annual average precipitation values between -12% (inland) and -84% (near the coast), and an increase in temperature between +0.3°C (near the southern coast) and +3.3°C (northern interior), taking as a reference the period between 1961 and 1990. For the same analysis period, the decrease in annual precipitation in Portugal was also the subject of a study by Soares *et al.* (2015), who predicted an irregular reduction in precipitation of the order of 15% in the north of the country and more than 30% in the south.

An important indicator for assessing countries' performance in combating climate change is the Climate Change Performance Index 2019 (Burck *et al.*, 2019). In this ranking, Portugal improved its position, reaching the 17th place in 2019. In the same index, Brazil occupies the 79th position in terms of climate risk, in a group with 183 other countries, which indicates the level of exposure and vulnerability to extreme weather events (Burck *et al*., 2019).

According to the Painel Brasileiro de Mudanças Climáticas (2014) (PBMC, Brazilian Panel on Climate Change, in English), Brazil has already recorded an increase in the average temperature of approximately 0.75°C by the end of the 20th century, compared to the period between 1961 and 1990 (considering the annual average of 24.9°C). The same PBMC points out that the country will have a temperature increase between 1° and 6°C by 2100, compared to that recorded at the end of the 20th century. As a consequence, there will be a significant decrease in rainfall in much of the Central-Western, Northern, and Northeastern regions of the country. In the Southern and Southeastern regions, on the other hand, there will be an increase in precipitation.

Salati *et al.* (2007), analyzing the average temperature and precipitation differences between 1991 and 2004, compared to the period from 1961 to 1990, indicate a diagnosis of climate change by regions in Brazil. According to the report, there was a temperature increase of 0.6°C in the North, Northeast, and Southeast. With a significantly higher value, the Central-West region had a temperature increase of 0.7°C. The region where the temperature increased the least was the South, with 0.3°C. In terms of precipitation, there was an increase in the North (2.9%), Southeast (4.8%) and South regions with the greatest increase (17.8%), and a decrease in the Northeast (11.6%) and Central-West (0.4%) regions.

An important indicator of public policy performance is the Climate Change

Performance Index (Burck *et al.*, 2019), which evaluates countries' performance in combating climate change. In this ranking, Brazil experienced a setback, ranking 22nd in 2019 (Burck *et al.*, 2019).

MATERIALS AND METHODS

In this research, Portuguese and Brazilian university students were defined as the sample, encompassing various levels (technologist, undergraduate, master, doctorate, and post-doctorate).

The technique used was Psychometrics, which seeks to construct and apply instruments for measuring psychological constructs and variables, combined with statistical analysis methods, through which it is possible to measure and analyze the structure of mental processes (Pasquali, 2009).

The instrument used was a psychometric assessment through a questionnaire, in which respondents were asked to rate their level of agreement with certain statements and/or indicate how often they felt or behaved in certain situations.

The Local Climate Change Impact Perception questionnaire aimed to capture the perception of climate change in the context of the place, that is, at the respondent's residence, in order to specifically assess the impacts of climate change on their lives. For the analysis, the main impacts of climate change reported in the bibliography of Portugal and Brazil were listed.

Bernardo and Palma-Oliveira's 2011 work, entitled "Place identity or the place of identity: contribution to a theory of social identity of place", served as the foundation for our study. Their work, which explored the concept of place identity, informed the development of a psychometric questionnaire designed to measure individuals' identification with a particular place.

The psychometric questionnaire developed by Vilelas *et al.* (2013), titled "Takviriyanun Resilience Factors Scale: Psychometric Properties of the Portuguese Version", was employed to assess participants' resilience traits and explore potential predictive correlations.

Data was collected virtually using an online survey platform (Google Forms). Portuguese and Brazilian higher education institutions (HEIs) were formally contacted via email and social media. The research was presented, and the link to the questionnaire was requested to be disseminated. The response rate was considered to be within the average for studies conducted virtually, especially in comparative research. The choice of online data collection through questionnaires is supported by substantial evidence in the academic literature demonstrating its effectiveness (Shih; Fan, 2008; Dillman *et al.*, 2014).

In Portugal, 8 universities and polytechnics were contacted. In Brazil, 94 federal universities and federal institutes of education, science, and technology were approached. Institutions were selected based on their academic prominence and geographic coverage to reflect the diversity of climate scenarios in each country. In Portugal, institutions located in regions with varying levels of climate change exposure were included. In Brazil, institutions from different regions were selected to ensure a representative sample. Public institutions were chosen due to their extensive national presence, research tradition, and established structure for disseminating and participating in scientific studies.

The psychometric data collected in this study were analyzed using the Statistical Package for the Social Sciences software (SPSS), version 25.0 for Windows, licensed to Universidade Nova de Lisboa (Nova University of Lisbon). Both descriptive and inferential statistical analyses were performed.

RESULTS AND DISCUSSIONS

The sociodemographic characterization of the sample, consisting of 1261 individuals, of which 11.3% (n = 143) are Portuguese and 88.7% (n = 1118) are Brazilian. The majority are female (60.4%) and have undergraduate degrees (78.2%). The average age is 26.8 years, with a standard deviation of 8.8 years, ranging from 18 to 74 years, and an average of 15.2 years of residence in the current municipality. The sample is statistically equivalent in terms of gender, age, and length of residence in the municipality. Regarding academic qualifications, there is a significantly higher proportion of Portuguese individuals with master's and doctoral degrees.

Analyzing the respondents' perception of the impacts of climate change on their municipality through the lens of place identity is one of the most important elements of this research, as well as the traits of resilience. Initially, the results will be presented, indicating that university students, in general, identify with the

municipality where they reside (Table 1), and subsequently, their resilience traits will be identified.

Table 1 - Identification with the local council/municipality of residence (Portugal and Brazil, 2018)

	1	2	3	4	5	M	SD
I identify with this municipality	6.9%	13.4%	31.0%	28.6%	20.2%	3.42	1.15
I feel like I belong to this municipality.	9.7%	19.2%	26.1%	23.2%	21.8%	3.28	1.26
I think the residents of this municipality are an important reflection of who I am.	25.9%	28.7%	28.6%	10.4%	6.5%	2.43	1.16
I act like a typical person from this town.	16.4%	26.8%	32.5%	15.9%	8.3%	2.73	1.16
I don't feel like I belong in this town; I only come here to sleep/study.	54.0%	15.7%	14.5%	7.6%	8.2%	2.00	1.31
If I could, I would move out of this town without hesitation.	30.7%	18.2%	23.9%	12.0%	15.2%	2.63	1.41

Key: 1 – Nothing; 2 – Few; 3 – Average; 4 – Much; 5 – Very Much;
M: Median; SD: Standard Deviation
Source: The authors (2022).

Identification with the council/municipality is significantly higher than the scale midpoint (3), $t(1218) = 7.556$, $p = .001$, (table 2).

Table 2 - Descriptive statistics (Portugal and Brazil, 2018)

	Minimum	Maximum	Mean	Standard deviation
Identification with the municipality	1.00	5.00	3.20	.95

Source: The authors (2022).

Another crucial factor is to analyze the respondents' perception of the impacts of climate change through their resilience traits. Five dimensions were identified through the adaptation of Takviriyanun's Resilience Scale (Takviriyanun, 2008) for our study, namely: Individual support, Determination and problem-solving skills, Optimistic thinking, Other types of support, and Assertiveness, as shown in Table 3.

Table 3 - Exploratory factor analysis on the dimensions of resilience (Portugal and Brazil, 2018)

	Components					
	1	2	3	4	5	6
Q4_10 I have people who support me.	.758					
Q4_09 I have people in my family that I can trust.	.709					
Q4_08 I have people outside of my family that I can trust.	.694					
Q4_13 I have people who encourage me to be independent.	.613					
Q4_07 I am responsible for my behaviors.	.604	.412				
Q4_12 I have people who serve as role models for me.	.496					
Q4_06 I am honest, even when it might upset my parents.	.412					
Q4_03 I am a well-organized person.		.747				
Q4_01 I prepare myself to deal with things that might interfere with my goals.		.723				
Q4_02 I solve problems in various contexts.		.657				
Q4_05 I don't give up on a task until it's finished.		.525				.452
Q4_25 I manage and control my behaviors.		.448				
Q4_21 I come up with new ideas and new ways of doing things.						.501
Q4_17 I am generally calm and patient.			.765			
Q4_19 I face events with humor.			.760			
Q4_18 I am confident, optimistic, and hopeful.			.693			
Q4_20 I respect myself and others.	.412		.456			
Q4_22 I express my thoughts and feelings without hesitation.				.756		
Q4_23 I ask for help without feeling weak.				.751		
Q4_24 Faced with inappropriate things, I negotiate or refuse to do them.				.528		
Q4_15 I have available resources that I can rely on.					.724	
Q4_14 I have a stable family and community.					.639	
Q4_16 I have people who recognize when I do things right.					.570	
Q4_11 I feel limited when I seek support.					-.435	
Q4_04 I have strong beliefs about faith.						.844
Explained variance	29.13	7.5	5.6	5.1	4.7	4.3
Internal consistency	.796	.712	.746	.375	.704	---

Source: The authors (2022).

Participants obtained higher scores on the dimension "Individual support" (4.19) and lower scores on the dimension "Other types of support" (3.68), (Table 4).

Table 4 - Descriptive Statistics of Resilience Dimensions (Portugal and Brazil, 2018)

	Minimum	Maximum	Mean	Standard deviation
Individual support	1.00	5.00	4.19	.68
Determination and problem-solving skills	1.00	5.00	3.78	.64
Optimistic thinking	1.00	5.00	3.77	.75
Other types of support	1.00	5.00	3.68	.80
Assertiveness	1.00	5.00	3.83	.89

Source: The authors (2022).

When identifying resilience dimensions by nationality (Table 5), both Portuguese and Brazilian participants reported higher levels of "*Individual support*" (4.16 vs 4.19). In comparison, Portuguese participants obtained significantly higher values than Brazilians (3.92 vs 3.65) in the dimension "*Other types of support*",

t(1228) = -3.709, p = .001.

Table 5 - Resilience Traits and Nationality (Portugal and Brazil, 2018)

	Brazilians		Portuguese		
	M	SD	M	SD	Sig
Individual support	4.19	.69	4.16	.65	.611
Determination and problem-solving skills	3.78	.64	3.82	.61	.524
Optimistic thinking	3.77	.75	3.75	.73	.705
Other types of support	3.65	.81	3.92	.75	.001***
Assertiveness	3.83	.90	3.89	.80	.389

* $p < .05$ ** $p < .01$ *** $p < .001$

M: Median; SD: Standard Deviation; Sig: Significance Level; p: Level of statistical significance.

Source: The authors (2022).

"Individual support" is the most prevalent trait among our Portuguese and Brazilian respondents. This trait is characterized by individuals who, through family and social relationships, have become confident, independent, responsible, and honest, as these relationships have provided them with resilient support. Portuguese university students have higher values in the resilience trait "Other types of support" compared to Brazilian students. This trait bases its resilience on external supports such as family and community, which recognize the individual and are available to help. In fact, these two traits are the most highly correlated, demonstrating the importance of social and family interaction in building more resilient individuals.

Therefore, it is important to highlight that university students who exhibit a high level of identification with their city/municipality also demonstrate high values in almost all resilience traits (Individual support, Determination, Optimism, Self-regulation, and Other supports), thus demonstrating the importance of the socio-spatial construction of identity in fostering resilience (Table 6). In other words, the higher the identification with the city/municipality, the more resilient the respondents are in the face of the climate emergency.

Table 6 - Levels of Identification with Municipality of Residence by Resilience Dimensions (Portugal and Brazil, 2018)

	Low identification		High identification		
	M	SD	M	SD	Sig.
Individual support	4.12	.74	4.37	.61	.001***
Determination	3.75	.74	4.02	.59	.001***
Optimism	3.62	.89	4.05	.71	.000***
Self-regulation	3.45	.94	3.78	.87	.000***
Other supports	3.37	.84	3.93	.73	.000***
Assertiveness	3.81	.87	4.05	.88	.065

* $p < .05$ ** $p < .1$ *** $p < .001$

M: Median; SD: Standard Deviation; Sig: Significance Level; p: Level of statistical significance.

Source: The authors (2022).

The impacts of climate change recognized in the municipalities where our respondents reside are perceived through two main dimensions. The first dimension encompasses the items "Increased temperatures", "Heat waves", "Hotter and drier summers", and "Damage to vegetation and changes in biodiversity". As can be seen, the elements of this dimension are related to temperature and its consequences, which we have named "Increased temperature". The second dimension includes the items "Increase in extreme weather events", "Intense precipitation events", "Sea level rise", and "Increase in fires". As can be seen, the elements of this dimension are related to precipitation and its consequences, which we have named "Precipitation/sea level rise".

Among those who have a high identification with the place, the impacts of climate change in their council/municipality are perceived through

the dimension "Intense precipitation events". In other words, university students who have a high identification with their place of residence perceive climate change through the irregularity of rainfall and its consequences (Table 7).

Table 7 - Correlation between Locally Perceived Climate Change Impacts and Place Identity (Portugal and Brazil, 2018)

	Low identification		High identification		
	M	SD	M	SD	Sig.
Increased temperature	3.58	.87	3.54	.85	.590
Intense precipitation events	2.52	.92	2.83	.92	.005**

* $p < .05$ ** $p < .1$ *** $p < .001$

M: Median; SD: Standard Deviation; Sig: Significance Level; p: Level of statistical significance.

Source: The authors (2022).

Among Portuguese respondents, higher levels of the resilience trait "Individual Support" are associated with a greater perception of the impacts of climate change in their local council. For Brazilian respondents, higher levels of the resilience traits "Individual Support", "Determination", "Problem-solving skills", and "Assertiveness" are associated with a greater perception of the impacts of climate change in their municipality (Table 8).

Table 8 - Correlation between Resilience Traits and Locally Perceived Climate Change Impacts (Portugal and Brazil, 2018)

Resilience traits by nationality	**Locally perceived climate change impacts**
Portuguese	
Individual support	.262**
Determination and problem-solving skills	.052
Optimistic thinking	.151
Other types of support	.133
Assertiveness	.018
Brazilians	
Individual support	.127**
Determination and problem-solving skills	.184**
Optimistic thinking	.042
Other types of support	.013
Assertiveness	.122**

* $p < .05$ ** $p < .01$ *** $p < .001$

p : Level of statistical significance.

Source: The authors (2022).

In summary, rising temperatures are perceived as one of the most striking characteristics of climate change, particularly among residents of highly vulnerable areas, including Portuguese people living in the Southern Region and Brazilians living in the Northern Region. The dimension of "Intense precipitation events" is perceived as one of the most striking characteristics of climate change by those who have a high identification with the place where they live.

CONCLUDING REMARKS

The detailed analysis in the previous sections showed that resilience is strongly linked to the identity constructed from the place where the individual resides. Thus, it is clear that resilience traits influence the perception of climate change in the collected and analyzed sample.

Within the surveys related to the determinants of resilience, it was verified that

the greater the identification with the place, the higher the values in almost all resilience traits: "Individual Support", "Determination", "Optimism", "Self-regulation", and "Other Supports". This data is central to understanding that place identity is a condition for the capacity to respond and adapt to environmental changes. This finding reveals a significant centrality of identity as a primary means of resilient capital that can be used to address climate change. This opens up the possibility of thinking about the relationship between place identity and resilience as a psycho-geographical factor in territorial management, insofar as it becomes a tool to promote and drive adaptation.

The lived experience, which encompasses the perception of the environmental aspects around it, as well as the social cognitive processes of apprehension about a given phenomenon, must be coherent with the specificities of the geographical profile where an individual is located, including the identity formed from the place. What the data from this research reveals is that in this scenario this type of identity increases levels of resilience in the face of the climate emergency.

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Alexandro Francisco Camargo: conception, data collection, data analysis, manuscript preparation, writing.

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