UNIVERSIDADE FUMEC

PRETEXTO

# ENVIRONMENTAL VALUES: CROSS-CULTURAL COMPARISON BETWEEN BRAZIL AND USA

## VALORES AMBIENTAIS: COMPARAÇÃO TRANSCULTURAL ENTRE BRASIL E EUA

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## ABSTRACT

Environmental management and sustainable development have been significantly discussed in the literature. However, studies on this topic with a cross-cultural approach are still scarce. The objective of the present study was to analyze statistically significant differences between Brazil and the United States regarding their citizens' environmental values, discussing such differences in light of the national cultural characteristics of the two countries compared. To this end, we analyzed data from 1,486 Brazilians and 2,223 Americans with correlation and mean comparison tests. Five variables represented individuals' environmental values. In turn, we characterized American and Brazilian national cultures by five cultural dimensions. Among the five variables, three indicated that Brazilians are more environmentally engaged than Americans: importance given to protecting the environment, prioritizing the environment over economic growth, and participation in environmental movements. Americans, in turn, were more environmentally engaged than Brazilians in terms of participation in environmental organizations and financial donations.

**Keywords**: environment; sustainability; values; culture; national culture.

## RESUMO

*Gestão ambiental e desenvolvimento sustentável têm sido bastante discutidos na literatura. Porém, estudos sobre esses temas com abordagem transcultural ainda são escassos. Este estudo buscou analisar diferenças estatisticamente significantes entre Brasil e Estados Unidos concernente aos valores ambientais de seus cidadãos, discutindo diferenças à luz das características da cultura nacional dos países comparados. Para tanto, analisamos dados de 1.486 brasileiros e 2.223 americanos com testes de correlação e comparação de médias. Cinco variáveis representaram os valores ambientais dos indivíduos. Por sua vez, caracterizamos as culturas nacionais americana e brasileira com cinco dimensões culturais. Entre as cinco variáveis, três indicaram que brasileiros são mais engajados ambientalmente que americanos: importância dada à proteção do meio ambiente, priorizar o meio ambiente ao crescimento econômico e participação em movimentos ambientalistas. Americanos se mostraram mais engajados ambientalmente que brasileiros quanto à participação em organizações ambientais e doações financeiras.*

***Palavras-chave:*** *meio ambiente; sustentabilidade; valores; cultura; cultura nacional.*





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## 1 INTRODUCTION

The relationship between production and environmental degradation has changed throughout history (Pott & Estrela, 2017). Given these changes, the need to think about the human relationship with the environment is clear, aiming at adequate environmental conservation for the continuity of the human species. Not preserving the environment and gradually destroying the planet place humans in vulnerability (Ripple, 2017).

In a scenario of environmental degradation, actions that promote ecological consciousness are fundamental (Feil & Schreiber, 2017). Jacobi (2003) reinforces this argument by stating that we need to foster individuals' environmental values so that there is greater involvement on their part in constructing a new culture based on sustainable development. Human values have been identified as relevant for understanding pro-environmental attitudes and behaviors (Campos & Pol, 2010), as individuals are more likely to present behaviors that express their values (Athayde & Coutinho, 2023; Lonnqvist et al., 2013). Almeida et al. (2015) claim that human values and perceptions are relevant to fostering environmental behavior, as people may or may not change their habits because of their values.

Environmental management and sustainable development have been significantly discussed in the literature at the organizational level, focusing on the actions that companies take in their operational activities to protect the environment (e.g., Grotta et al., 2020; Gupta & Zhang, 2020; Souza et al., 2020). However, studies on this topic with a cross-cultural approach that compare individuals from different countries in light of the possible influence of national culture are still scarce. Thus, given this theoretical-empirical gap, the main objective of this study was to analyze statistically significant differences between Brazil and the United States regarding their citizens' environmental values, discussing such differences in light of the national cultural characteristics of the two countries compared.

The choice of Brazil and the United States to be compared was motivated by the fact that they are considered culturally different in a variety of cross-cultural studies (e.g., Hofstede Insights, 2022; Athayde & Torres, 2022; Athayde & Rocha, 2021). Evidence in the literature has shown that culture influences individuals' values, attitudes, and behaviors (e.g., Motta & Gomes, 2019; Gomes et al., 2016; Oliveira & Alves, 2015), and this study explores how compatible national cultural characteristics are with some individuals' environmental values in these two countries. Discussing differences in environmental values in light of culture is relevant given that culture is a phenomenon that occurs through human interaction and influences individual behavior (Motta et al. Gomes, 2019). Therefore, a cross-cultural analysis explores how people from different countries perceive and interpret the environment.

In this study, Five variables represented individuals' environmental values: (1) Participation in environmental organizations, (2) Importance given to protecting the environment, (3) Prioritizing the environment over economic growth, (4) Financial donations to ecological organizations, and (5) Participation in environmental movements. In turn, we characterized American and Brazilian national cultures by five cultural dimensions proposed by Hofstede (2011), widely adopted in cross-cultural studies, both nationally and internationally: Power Distance, Uncertainty Avoidance, Individualism versus Collectivism, Masculinity versus Femininity, and Long-term orientation versus Short-term orientation.

In addition to this introductory section that presents the main objective of this study, four more parts comprise it. Next, the literature review will support the hypothesis rising. After that, we will characterize the methodological procedures adopted in the study, including the database and the data analysis techniques. Subsequently, we will discuss the results obtained and, at last, final remarks.

## 2 LITERATURE REVIEW

This literature review addresses the connections between environmental values and culture, the characteristics of Brazilian and American national cultures, and the hypothesis rose with theoretical support.

### 2.1 Connections between environmental values and culture

The primary cause of environmental degradation is the harmful behavior of human beings, who, individually and collectively, may exploit and abuse natural resources in an unsustainable way (Pato, 2005). In contrast to the devastating aspect of human beings, pro-environmental behavior refers to individuals' values and practices guided by environmental preservation, which manifest, for instance, in recycling, environmental monitoring, and conscious consumption (Kaida & Kaida, 2016; Pato & Tamayo, 2006).

Although environmental management and sustainable development have been significantly discussed in the literature (e.g., Zúñiga-Igarza, Pérez-Campdesuñer, & Sánchez-Rodríguez, 2023; Gervazio, Bergamasco, Moreno-Calles, Yamashita, & Rocha, 2023; Guarieiro et al., 2022; Ferreira, Lange, Lima, & Macedo, 2022), studies on this topic with a cross-cultural approach that compare individuals from different countries in light of the possible influence of national culture are still scarce (e.g., Pinheiro, Oliveira, & Lozano, 2023; Rockett, Luna, & Guerra, 2019; Melo et al., 2017; Tata & Prasad, 2015). Some authors have highlighted the need to deeper investigate the possible connections between culture and environmental values (e.g., Kumar, Giridhar, & Sadarangani, 2019), going beyond studies that investigate these two topics separately (e.g., Gabrielli, Santoyo, Martins, & Rezende, 2023; Lacerda, 2011).

It is necessary to analyze individuals' values and beliefs perpetrated in society to understand the antecedents of pro-environmental behavior. Individuals tend to be concerned about their actions regarding the environment if this concern lies in collective values and beliefs (Pereira & Reis, 2017). For Kumar, Giridhar, and Sadarangani (2019), the culture of a society influences, feeds, and shapes its members' values. Hence, culture helps understand perceptions of sustainability and individuals' propensity to engage in ecological practices (Tata & Prasad, 2015).

For example, some studies show that societies based on materialism and consumerism tend to have less sustainable engagement (Bescorovaine et al., 2016; Rockett, Luna, & Guerra, 2019; Januário et al., 2017). In this type of social context, individuals see nature as a resource. It leads individuals to prioritize economic development over environmental preservation (Coelho et al., 2013).

Eom et al. (2016) analyzed individuals' pro-environmental behavior in individualistic and collective cultures. Comparing 47 countries, the authors found that these countries varied considerably in the degree to which environmental concern predicted pro-environmental behavior, a fact explained by national-level individualism and other cultural values. Environmental concern was considered a predictor of environmentally responsible consumer choice among Europeans and Americans, but not among Japanese. This study exemplifies the importance of investigating environmental values in different cultural contexts.

Another relevant point is the possible gap between environmental discourse and pro-environmental behavior. Although consciousness should be stimulated and reinforced, it faces the challenge of misalignment between perception, discourse, and pro-environmental behavior, given several sociocultural variables that may influence these relationships (Melo et al., 2017; Peixoto & Pereira, 2013; Pinheiro et al., 2011a).

Time availability is a variable that correlates with pro-environmental behavior (Franco, 2011). Whillans and Dunn (2015), for instance, state that when workers perceive time as a necessary resource to perform their work, they tend to reduce environmental engagement. This phenomenon occurs because people understand time as an opportunity cost regarding pro-environmental behavior. Melo et al. (2017) showed that individuals without much time for leisure tend not to adopt pro-environmental behaviors. Furthermore, the authors found evidence that older people tend to adopt more pro-environmental behaviors. Concerning income, the relationship was inverse: families with a higher income level tend to have less environmental engagement once higher income allows more thoughtless consumption. Regarding education, people with higher education levels tend to have more pro-environmental behaviors. Bescorovaine et al. (2016) and Jacomossi, Morano, and Barrichello (2014) obtained similar results.

Some studies demonstrate that sustainable practices applied by the government have little support from society, which, to a certain extent, influences the consciousness of environmental issues. Such a phenomenon may be linked to the fact that some people understand ecological problems as being long-term, that is, problems that will not have serious consequences shortly, and, therefore, they expect government authorities to be able to solve them (Pinheiro et al., 2011b).

Having reflected on the connections between environmental values and culture, the next section will address the cultural characteristics of Brazil and the United States, given that these characteristics will support this study to discuss possible differences between the two countries confronted in terms of their environmental values.

## 2.2 Characteristics of the Brazilian and American national cultures

Human behavior is complex, and several variables influence it. Culture is one of those variables and expresses the behaviors of a particular group or people (Andery, 2011). The interpretation of the environment influences how a person behaves, and the same environmental event can present different meanings to different observers (Brandalise et al., 2009). Culture refers to a phenomenon, a set of constructs shared between individuals. It is a concept that, by definition, is plural. There is no culture without human interaction and no human being without culture (Gomes et al., 2016). Andery (2011) argues that human behavior is the smallest part of the cultural phenomenon and, therefore, there is no way to disassociate culture and human behavior. One must understand the other.

Once the present study aimed to compare Brazil and the United States regarding their citizens' environmental values and discuss possible differences in light of national culture, we characterized the Brazilian and American national cultures by five cultural dimensions proposed by Hofstede (2011), widely adopted in cross-cultural studies, both nationally and internationally: Power Distance, Uncertainty Avoidance, Individualism versus Collectivism, Masculinity versus Femininity, and Long-term orientation versus Short-term orientation. We also present the scores indexed by the two countries in each cultural dimension according to the Country Comparison Tool developed by Hofstede (Hofstede Insights, 2022), attributed on a scale from 0 to 100. The five dimensions of national culture will be detailed hereafter.

Power Distance: The first cultural dimension refers to the degree of inequality within a society. That means that power is naturally distributed unevenly. This dimension shows how less powerful people expect and accept that this power is unequal and how much one person influences another's behavior. Therefore, through the Power Distance dimension, it is possible to compare two societies in terms of their degree of inequality (more or less unequal).

With a score of 69, Brazil reflects a society that respects hierarchy and accepts inequalities between people. The unequal power distribution justifies that the more powerful in society have more benefits than the less powerful. In Brazilian companies, a boss assumes full responsibility, and symbols of status and power are very relevant to indicate social position and "communicate" respect. The United States scores low (40) on this cultural dimension. The American premise of "freedom and justice for all" reflects equal rights in all aspects of society and government. American organizations establish a hierarchy for convenience. Superiors are accessible, and managers rely on their subordinates' expertise. Both managers and their subordinates expect to be consulted, and information is shared frequently. Communication is relatively informal, direct, and participatory.

Uncertainty avoidance: The second dimension refers to how society members interpret uncertainty and unpredictability. That means cultures deal with greater or lesser comfort with the uncertain future. In addition, societies protect themselves against uncertainty by creating norms and institutions to decrease the anxiety and stress that the unforeseen future generates.

Brazil scores high for this cultural dimension (76), like most Latin American countries. These societies show a strong need for rules, legal systems, bureaucracy, and laws to make the world safer to live in. The United States scores below average for this cultural dimension (46). In the United States, there is a relevant degree of acceptance of new ideas, innovative products, and a willingness to try something new or different. Americans tend to be more tolerant of anyone's opinions and allow freedom of expression. At the same time, Americans do not demand many rules.

Individualism versus Collectivism: the third dimension concerns how people comprise social groups. Societies based on Individualism tend to lead people to behavior restricted to the "I" in which everyone looks at themselves and their family. On the other hand, Collectivist societies rely upon relationships of fidelity resulting from behaviors within cohesive and united social groups. Higher scores on the scale indicate more individualistic cultures and lower scores reflect the opposite.

Brazil scores 38 in this cultural dimension, which means that, in Brazil, people, from birth, comprise cohesive groups represented by family, including uncles, aunts, grandparents, and cousins who continue to protect their members in exchange for loyalty. In business, it is relevant for Brazilians to build trust and lasting relationships. A meeting, for instance, usually starts with general conversations to get to know each other before doing business. With 91 points, the United States is one of the most individualistic cultures in the world. People take care of themselves and their families without relying on the support of others. In business, workers are proactive, and decisions lie upon merit.

Masculinity versus Femininity: this dimension regards the values permeated between the sexes in society. That refers to what counts as a success within groups. Countries based on Masculinity tend to present more competitive and assertive values. In turn, countries based on Femininity tend towards more collaborative values focused on quality of life. In short, societies with high scores reflect Masculinity, and low scores reflect Femininity. Brazil presents an intermediate score on this cultural dimension (49). The United States, in turn, scores high (62). In the United States, people should be the best they can be. As a result, it is common for Americans to talk about their victories and successes and believe that there is always a way to do something better.

Long-term orientation versus Short-term orientation: The fifth dimension concerns how societies deal with time. That refers to how people remember the past, act in the present, and think about the future. Countries with low scores on this dimension tend to be short-term oriented, reflecting the maintenance of well-established norms, beliefs, and customs. On the other hand, long-term-oriented countries with higher scores tend to see changes as natural, as a preparation for the future. Brazil presents an intermediate score on this cultural dimension (44). On the other hand, the United States has a low score (26). Thus, American companies measure their performance in the short-term, leading people to strive for quick results in their work environment.

Table 1 summarizes the scores of Brazil and the United States regarding the dimensions of national culture according to Hofstede Insights (2022).

**Table 1** - Cultural dimensions of Brazil and the United States

| Cultural dimension | Brazil | United States |
|---|---|---|
| Power Distance | High (69) | Low (40) |
| Individualism | Low (38) | High (91) |
| Masculinity | Intermediate (49) | High (62) |
| Uncertainty avoidance | High (76) | Intermediate (46) |
| Long-term orientation | Intermediate (44) | Low (26) |

**Source**: Adapted from Hofstede Insights (2022).

Having exposed the characteristics of Brazilian and American national cultures, we present below the hypothesis that rose with theoretical support.

### 2.3 Study hypothesis

Relying on the literature review regarding the connections between environmental values and culture and the characteristics of Brazilian and American national cultures, we raised a hypothesis. Given the high level of Individualism and Masculinity and the low level of Long-term orientation and Uncertainty Avoidance of Americans compared to Brazilians (Hofstede Insights, 2022), we expect that, in general, Brazilians are more environmentally engaged than Americans.

Individuals in societies with high levels of Individualism and Masculinity, such as the United States, tend to care about themselves. They have competitive and assertive values and usually measure success with financial and material criteria. Furthermore, societies with low levels of Long-term orientation and Uncertainty Avoidance, such as the United States, are primarily concerned with the short-term and do not worry considerably about the uncertain future (Hofstede Insights, 2022). That is not compatible with environmental values and actions, whose results are long-term. On the other hand, individuals in countries characterized by low levels of Individualism and Masculinity, such as Brazil, belong to groups marked by trust and values aimed at humanization and quality of life. Additionally, individuals in societies with high levels of Long-term orientation and Uncertainty Avoidance, such as Brazil, are concerned with the long-term and uncertain future (Hofstede Insights, 2022), which is compatible with environmental values and actions, whose results are long-term.

Therefore, given these cultural characteristics, Brazil is expected to present statistically higher means than the United States in the variables taken in this study to represent environmental values, or at least in most of them. The following section characterizes the methodological procedures adopted in the study.

## 3 METHOD

To accomplish the main objective of this study, we obtained secondary data from the sixth edition of the World Values Survey (WVS) database. In 2020, when we extracted data from the WVS database, the sixth edition was the most recent since the seventh edition was not available yet. The WVS is a survey conducted since 1981 by a group of social scientists at leading universities worldwide and investigates individuals' political and socio-cultural views. The questionnaires used in the WVS contain a large set of questions about social, economic, and political values, in addition to socioeconomic and demographic data, and follow rigorous scientific sampling procedures (WVS, 2022).

The WVS seeks to help scientists and policymakers understand changes in beliefs, values, and motivations worldwide. Thousands of political scientists, sociologists, administrators, social psychologists, anthropologists, and economists have used this data to analyze topics such as economic development, democratization, religion, gender equality, social capital, subjective well-being, and trust in large companies (e.g., Athayde, Coura, and Dias, 2019). The primary data collection method in the WVS is face-to-face questionnaires at the respondents' houses, with anonymity guaranteed. The responses are registered in a traditional paper-and-pen questionnaire or with a Computer-Assisted Personal Interview – CAPI (WVS, 2022). In the WVS edition

taken as the data source in this study, the Brazilian sample was comprised of 1,486 participants, and the American 2,232 participants.

Table 2 summarizes the five variables chosen to represent environmental values in this study. They were the only ones in the WVS database (Wave 6) directly related to environmental values.

**Table 2** - Study variables

| WVS code | Description |
|---|---|
| V30 | Participation in environmental organizations. |
| V78 | Importance given to protecting the environment. |
| V81 | Prioritizing the environment over economic growth. |
| V82 | Financial donations to ecological organizations. |
| V83 | Participation in environmental movements. |

**Source**: Adapted from WVS (2022).

The variables chosen in this research seek to identify individuals' concern with the environment. The first one (V30) asked the respondents if were members of an environmental organization. The second one (V78) described to the respondents a person who cares about the environment and asked them to indicate their level of identification with the person. The third one (V81) presented the respondents with two statements: "protection of the environment should be a priority even if it slows down economic development and reduces the number of job openings" and "economic development and job creation should be a priority even if the environment suffers some damage". Respondents had to choose the statement with which they most agreed. The fourth one (V82) asked the respondents whether or not they had donated money to environmental organizations in the past two years. At last, the fifth one (V83) asked the respondents whether or not they had participated in any environmental movement over the past two years.

We performed data analyses in the IBM® SPSS® 20.0 software (Statistical Package for the Social Sciences). Following guidelines from Tabachnick and Fidell (2001) and Miles and Shevlin (2001), we checked for normal distribution of data with Kolmogorov-Smirnov Shapiro-Wilk tests (Field, 2013). The variables were presented by country through descriptive statistics. Then, we performed Spearman correlation tests and Student's t-tests for independent samples to verify which variables presented statistically significant differences between Brazilians and Americans. Although data were not normally distributed, Student's t-test was adopted because it is considered a robust test for samples with a high number of cases (above 30), even in situations of non-normality (Hair et al., 2009). At last, we discussed results in light of theory.

# 4 RESULTS AND DISCUSSION

## 4.1 Sample characterization

Concerning sociodemographic variables, the Brazilian sample (1,486 participants) and the American sample (2,232 participants) comprised a balanced number of men and women, with a slight superiority of female participants in Brazil (52.3%) and in the United States (51.5%).

Regarding age, most participants fit in the age range 30-49 years in Brazil (38.8%) and the age range above 50 years in the United States (44.7%). Moreover, most respondents had one or two children in Brazil (43.8%) and the United States (41.8%). Concerning education level, most respondents in Brazil had not completed elementary school (31.9%), followed by participants who had completed high school (25.9%). In contrast, in the United States, most respondents had completed high school (36.1%). Regarding income level, most respondents in Brazil (25.3%) and in the United States (20.8%) fell into the intermediate range (5) among the ten income ranges presented in the questionnaire that were established considering the median household income in each country.

Regarding respondents' participation in environmental organizations, most Brazilians (94.6%) and Americans (80.7%) do not participate. Concerning the importance given by respondents to protecting the environment, 77.3% of Brazilians consider it very important, while only 38.3% of Americans do so. As for prioritizing the environment over economic growth, 60.3% of Brazilians believe that protecting the environment should be a priority even if it slows down economic development and reduces the number of job openings. In turn, 37.2% of Americans agree with this point of view.

Regarding respondents' financial donations to environmental organizations, only 7.2% of Brazilians have contributed financially to environmental organizations in the past two years, while 17.3% of Americans have. At last, considering respondents' participation in environmental movements, 7.4% of Brazilians have participated in this type of demonstration in the past two years, while 6.2% of Americans have done so. Table 3 summarizes the means for respondents' environmental values in the two countries.

**Table 3** - Environmental values: Brazil vs. United States

| Variable | Brazil | | United States | |
|---|---|---|---|---|
| | Mean | SD | Mean | SD |
| Participation in environmental organizations (V30). | 0.07A | 0.34 | 0.22A | 0.52 |
| Importance given to protecting the environment (V78). | 2.95B | 1.29 | 2.11B | 1.01 |
| Prioritizing the environment over economic growth (V81). | 1.62C | 0.49 | 1.36C | 0.52 |
| Financial donations to ecological organizations (V82). | 1.81C | 0.39 | 1.93C | 0.26 |
| Participation in environmental movements (V83). | 1.94C | 0.23 | 1.93C | 0.26 |

Note. SD: Standard deviation; A = Scale from 0 to 2; B = Scale from 1 to 6; C = Scale from 1 to 2.

**Source**: Research data

In the Brazilian sample, participation in environmental organizations positively correlated with education level ($p<0.01$), indicating that Brazilian individuals with higher education levels participate more in environmental organizations. The importance given to protecting the environment positively correlated with age ($p<0.001$), pointing out that, in Brazil, older individuals consider it more relevant to protect the environment. Prioritizing the environment over economic growth negatively correlated with age ($p<0.001$) and the number of children ($p<0.01$), and positively with education level ($p<0.001$). These results point out that, in Brazil, younger individuals with fewer children and higher education levels prioritize the environment more. Financial donations to ecological organizations positively correlated with education level ($p<0.01$), indicating that Brazilian individuals with higher education levels contribute more financially to ecological organizations. At

last, participation in environmental movements negatively correlated with the number of children ($p<0.01$) and positively with education level ($p<0.001$). That points out that Brazilian individuals with fewer children and higher education levels participate more in environmental movements.

In the American sample, participation in environmental organizations positively correlated with age ($p<0.05$), education level ($p<0.05$), and income level ($p<0.01$). That indicates that, in the United States, older individuals with higher education and income levels participate more in environmental organizations. The importance given to protecting the environment positively correlated with sex ($p<0.001$), pointing out that American women consider it more relevant to protect the environment. Prioritizing the environment over economic growth negatively correlated with age ($p<0.001$) and the number of children ($p<0.001$), and positively education ($p<0.001$). These results point out that younger Americans with fewer children and higher education levels prioritize the environment more. Financial donations to ecological organizations positively correlated with age ($p<0.001$), education level ($p<0.001$), and income level ($p<0.001$) indicating that, in the United States, older individuals with higher education and income levels contribute more financially to ecological organizations. At last, participation in environmental movements negatively correlated with age ($p<0.001$) pointing out that younger Americans participate more in environmental movements.

Considering the correlations above between environmental values and sociodemographic variables, education level stood out in Brazil, indicating that individuals with higher education levels present greater environmental engagement. In the United States, the age variable stood out. Nevertheless, for some environmental values, older ages indicated greater environmental engagement and, for others, less.

Having presented respondents' sociodemographic characteristics and the ones related to environmental values, the following section will focus on the primary objective, namely the analysis of statistically significant differences regarding environmental values between the two countries.

## 4.2 Mean comparison test: Brazil vs. The United States

Table 4 shows statistically significant differences identified between Brazilians and Americans regarding environmental values.

**Table 4** - Mean comparison test between Brazil and the United States

| Variable | Sig |
|---|---|
| Participation in environmental organizations (V30). | 0.000** |
| Importance given to protecting the environment (V78). | 0.000** |
| Prioritizing the environment over economic growth (V81). | 0.000** |
| Financial donations to ecological organizations (V82). | 0.000** |
| Participation in environmental movements (V83). | 0.042* |

Note. *p<0.05; **p<0.001

**Source**: Research data

According to the hypothesis previously raised, given the high level of Individualism and Masculinity and the low level of Long-term orientation and Uncertainty Avoidance of Americans compared to Brazilians (Hofstede Insights, 2022), Brazilians would be more environmentally engaged than Americans. Results confirmed this hypothesis for three of the five variables regarding environmental values: importance given to protecting the environment, prioritizing the environment over economic growth, and participation in environmental movements. Therefore, the hypothesis was accepted once Brazilians showed greater environmental engagement than Americans for three of the five variables analyzed.

Several studies support this result, such as the Healthy & Sustainable Living (2019), which identified insights on consumer behavior patterns worldwide. It showed that the Brazilian population cares more than the American population for subjects such as healthy and sustainable lifestyle, pollution, the severity of plastic waste, and climate change.

Furthermore, we infer that this result is compatible with the national cultural dimensions proposed by Hofstede (Hofstede, 2011; Hofstede Insights, 2022). The high scores of Americans in the cultural dimensions of Individualism and Masculinity are associated with egoistic values, which may reflect little environmental and long-term concerns. Egoism, self-interest, and the pursuit of immediate individual desires characterize cultures with little environmental engagement (Beck & Pereira, 2012).

Another interesting point of discussion concerns how human beings interpret nature. Ecocentric and anthropocentric motives seek to preserve the environment but differ in interpretation. While ecocentrics wish to protect the environment for its intrinsic and transcendental value, anthropocentrics wish to protect it to maintain the quality of human life (Thompson & Barton, 1994).

There is an approximation of Short-term orientation and high Masculinity characteristic of Americans, with anthropocentric values. American society searches for assertiveness in decisions and individual achievements, meeting emergency needs, and fulfilling short-term goals. Those are values aimed at quality of life, characteristic of environmental anthropocentrism (Pinheiro et al., 2011a).

On the other hand, the Brazilian culture approaches a collectivist worldview. It considers the social environment when making decisions. Thus, Collectivism opposes Individualism and influences environmental engagement. Pro-environmental behavior is intimately related to social collectivity, once environmental actions are unlikely to have a practical effect with sporadic practices of a few people.

In Brazil, a high level of Uncertainty Avoidance requires greater regulation and bureaucracy to build a sense of security and stability in society. Once environmental problems tend to manifest in the long-term, Brazilians may adopt new practices of ecological behavior, aiming to reduce the feeling of fear regarding the uncertain future that the environmental discussion raises. In this sense, pessimism about the level of well-being that people may have in the future relates to how they act in the present, as suggested by Kaida and Kaida (2016). The view that inconsequential attitudes may jeopardize the future leads people to adopt pro-environmental actions. Therefore, in addition to the collectivist culture, Uncertainty Avoidance may indicate concern for the environment in Brazil.

However, it is relevant to mention that for two of the five variables analyzed in the present study, Americans showed greater environmental engagement than Brazilians: participation in environmental organizations and financial donations to ecological organizations. It seems that Brazilians involve to a greater extent in specific engagement demonstrations (environmental movements), while Americans involve more permanently as active members of environmental organizations. Furthermore, Americans showed greater engagement when making financial donations to ecological agencies.

Despite the United States being more individualistic, Americans donate more money to ecological organizations than Brazilians. We hypothesize that Americans' higher average family income may justify such behavior, which needs to be better investigated in future studies. According to data from the Organization for Economic Cooperation and Development (OECD, 2020), the United States outperforms Brazil in two income-related items: the average household net adjusted disposable income per capita and the household net wealth. In both indexes, the United States presents higher averages not only compared to Brazil but also compared to many other OECD countries. On the other hand, Brazil presents lower averages when compared to other OECD countries. This way, Americans hypothetically would be more able than Brazilians to make financial contributions to ecological organizations.

Furthermore, the World Giving Index (CAF, 2019) ranked the United States first worldwide in philanthropy. This index measures three types of donation: donation of money, donation of time, and helping strangers. Despite not being a direct indicator of environmental engagement, the World Giving Index helps understand the behavior and culture of giving around the world. Therefore, membership in environmental organizations in the United States may follow this trend, even though it is an individualistic country (Hofstede, 2011; Hofstede Insights, 2022).

## 5 FINAL REMARKS

The research objective was achieved: analyzing statistically significant differences between Brazil and the United States regarding their citizens' environmental values, discussing such differences in light of the national cultural characteristics of the two countries compared. The results showed that Brazilians are more environmentally engaged than Americans considering the variables chosen to represent environmental values.

As cross-cultural studies assert, Brazil has a national culture focused on Collectivism and Uncertainty Avoidance. Such characteristics may be linked to environmental engagement, reflecting a concern for the future of the planet and future generations. On the other hand, the United States tends to relate to the environment more objectively, considering the benefits that natural resources bring to the quality of human life. Nonetheless, as highlighted in the results section, Americans showed greater environmental engagement than Brazilians in two of the five variables analyzed in the present study: participation in environmental organizations and financial donations to ecological organizations. That may be related to the higher average family income in the United States compared to Brazil, allowing them to contribute more frequently.

Recognizing the relevance and the role of national cultures on values is fundamental in the search for effective and contextualized management practices. Given the strong literature evidence that points out the influence of national culture on values, beliefs, and behaviors, it was prudent to consider the role of national culture on environmental values as investigated in the present research.

We recognize that the findings of this study are limited to the variables chosen to represent the environmental values of Brazilians and Americans, withdrawn from the World Values Survey (WVS). We invite future studies to deepen this study through a qualitative approach. Furthermore, we suggest that future quantitative studies adopt multivariate data techniques such as multiple linear regression and structural equation modeling to propose a more comprehensive model to explain individuals' environmental behavior. Finally, we suggest that future studies compare Brazil with a culturally closer country, such as other Latin American countries, to probe whether environmental values would be similar given the higher cultural proximity.

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