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A cross-cultural comparison of national perceptions of innovation between Brazil and the United Kingdom: Implications for human capital development and organizational management

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Abstract: Although innovation has been substantially explored in the literature, it has not been investigated with the same frequency from a cross-cultural perspective, an approach that considers the possible influence of national cultures on individual values, attitudes, and behaviors. Focusing on citizens from a developing and a developed country, the primary objective of this study was to explore differences between Brazilians and the British in their perceptions of innovation and to discuss these differences in light of cultural characteristics, human capital development, and organizational management. The research sample included 1,762 Brazilians and 2,576 Britons, whose data were extracted from the World Values Survey database and analyzed with statistical correlation and comparison methods. The variables related to innovation concern creativity, science, and technology, all directly related to innovation. Brazilian and British cultures were characterized using Geert Hofstede's six cultural dimensions: Power Distance, Individualism, Masculinity, Uncertainty Avoidance, Long-term Orientation, and Indulgence. Findings revealed that sex, education, and income were the sociodemographic characteristics most strongly correlated with perceptions of innovation, indicating that men with higher levels of education and income viewed innovation more positively in both countries. Additionally, comparison tests showed that the British have a more positive perception of innovation than Brazilians, aligning with the cultural profiles of each nation. The discussion of the findings emphasizes how cultural differences in perceptions of innovation may influence human capital development, workforce capabilities, and organizational capacity for innovation. In practical terms, this study highlights how organizations can design more effective talent development, training, and management strategies across different cultural environments.

Keywords: creativity; science; technology; innovative behavior; cross-cultural research; Hofstede; human capital development; organizational management

1. Introduction

Innovation can be defined as the ability to transform something into a resource that generates wealth; therefore, any change that occurs in the wealth-generating potential of existing resources constitutes innovation (Bessant & Tidd, 2018). On the other hand, there are concepts that do not necessarily link innovation to wealth generation. According to Schumpeter (1988), one of the seminal classical authors on the subject, the idea of innovation is fundamentally linked to changes and new combinations of factors that disrupt the existing equilibrium. Innovation can be characterized as incremental, when it represents an improvement in something already existing, such as a product, service, or process, or radical, when it constitutes

a novelty for the market.

The study of innovation has focused primarily on the organizational context (Birkinshaw, Hamel, & Mol, 2008; Birkinshaw & Mol, 2006; Lichtenthaler, 2016; Mandal, 2022) and on macroeconomic terms (Freeman, 1987; Schumpeter, 1988; World Intellectual Property Organization [WIPO], 2024), in the latter case taking into account factors such as investment made by countries in science and technology, the number of patents registered, the quality of universities, among other criteria. Less attention has been given to people's perceptions of innovation and its analysis from a cross-cultural perspective, that is, an approach that considers the possible influence of national culture on innovative values, attitudes, and behaviors (Athayde & Coutinho, 2023).

Innovation does not happen on its own; it passes through the hands and minds of people who approach it positively and exhibit typical characteristics such as creativity, curiosity, inspiration, revolution, extroversion, proactivity, persuasion, and disruption. These attributes allow individuals to face challenges, generate value, improve quality of life, and, to a greater extent, contribute to organizational, economic, and national development (Wheatley, 2001; Dyer, Gregersen & Christensen, 2019).

This theoretical-empirical gap was the main reason for proposing, in this study, a comparison between Brazil and the United Kingdom in terms of their citizens' perceptions of innovation, the possible compatibility of national culture with these perceptions, and implications for human capital development and organizational management. Brazil and the United Kingdom were chosen for comparison, firstly, because they are considered culturally distinct in a variety of cross-cultural studies (Hofstede Insights, 2025) and, secondly, because they occupy discrepant positions in rankings of the most innovative countries in the world. For example, according to the Global Innovation Index (WIPO, 2024), a ranking that identifies the most innovative countries in the world, the United Kingdom occupies the 5th position, while Brazil occupies the 50th position.

Understanding the interactions between culture and innovation can be relevant for advancing knowledge in the field and for gaining a more comprehensive understanding of how societies can foster innovation and progress. In this sense, this study took the following guiding questions: *What are the differences between Brazilians and the British regarding their perceptions of innovation? Are these differences compatible with the characteristics of the national culture of Brazil and the United Kingdom? What are the implications of perceptions of innovation for human capital development and organizational management?* Therefore, this study's general objective was to explore differences between Brazilians and the British regarding their perceptions of innovation and discuss these differences based on the national culture of Brazil and the United Kingdom, human capital development, and organizational management. To support the achievement of this objective, two specific objectives were established: (i) to explore the existence of correlations between the perceptions of innovation of Brazilians and British and their sociodemographic characteristics, such as sex, age, and levels of education and income, and (ii) to discuss the differences in light of the national cultures of Brazil and the United Kingdom, human capital development, and organizational management.

To represent the perceptions of innovation among Brazilians and Britons, five variables from the World Values Survey (WVS) database were used. This global investigation examines changes in individuals' political and sociocultural views. These variables were chosen because they are directly related to the object of study,

focusing on creativity, science, and technology, topics directly linked to innovation according to the literature in the field.

Contemporary literature on innovation argues that although innovation is a multidimensional construct encompassing processes, outcomes, organizational capabilities, and institutional contexts, individual perceptions of it are strongly shaped by judgments about creativity, science, and technology (Yang & Xu, 2025). This understanding is supported by both recent studies and classic formulations in the field. Since Schumpeter (1934), innovation has been conceived as the introduction of new combinations that promote economic and social change, with the generation of new ideas as a fundamental element of this process. Contemporary literature also recognizes creativity as an essential antecedent to innovation, as it involves producing original and useful ideas that can later be transformed into new products, services, processes, or business models (Barros, Resende, & Pontes, 2025).

Recent reviews highlight that creativity and innovation are distinct but deeply interdependent constructs, with creativity often described as a central component or necessary condition for innovation (Nijstad, Calic, Faria, Grimpe, & Kauppila, 2026). Furthermore, recent research shows that individuals often evaluate innovation in terms of novelty, originality, and creativity, suggesting that favorable attitudes toward creativity largely reflect positive perceptions of innovation (Acar et al., 2024; Araya-Castillo et al., 2024). Thus, while creativity does not exhaust the meaning of innovation, it represents one of its most recognized and cognitively accessible dimensions, justifying its inclusion as an indicator of perceptions of innovation.

Similarly, science and technology occupy a central position in classical and contemporary conceptions of innovation. Schumpeter (1942) already highlighted the role of technological advancement as a source of economic transformation, while Rogers (2003), in his Diffusion of Innovations Theory, defined innovation as an idea, practice, or object perceived as new by individuals or groups, emphasizing that its adoption depends on the perceptions constructed by potential adopters. In this context, science and technology are the primary mechanisms through which new ideas are generated, developed, and disseminated in society.

Recent studies show that science- and technology-intensive environments significantly enhance the innovative capacity of organizations and ecosystems, reinforcing the cognitive association between scientific and technological progress and innovation. Consequently, when individuals express favorable attitudes towards science and technology, they tend to manifest positive evaluations of the mechanisms that make innovation possible (Silva Martins, Rodríguez-Gulías, Ríos-Rodríguez, & Rodeiro-Pazos, 2025).

Therefore, although perceptions of innovation are broader than attitudes towards creativity, science, and technology considered in isolation, such attitudes capture core dimensions of the innovative phenomenon and constitute theoretically consistent indicators for operationalizing perceptions of innovation (Nijstad, Calic, Faria, Grimpe, & Kauppila, 2026). It is important to emphasize that the objective of this operationalization is not to measure innovation in all its conceptual complexity, but to capture how individuals perceive and evaluate some of its most salient and widely recognized elements in the literature, specifically creativity, science, and technology, which are among the main foundations and drivers of innovative processes.

Furthermore, to characterize Brazilian and British cultures, the six cultural dimensions proposed by Hofstede (2011), widely adopted in international cross-cultural studies, were used: (a) Power Distance, (b) Individualism, (c) Masculinity, (d)

Uncertainty Avoidance, (e) Long-term Orientation, and (f) Indulgence. The research sample consisted of 1,762 Brazilians and 2,576 Britons whose secondary data were extracted from the WVS database (WVS, 2025). More details will be presented in the methodological procedures section.

As a theoretical benefit, this study is expected to contribute to filling a theoretical-empirical gap in the literature concerning innovation, specifically regarding the cross-cultural approach. It is necessary to emphasize that innovation, whether at the organizational, economic, or national level, is developed by people; therefore, it becomes relevant to investigate individuals' perceptions of innovation and how aligned these perceptions are with the national culture to which they belong.

Regarding practical and managerial benefits, this study can provide valuable insights for the development of public policies aimed at promoting innovation at the national level, considering that culture plays a significant role in shaping individual values, attitudes, and behaviors, including a predisposition for innovation. Understanding whether the characteristics of national cultures are compatible with perceptions of innovation can contribute to the development of effective governmental strategies to stimulate a national innovative culture (Athayde & Coutinho, 2023).

The following section presents the theoretical framework of the research, which served as the basis for formulating the study's hypothesis, addressing the typical attributes of innovative people and the characteristics of Brazilian and British cultures. Following this, the methodological procedures adopted in the study will be presented, including the characterization of the research, the samples, data extraction, and data analysis. Next, the results will be presented and discussed in light of theory and previous empirical studies on the topic. Finally, concluding remarks will outline the study's contributions, limitations, and suggestions for future research.

2. Literature review

This section will address the attributes of innovative people and the characteristics of Brazilian and British national cultures according to Geert Hofstede. This literature review will culminate in the formulation of a theoretically supported hypothesis to be tested empirically.

2.1 Individual characteristics of innovative people

Associated with learning and knowledge, creativity is identified as the first step towards innovation. To a certain extent, creative thinking depends on "personality characteristics related to independence, self-discipline, risk-taking orientation, tolerance for ambiguity, perseverance in the face of frustration, and a relative lack of concern for social approval" (Amabile, 1997, p. 43). Nevertheless, creative skills can also be developed through learning and applying techniques that stimulate flexibility of thought and intellectual autonomy.

Johnson (2010) offers an intriguing perspective on creativity and its relationship to innovation. He proposes the concept of "liquid platforms", which are environments where ideas can flow freely and mix. These platforms promote collaboration and interaction between people with different perspectives, generating insights. Examples of liquid platforms include the famous *Café de Flore* in Paris, frequented by 20th-century intellectuals and artists, and Silicon Valley, where professionals from diverse fields meet and share ideas. Therefore, creativity and imagination play a relevant role in the context of innovation. Innovative people demonstrate an exceptional ability to connect seemingly unrelated ideas and generate original concepts.

Studies by Dyer, Gregersen, and Christensen (2019) identified five behaviors that

define the so-called *the innovator's DNA*: (a) the ability to relate seemingly unrelated ideas (Associating); (b) the willingness to challenge the *status quo* and ask questions that promote new perspectives (Questioning); (c) attention to detail in behaviors, processes, and products (Observing); (d) interaction with people from different areas (Networking); and (e) the propensity to test ideas and learn from experience (Experimenting). For these authors, the ability to generate innovative ideas is more than a mental function; it is a behavioral one.

Firstly, Associating is seen by the authors as the main characteristic of innovative individuals, as it allows the brain to synthesize information, finding logic and coherence between them. This facilitates the discovery of connections between seemingly isolated issues, often leading to innovations.

In turn, regarding Questioning, innovative individuals are often persistent questioners who challenge the *status quo* and avoid accepting easy solutions. They have a propensity to question everything and frequently ask themselves: *What if we changed this?*. These questions incite deep and collective reflections that propel society towards innovation.

Observing is also considered one of the main characteristics of innovative individuals. Such individuals are meticulous observers who examine the world around them in detail, from consumers to products, services, and structures. Their observations fuel ideas and inspire new approaches. A notable example is Steve Jobs' creation of the Macintosh operating system after observing the innovation center at Xerox.

The fourth characteristic concerns Networking. Innovators dedicate time and energy to testing their ideas through a broad network of contacts encompassing diverse perspectives and cultural backgrounds. However, this networking is not limited to superficial interactions, but is characterized by the deliberate search for people with different views, prioritizing new ideas and challenging thinking.

Finally, the fifth characteristic discussed by the authors is Experimenting. Innovative individuals have a constant inclination towards experimentation. They explore the world both sensorially and intellectually, keeping an open mind and venturing into new hypotheses. They are early adopters of novelty, explore new places, research new ideas, and seek constant learning. Their diverse experiences often generate new ideas and perspectives.

Grant (2016) examined the characteristics of people who challenge the *status quo* and shape the world with their original ideas. He argues that innovation often comes from individuals who do not conform to conventional thinking and have the courage to move forward with their ideas, even when faced with resistance, and a willingness to take risks. Originality, according to the author, is not just about creating something completely new but also about improving existing ideas and adapting them in unique ways. Thus, innovative people are willing to question norms and break traditional conventions.

Dweck (2006), in turn, contributes significantly to the understanding of the characteristics of innovative people through her concept of *growth mindset*. She argues that a person's mindset plays a critical role in how they face challenges and pursue goals. Individuals with a growth mindset believe that their abilities can be developed through continuous effort and learning. This belief leads them to embrace challenges, persist in the face of difficulties, and see failure as a learning opportunity. On the other hand, people with a fixed mindset believe that their abilities are static and innate. They tend to avoid challenges, fear failure, and see effort as futile. This can inhibit innovation, as such people avoid unfamiliar situations.

Promoting a growth mindset is important for personal development and for creating an environment where people feel encouraged to seek innovative solutions, fostering continuous learning, and highlighting the importance of effort and persistence. A growth mindset can also be applied to organizations, where mistakes are not punished but seen as a learning opportunity (Dweck, 2006).

Pons, Ramos, and Ramos (2016) examined differences between men and women regarding antecedent variables of innovative behaviors in organizations. They found that proactive personality, inspiring motivation, and academic level significantly predict innovative behaviors. The study involved 458 employees from 16 Spanish companies. The authors noted that, among women, innovation is more influenced by leadership and requires more social support. For women, innovation is linked to intrinsic factors like self-confidence, empowerment, and social processes. For men, innovation is more related to job demands.

Given that the primary objective of this research is to explore differences between Brazilians and the British regarding their perceptions of innovation, and discuss these differences based on the national culture of Brazil and the United Kingdom, the next section will focus on the characteristics of Brazilian and British national cultures according to Hofstede.

2.2 Characteristics of Brazilian and British cultures according to Hofstede

Studying culture encompasses “the totality of a people’s life, the social heritage that the individual acquires from their group, or it can be considered part of the environment that man himself has created” (Kluckhohn, 2005, p. 28). Linton (1981) adds that culture is not limited to a single aspect of social life, but is a complex and interconnected system of knowledge, beliefs, values, practices, and expressions that shape the life and identity of a group of people in a society. For Hofstede (2011), culture is the collective programming of the mind and influences individual values, attitudes, and behaviors.

To characterize Brazilian and British national cultures, this research used as a reference the six dimensions of national culture proposed by Geert Hofstede (Hofstede, 2011) and their respective scores on a scale of 0 to 100, with scores below 50 considered low and scores above 50 considered high: Power Distance, Individualism, Masculinity, Uncertainty Avoidance, Long-term Orientation, and Indulgence.

At this point, it is important to highlight that cross-cultural researchers do not generalize that all individuals in a country are similar, but rather rely on probability; that is, if an individual is chosen randomly in a country, there is a greater probability that they will exhibit certain attributes. This means that cross-cultural researchers recognize the existence of subcultures, but treat national cultures as a set of predominant characteristics (Vignoles et al., 2016). The six dimensions of national culture will be presented in greater detail below.

Power Distance refers to how comfortable people in a culture are with the unequal distribution of power within institutions and organizations. This involves the expectation and acceptance of hierarchies and status differences among individuals in society (Hofstede, 2011). Brazil scores 69 on this dimension, reinforcing the idea that, in this country, hierarchy should exist and be respected, and inequality is considered normal and even acceptable, exemplified by the fact that people with power receive increasingly more benefits. In cultures with high Power Distance, symbols of status and power are very important to indicate social position and communicate respect. The United Kingdom, on the other hand, has a low score on this cultural dimension (35), indicating a culture where inequality should be minimized, reinforcing the belief

that people should be treated equally, not differentiated by hierarchical position or power. A smaller Power Distance implies less concentration of power and privileges and, naturally, greater freedom for people to have their opinions taken into account and to suggest innovative solutions (Hofstede Insights, 2025).

Individualism, in turn, refers to the level of connection and interdependence existing between the members of a society; that is, whether people identify themselves as autonomous individuals (*I*) or as part of a collective (*We*). In individualistic societies, the main focus is on autonomous responsibility, limited to the individual and their immediate family. Individualism is associated with proactivity and independence. In contrast, in collectivist societies, people see themselves as members of groups that offer support and protection in exchange for mutual loyalty (Hofstede, 2011). With 38 points in this dimension, Brazil is characterized as a collectivist country where people see themselves as belonging to groups, valuing the construction of lasting and reliable bonds. With a score of 89, the United Kingdom ranks as one of the most individualistic countries in the world, with a culture rooted in the self, where individuals are taught from a young age to act proactively and think about themselves, understanding their place in society and how they will contribute uniquely (Hofstede Insights, 2025).

The third cultural dimension, Masculinity, points to the valuing of competition, achievement, success, persistence, and assertiveness, often measuring success by superior performance or excellence in a given area. This value system is often present in education and professional life. On the other hand, Femininity suggests that members of society value caring for others, quality of life, and well-being. In a society with feminine traits, success is often associated with quality of life and not necessarily with individual achievement, characterized by what drives people: satisfaction with what they do (Hofstede, 2011). Brazil shows a balance between Masculinity and Femininity (49 points), distancing it from the United Kingdom (66 points), where people are more driven by the pursuit of success, ambition for superior performance, and excellence (Hofstede Insights, 2025).

The fourth dimension, Uncertainty Avoidance, relates to how a society faces the reality that the future is inherently uncertain and unpredictable. It questions whether one should try to rigorously control the future or allow it to unfold naturally. The anxiety resulting from ambiguity leads different cultures to develop distinct approaches to dealing with this uncertainty. The score on the Uncertainty Avoidance dimension reflects how uncomfortable members of a culture feel with ambiguous or unknown situations and how they establish beliefs, norms, and institutions to try to avoid them (Hofstede, 2011).

With 76 points, Brazil demonstrates traits of a more conservative, uncertainty-averse culture, where individuals rely on rules, laws, and norms to protect themselves against the uncertain future. Countries with high scores on this dimension, such as Brazil and other Latin American countries, are comprised of individuals who typically feel frustrated when something goes wrong and unplanned, needing to remain in the comfort that their living environment provides. The United Kingdom, with a score of 35, is characterized as a country comprised of individuals who typically take risks and consider change as something natural. This is a trait of flexibility, where plans can be changed along the way, with a focus on the outcome (Hofstede Insights, 2025).

The Long-term Orientation dimension explores how different societies balance the need to maintain their cultural roots with the need to face the challenges of the present and the future. Societies that score low on this dimension tend to value the preservation of traditions and norms established over time, viewing social changes

with distrust. On the other hand, those with higher scores adopt a more pragmatic approach, seeking a balance between preserving traditions and promoting efforts to prepare for the future, understanding that change is natural (Hofstede, 2011). With intermediate scores of 44 and 54, respectively, Brazil and the United Kingdom show a possible balance between preserving traditions and viewing change as something natural as a way to prepare for the future (Hofstede Insights, 2025).

The sixth and final cultural dimension, Indulgence, relates to the degree to which people seek to control their desires and impulses related to pleasure and leisure. When control is less rigid, it is characterized as Indulgence, while more rigid control is called Restraint. Thus, cultures can be classified as indulgent or restrictive (Hofstede, 2011). Brazilians and Britons are characterized as indulgent, scoring 59 and 69, respectively; that is, both have a disposition to act according to their desires and be impulsive, having positive attitudes and a tendency towards optimism (Hofstede Insights, 2025).

Brazil's and the United Kingdom's scores on Hofstede's dimensions of national culture are summarized in **Table 1**.

Table 1. Dimensions of national culture

Cultural dimension	Brazil	United Kingdom
Power Distance	High (69)	Low (35)
Individualism	Low (38)	High (89)
Masculinity	Intermediate (49)	High (66)
Uncertainty Avoidance	High (76)	Low (35)
Long-term Orientation	Intermediate (44)	Intermediate (54)
Indulgence	High (59)	High (69)

Source: Adapted from Hofstede Insights (2025)

2.3 Study hypothesis

Based on the literature review of the characteristics of innovative individuals and the cultural characteristics of Brazil and the United Kingdom (Hofstede, 2011), the following hypothesis was raised to be tested empirically.

H1: Given that the United Kingdom exhibits lower Power Distance and Uncertainty Avoidance, and higher Individualism, Masculinity, Long-term Orientation, and Indulgence than Brazil, it is expected that the British will present more positive perceptions of innovation than Brazilians.

This study's hypothesis is based on the following arguments: a) a lower Power Distance points to societies whose citizens do not view inequalities as natural, which consequently presupposes greater decentralization of power and greater freedom to innovate and make decisions (Hofstede, 2011; Hofstede Insights, 2025); b) a higher Individualism is associated with greater autonomy and proactivity, typical characteristics of innovative individuals (Schumpeter, 1911; Wheatley, 2001; Dyer, Gregersen, & Christensen, 2019); c) a higher Masculinity is characteristic of cultures marked by valuing competition, victories, pragmatism, success, and persistence, which aligns with the values of innovative behavior (Schumpeter, 1911; Wheatley, 2001; Dyer, Gregersen, & Christensen, 2019). d) a lower Uncertainty Avoidance implies a greater propensity for risk-taking, also a typical characteristic of innovative

individuals (Schumpeter, 1911; Wheatley, 2001; Dyer, Gregersen, & Christensen, 2019); e) a higher Long-term Orientation points to societies whose citizens view change and innovation as natural, a kind of preparation for the future (Hofstede, 2011; Hofstede Insights, 2025); and f) a higher Indulgence suggests greater optimism (Hofstede, 2011), which, applied to innovation, aligns with optimism and persistence in trying something new, typical traits of innovative individuals (Schumpeter, 1911; Wheatley, 2001; Dyer, Gregersen, & Christensen, 2019).

Having presented and explained the study's hypothesis, the methodological procedures adopted in the research to fulfill its objective will be described below.

3. Materials and methods

Regarding the approach to the problem, this study is characterized as quantitative research, which adopts statistical methods and techniques (Gil, 2008). The quantitative method was employed through correlation tests between sociodemographic characteristics of Brazilians and the British and their perceptions of innovation, as well as through comparison tests to identify statistically significant differences between Brazilians and the British regarding their perceptions of innovation.

The research sample consisted of 1,762 Brazilians and 2,576 Britons, using secondary data from the World Values Survey (WVS) database. This database is a global survey that has been investigating changes in people's political and sociocultural views since the 1980s, including socioeconomic and demographic information (WVS, 2025). The WVS is a survey conducted by social scientists from renowned universities worldwide. The survey questionnaires follow rigorous scientific sampling procedures and are administered with guaranteed anonymity through paper-based questionnaires or computer-assisted personal interviews (CAPI) (WVS, 2025).

The five variables chosen to represent the perceptions of innovation of Brazilians and Britons were the only ones among the 294 in the WVS database that were directly related to the research object, focusing on creativity, science, and technology, topics directly related to innovation according to the literature. These variables, as well as the four sociodemographic characteristics, are summarized in **Table 2**.

Table 2. Study variables

Variable code in this study	Variable code in the WVS database	Description	Variable type
Imagination	Q11	Importance given by respondents to teaching imagination to children.	Perceptions of innovation
Future changes	Q44	Respondents' opinion on future changes that would give more importance to technological development.	
Impact on life	Q158	Respondents agreement with the statement: "Science and technology are making our lives healthier, easier, and more comfortable".	
Opportunities	Q159	Respondents agreement with the statement: "Due to science and technology, the next generation will have more opportunities".	

Continuation Table:

Variable code in this study	Variable code in the WVS database	Description	Variable type
Impact on the world	Q163	Respondents' opinion on science and technology: "Is the world better or worse because of them?"	Sociodemographics
Sex	Q260	Sex	
Age	Q262	Age	
Education	Q275R	Education	
Income	Q288R	Income	

Source: Adapted from WVS (2025)

Regarding the variable *Imagination* (item Q11 of the questionnaire), respondents were presented with a list of qualities from which they had to choose those considered most important to stimulate and teach children. Participants thus had two response options: to mark imagination as one of these qualities or not. In this study, this characteristic (imagination) relates to creativity. Regarding the variable *Future changes* (item Q44 of the questionnaire), participants were asked to give their opinion on a scale with three possible answers to the question: "If future changes place more emphasis on technology, would you consider it a good, indifferent, or bad thing?"

Regarding the variable *Impact on life* (item Q158 of the questionnaire), respondents were asked to indicate their level of agreement, on a scale from 1 to 10, where 1 is complete disagreement, and 10 is complete agreement, with the statement: "Science and technology are making our lives healthier, easier, and more comfortable". Regarding the variable *Opportunities* (item Q159 of the questionnaire), respondents were asked to indicate their level of agreement, on a scale from 1 to 10, where 1 is complete disagreement, and 10 is complete agreement, with the statement: "Due to science and technology, the next generation will have more opportunities".

Finally, regarding the variable *Impact on the world* (item Q163 of the questionnaire), respondents were asked to indicate their opinion on the question: "Is the world better or worse because of science and technology?". The scale ranged from 1 to 10, with 1 being the answer "much worse" and 10 being "much better".

Data analysis was conducted using IBM® SPSS® 20.0 software (Statistical Package for the Social Sciences). Following Field's (2013) guidelines, the variables were first examined for normal distribution. Given that the data from the two countries within the scope of this research presented a non-normal distribution, non-parametric correlation tests were performed between individuals' perceptions of innovation and their sociodemographic characteristics. **Table 3** summarizes the statistical tests adopted for the correlation tests.

Table 3. Statistical tests adopted for association between variables

	Sex (Q260)	Age (Q262)	Education (Q275R)	Income (Q288R)
Imagination (Q11)	Chi-square	Spearman	Chi-square	Chi-square
Future changes (Q44)	Mann-Whitney	Spearman	Spearman	Spearman
Impact on life (Q158)	Mann-Whitney	Spearman	Spearman	Spearman

Continuation Table:

	Sex (Q260)	Age (Q262)	Education (Q275R)	Income (Q288R)
Opportunities (Q159)	Mann-Whitney	Spearman	Spearman	Spearman
Impact on the world (Q163)	Mann-Whitney	Spearman	Spearman	Spearman

Source: Authors

Next, statistical comparison tests were performed to compare Brazilians and the British regarding their perceptions of innovation. Following Field's (2013) guidelines, **Table 4** summarizes the statistical comparison tests used.

Table 4. Statistical tests adopted for comparison between Brazilians and the British

Perceptions of innovation	Statistical test adopted
<i>Imagination</i> (Q11)	Chi-square
<i>Future changes</i> (Q44)	Mann-Whitney
<i>Impact on life</i> (Q158)	Mann-Whitney
<i>Opportunities</i> (Q159)	Mann-Whitney
<i>Impact on the world</i> (Q163)	Mann-Whitney

Source: Research data

Finally, the results were discussed in light of the theory of the characteristics of Brazilian and British national cultures (Hofstede's Cultural Model), the main attributes of innovative individuals, and previous empirical studies examining the intersection of national culture and innovation. Hofstede's Theory of Cultural Dimensions served as a backdrop for this study to theoretically examine empirical differences in perceptions of innovation between Brazilians and the British. Hofstede's cultural dimensions thus were not used as independent variables to test their potential impact on innovation-related variables, as this article compares only two countries. To use cultural variables as independent variables, the study would require a larger number of countries, since the number of cases (n) would no longer represent individuals but countries (Tung & Verbeke, 2010).

4. Results and discussion

This section presents and discusses the results obtained in this study. First, the samples from Brazil and the United Kingdom will be characterized. Then, the results of the correlation tests between sociodemographic characteristics of Brazilians and the British and their perceptions of innovation will be described. Afterward, the results of the statistical comparison tests between Brazilians and the British for perceptions of innovation will be presented. This sequence allowed for the empirical testing of the study's hypothesis.

4.1 Sample characterization

The Brazilian and British samples were comprised of a balanced number of men and women. The other sociodemographic characteristics of the respondents concerning age, education, and income are summarized in **Table 5**. The education and income scales were contextualized to the reality of each country as it is mentioned in the WVS database.

Table 5. Sociodemographic characteristics of the samples

Sociodemographic characteristic	Brazil (N=1,762)		United Kingdom (N=2,576)	
	Male	Female	Male	Female
Sex (Q260)	45.4%	54.6%	42.9%	57.1%
Age (Q262)	Mean		Mean	
	43.56 years		51.82 years	
	Low 42.4%		Low 32.5%	
Education (Q275R)	Medium 41.8%		Medium 17.0%	
	High 15.8%		High 50.5%	
	Low 40.7%		Low 17.2%	
Income (Q288R)	Medium 53.6%		Medium 56.7%	
	High 5.7%		High 26.1%	

Source: Research data

The sample of Brazilians was typically characterized by individuals aged 43, with primary or secondary education, and a middle income. The sample of British individuals, in turn, was typically characterized by individuals aged 51, with higher education and a medium income level. **Table 6** summarizes Brazilian and British respondents' perceptions of innovation.

Table 6. Perceptions of innovation among Brazilians and British

Perceptions of innovation	Brazil (N=1,762)		United Kingdom(N=2,576)	
<i>Imagination</i> (Q11): Importance given by respondents to teaching imagination to children.	Important: 15.3% Not important: 84.7%		Important: 37.0% Not important: 63.0%	
<i>Future changes</i> (Q44): Respondents' opinion on future changes that would give more importance to technological development.	M: 1.40*	SD: 0.67	M: 1.55*	SD: 0.67
<i>Impact on life</i> (Q158): Respondents' agreement with the statement: "Science and technology are making our lives healthier, easier, and more comfortable".	M: 6.71**	SD: 2.93	M: 7.01**	SD: 2.18
<i>Opportunities</i> (Q159): Respondents' agreement with the statement: "Due to science and technology, the next generation will have more opportunities".	M: 7.13**	SD: 2.90	M: 7.02**	SD: 2.18
<i>Impact on the world</i> (Q163): Respondents' opinion on science and technology: "Is the world better or worse because of them?".	M: 6.22**	SD: 3.12	M: 7.59**	SD: 2.10

Note: M: Mean; SD: Standard Deviation; * Scale from 1 to 3; ** Scale from 1 to 10; Source: Research data

Given that the original scale in the WVS database was inverted for the variable *Future changes* (item Q44 of the questionnaire), the lower mean for this variable shown in Table 6 indicates a more positive perception of innovation. Table 6 shows that, among the five variables chosen to represent Brazilians' and the British's perceptions of innovation, the Brazilian participants in the research presented more positive perceptions of innovation in two (Q44 and Q159), and the British in three

(Q11, Q158, and Q163).

4.2 Correlations between sociodemographic variables and perceptions of innovation

To ensure greater clarity and simplicity in presenting the results, **Table 7** summarizes the results from the correlation matrices for Brazil and the United Kingdom. This table presents the results regarding statistically significant correlations ($p < 0.05$) between sociodemographic characteristics and perceptions of innovation in Brazil and the United Kingdom.

Table 7. Summary of correlations between sociodemographic characteristics and perceptions of innovation

Perceptions of innovation	Brazil	United Kingdom
<i>Imagination</i> (Q11)	Male sex; ↓ Age ↑ Education; ↑ Income	↓ Age; ↑ Education; ↑ Income
<i>Future changes</i> (Q44)	↑ Education	Male sex; ↑ Age ↑ Education; ↑ Income
<i>Impact on life</i> (Q158)	<i>No statistically significant correlations found</i>	Male sex; ↑ Education; ↑ Income
<i>Opportunities</i> (Q159)	<i>No statistically significant correlations found</i>	↑ Income
<i>Impact on the world</i> (Q163)	Male sex; ↑ Education ↑ Income	Male sex; ↑ Education; ↑ Income

Note. ↓: Lower level; ↑: Higher level. Source: Research data

Analyzing the correlations in both countries together (**Table 7**), it is clear that education and income were the sociodemographic characteristics most strongly associated with positive perceptions of innovation, indicating that individuals with higher levels of education and income present more positive perceptions of innovation in both countries compared. To a lesser extent, sex was also associated with innovation, indicating that males present more positive perceptions of innovation. In turn, age stood out since, in two situations (one in Brazil and one in the United Kingdom), younger individuals presented a more positive perception of innovation, while in one situation (in the United Kingdom), older individuals presented a more positive perception of innovation, not pointing to a clear direction.

According to Mostafa (2005), higher levels of education can encourage people to adopt creative actions, demonstrating a positive outlook on innovation. The reasoning is that a higher level of knowledge can contribute to identifying different ways of solving the same problem, putting innovation into practice. The findings of research conducted by Almeida, Nogueira, and Silva (2008), for example, indicated that the higher the level of literacy skills, the greater the creativity and inclination towards innovation. This is because greater knowledge provides greater analytical power and more effective solutions. For Bessant and Tidd (2019), processes evolve in the face of knowledge, resulting in the creation of new products or services, causing transformation in the patterns of society as a whole.

The results of the present study also showed that higher income levels were associated with positive perceptions of innovation, both in Brazil and in the United Kingdom. This finding may be due to the fact that, globally, higher levels of

education are associated with higher levels of income (Oliveira & Duque, 2019; Ribeiro, 2017).

In addition to education and income, sex was also associated with a positive perception of innovation, and in all statistically significant correlations identified between sex and positive perceptions of innovation, males stood out, similar to the results of studies by Mostafa (2005) and Almeida, Nogueira, and Silva (2008). This finding, in Brazil, can be discussed based on one of the most striking characteristics of Brazilian culture, namely, patriarchy.

According to Aguiar (2000), patriarchy is characterized by the paternal figure as unquestionable, being considered a supreme authority. Since the essence of patriarchy is the maintenance of norms and decision-making power centered on the male figure, this tradition may have fostered in men, over centuries, a more positive perception of innovation, given that it was the man's responsibility to provide for the household's material needs, make decisions, and identify new ways of carrying out activities and solving problems, although this situation has undergone substantial changes in recent decades due to the empowerment of women.

Del Priore (2014) addresses the historical perception of Brazilian women, highlighting the absence of and resistance to encouragement for their intellectual development. Women were frequently confined to limited social roles, such as caring for the home and family, and the obligation of marriage, which was considered a personal achievement for women. In parallel, men occupied prominent positions concerning decision-making and generating opportunities for innovation and problem-solving.

The association of males with a more positive perception of innovation in Brazil and the United Kingdom can also be reflected in one of the cultural dimensions proposed by Hofstede (2011), namely, Masculinity. This cultural dimension is characterized by the valuing of competition, achievement, success, proactivity, persistence, and assertiveness - elements closely linked to the essence of innovation (Wheatley, 2001; Dyer, Gregersen, & Christensen, 2019). However, Pons, Ramos, and Ramos (2016) argue that these results are far from conclusive regarding sex differences in innovation.

Age did not show a clear association with perceptions of innovation. Consistent with Mostafa's study (2005), levels of creativity and propensity to innovate also did not show statistically significant differences. Although younger individuals are expected to have greater contact with technological innovations, older adults have also experienced a wide range of technological advancements throughout their lives, both assuming central roles and benefiting from innovations arising from globalization and technological progress (Carmo & Magalhães, 2019). Therefore, the fact that all age groups have witnessed and experienced - albeit to varying degrees - the transformations and advancements resulting from innovation may contribute to the lack of a clear association between age and a positive perception of innovation.

Having discussed the correlations between Brazilian and British perceptions of innovation and their sociodemographic characteristics, the following section will present the results of comparison tests for innovation-related variables in the two contrasted countries.

4.3 Comparison tests between Brazil and the United Kingdom

Table 8 presents the results of statistical comparison tests between Brazil and the United Kingdom regarding perceptions of innovation.

Table 8. Comparison tests between Brazil and the United Kingdom

Perceptions of innovation	Sig. (<i>p</i> -value)
<i>Imagination</i> (Q11): Importance given by respondents to teaching imagination to children.	Cramer's V: 0.237 <0.001* (superior result for the United Kingdom)
<i>Future changes</i> (Q44): Respondents' opinion on future changes that would give more importance to technological development.	<0.001* (higher mean for Brazil)
<i>Impact on life</i> (Q158): Respondents agreement with the statement: "Science and technology are making our lives healthier, easier, and more comfortable".	<0.001* (higher mean for the United Kingdom)
<i>Opportunities</i> (Q159): Respondents agreement with the statement: "Due to science and technology, the next generation will have more opportunities".	0.170 (difference not statistically significant)
<i>Impact on the world</i> (Q163): Respondents' opinion on science and technology: "Is the world better or worse because of them?".	<0.001* (higher mean for the United Kingdom)

Note: *Statistically significant difference ($p < 0.001$). Source: Research data

Table 8 shows that statistically significant differences were identified between Brazil and the United Kingdom for four of the five variables chosen in this study to represent perceptions of innovation. According to the study's Hypothesis (H-1), it was expected that the British, in general, would have more positive perceptions of innovation compared to Brazilians, given that the United Kingdom exhibits lower Power Distance and Uncertainty Avoidance, and higher Individualism, Masculinity, Long-term Orientation, and Indulgence than Brazil.

By cross-referencing Tables 6 and 8, we can infer that, among the four variables with statistically significant differences (*Imagination*, *Future changes*, *Impact on life*, and *Impact on the world*), the British presented more positive perceptions of innovation in three (*Imagination*, *Impact on life*, and *Impact on the world*). This suggests that, compared to Brazilians, the British value imagination more and agree more strongly that science and technology are making our lives healthier, easier, and more comfortable, as well as making the world a better place.

On the other hand, Brazilians presented more positive perceptions of innovation in only one variable (*Future changes*), suggesting that, compared to the British, Brazilians agree more strongly that a greater emphasis on technology in the future will be a good thing. Therefore, considering the results as a whole, we can partially accept the study's hypothesis, which reinforced reasonable compatibility of perceptions of innovation and national culture.

One possible explanation for the finding that Brazilians expressed stronger agreement than the British that a greater emphasis on technology in the future will be beneficial is that individuals in emerging economies often perceive technological advancement as a pathway to overcoming structural constraints and accelerating social and economic development.

In countries where challenges related to productivity, public services, infrastructure, education, and healthcare remain more salient, technology may be viewed less as a mature feature of everyday life and more as a promising instrument for future progress. Consequently, citizens may develop stronger expectations regarding the transformative potential of technological change.

This interpretation is consistent with recent research showing that the

perceived societal benefits of technological innovation are particularly pronounced in contexts where innovation is associated with opportunities for modernization, economic growth, and improvements in quality of life. As a result, Brazilians may exhibit greater optimism about the future role of technology because technological advancement is more strongly linked to aspirations for national development and social improvement than in highly developed economies where many technological gains have already been realized (Xiao & Zhao, 2023; Castellacci & Tveito, 2021).

On the other hand, it is important to point out that the British presented more positive perceptions of innovation than Brazilians in a greater number of variables, a result that is consistent with the cultural characteristics of the two countries.

The low score in the cultural dimension of Power Distance points to a society that does not view inequality as natural, which consequently implies less decentralization of power and greater freedom to innovate and make decisions (Hofstede, 2011). The UK's low score in this dimension is related to greater freedom and a propensity for questioning. This tendency is an essential characteristic of innovative individuals who seek to challenge the established order, promoting in-depth reflections capable of inducing social transformations (Dyer, Gregersen, & Christensen, 2019). In line with Hofstede's studies (Hofstede Insights, 2025), the UK values the reduction of inequalities, supporting the view that all people should be treated equally, pointing to the decentralization of power and greater ease of innovation.

According to Dweck (2006), a growth mindset plays a fundamental role in how people approach challenges and pursue their goals, encouraging them to persevere in the face of obstacles, explore the unknown, and thus potentially foster change and innovation. Drucker (1986) argues that responsibility for innovation should be distributed among individuals.

In contrast, Brazil scores highly on the Power Distance dimension (Hofstede Insights, 2025), reaching 69 on a scale from 0 to 100. This indicates that Brazilian culture tends to value the presence of hierarchies and the acceptance of power inequalities, a condition that proves contrary to innovation (Wheatley, 2001).

Secondly, the Individualism dimension relates to proactivity, autonomy, and independence, emphasizing individual responsibility and a focus on each person's unique contribution (Hofstede, 2001). Given the UK's high score on the Individualism dimension (Hofstede Insights, 2025), the British are known for valuing rewards based on merit and personal effort, traits that align with innovation (Evason, 2021). This characteristic suggests that British Individualism is associated with a culture of autonomy and a tendency to lead in problem-solving and finding solutions. Lee and Peterson (2000) argue that Individualism promotes independence and increases the willingness to take risks and innovate.

In turn, Brazil scores low on the Individualism dimension, revealing itself as a collectivist culture. In this context, people identify with groups that provide trust and mutual support, suggesting that Brazilians value the establishment of lasting and reliable relationships (Hofstede Insights, 2025). This orientation may stem from the spontaneous, cheerful, and friendly qualities that are frequently attributed to Brazilians. Thus, although collectivism presents its advantages in other perspectives, it can camouflage individual talents and inhibit innovative proactivity, encouraging people to follow what is imposed on the majority and adhere to the *status quo* (Ribeiro, n.d.).

Third, the cultural dimension Uncertainty Avoidance deals with how a society

faces the existence of an uncertain and unpredictable future, assessing the degree of discomfort individuals feel in the face of this possibility, implying a greater propensity for risk-taking in the case of a low score. The UK's lower score on this dimension compared to Brazil indicates that the British are more willing to take risks and consider change as an integral part of life, demonstrating adaptability and an understanding that plans may change over time, focusing on outcomes (Hofstede Insights, 2025).

The propensity for innovation is linked to experimentation, in which people are inclined to test new ideas, explore the world with a receptive mind, and consider new possibilities. These individuals are called early adopters of novelty, seeking new places, ideas, and learning experiences (Dyer, Gregersen, & Christensen, 2019).

Fourth, the cultural dimension of Masculinity addresses the valuing of competition, achievement, success, assertiveness, persistence, and pragmatism. Thus, the UK's higher score in this dimension compared to Brazil points to a greater propensity for innovation on the part of the British. Furthermore, a notable characteristic of the British is their resilience and determination to persevere in the face of adversity, taking pride in hard work and social progress, and adopting the motto *keep calm and carry on* (Evason, 2021). This quality may link the British to innovative traits, considering that Dweck (2006) points to effort and persistence as key elements in fostering innovation.

Fifth, the cultural dimension of Long-term Orientation indicates more pragmatic societies that aim for a balance between preserving traditions and seeking change, accepting it as part of the process of preparing for the future, which is considered an attribute of innovative individuals (Wheatley, 2001). Thus, the higher score of the United Kingdom in the Long-term Orientation dimension compared to that of Brazil is an indication of easier acceptance of change and innovation as a preparation for the future.

Finally, the cultural dimension of Indulgence is associated with optimism, a typical characteristic of innovative individuals (Dyer, Gregersen, & Christensen, 2019; Wheatley, 2001). Given the UK's high score on this dimension, the British have less restraint on their desires and impulses related to pleasure, leisure, and innovation, characterizing positive attitudes and a tendency towards optimism (Hofstede Insights, 2025). Both the UK and Brazil are considered indulgent countries, with scores above 50 on the cultural dimension of Indulgence; the UK (69) has a higher score than Brazil (59).

For each of the five variables chosen to represent perceptions of innovation, hierarchical regression was performed, controlling for age and education. The statistically significant difference in explained variance increased by 5.2%, 1.2%, 0.1%, 0%, and 4% for variables Q11, Q44, Q158, Q159, and Q163, respectively, with the inclusion of country as a predictor. These data indicate that the country of origin of the research participants only failed to increase the explanatory power for variable Q158, precisely the variable for which no statistically significant difference was initially identified between countries. Thus, the results can be interpreted as unbiased by differences in age and education.

Based on the cross-cultural comparison above, it is possible to attest to a substantial compatibility between the characteristics of the national culture of Brazil and the United Kingdom and the perceptions of their citizens regarding innovation. These results reinforce the relevance of researching innovation beyond the organizational and economic levels, adopting a cross-cultural perspective, which

is not yet so commonly explored in the literature on the subject of innovation. Thus, this study suggests that national culture should not be neglected in attempts to explain innovative values, attitudes, and behaviors.

4.4 Implications for human capital development and organizational management

The results suggest that cultures with higher Individualism, Masculinity, Long-term Orientation, and Indulgence, and lower Power Distance and Uncertainty Avoidance, tend to present more positive perceptions of innovation. For talent management, this implies greater ease in attracting, identifying, and retaining creative, autonomous, and experimentation-oriented professionals, while cultures less favorable to innovation may require more intensive practices to encourage initiative, collaboration, and tolerance for error (Silva, Weber, Moreira, & Silva, 2022; Nguyen, Le, Tran, & Lam, 2021).

Regarding employee development initiatives, employees in cultural contexts that value creativity, science, and technology tend to demonstrate greater openness to continuous learning, training in new skills, and development of skills aimed at innovation. Therefore, training, upskilling, and innovative leadership development programs can be more effective in these cultural environments (Bambi & Pea-Assounga, 2025; Rosyidi, Mudzakkir, Choirunnisa, Lailiyah, & Indrio, 2024; Javed, Khan, Michalk, Khan, & Kamran, 2023).

In the context of organizational learning, lower levels of Power Distance and Uncertainty Avoidance favor the exchange of knowledge, constructive questioning, and learning based on experimentation. As a consequence, organizations in cultures more favorable to innovation tend to create environments where knowledge sharing and collective learning occur more intensely, strengthening organizational adaptation (Mu, Workneh, & Zhang, 2025; Stock & Zacharias, 2023; Javed, Khan, Michalk, Khan, & Kamran, 2023).

From a workforce development perspective, the findings also suggest that managers and policymakers should avoid adopting uniform approaches to innovation-oriented talent development across different cultural contexts. Instead, workforce strategies may be more effective when aligned with prevailing cultural characteristics. In cultures characterized by higher Power Distance or Uncertainty Avoidance, innovation initiatives could be supported through structured mentoring systems, psychologically safe environments, gradual experimentation programs, and clear mechanisms for evaluating and implementing new ideas.

Conversely, in cultures with lower hierarchical barriers and greater tolerance for ambiguity, organizations may benefit from empowering employees through decentralized decision-making, cross-functional project teams, intrapreneurship programs, and flexible career paths that encourage exploration and initiative.

At the policy level, educational and professional development programs can be designed to strengthen competencies associated with creativity, problem-solving, and interdisciplinary collaboration while taking into account cultural norms that may influence participation, risk-taking, and knowledge exchange. Such culturally informed approaches may increase the effectiveness of investments in human capital and contribute to the development of innovation-ready workforces.

Finally, for innovation capability, positive perceptions of innovation resulting from these cultural characteristics may increase the willingness to explore new ideas, invest in technology, and transform knowledge into innovative products, processes, and business models. This way, national culture may act as a context that can facilitate

or constrain the development of organizational capabilities necessary for sustainable innovation and competitive advantage (Xu, Yang, Yuan, & Jia, 2023; Nguyen, Le, Tran, & Lam, 2021).

5. Conclusion

The primary objective of the study was achieved, namely, to explore differences between Brazilians and Britons regarding their perceptions of innovation and discuss these differences based on the cultural characteristics of the two countries. Furthermore, the specific objectives were met by establishing and interpreting correlations between perceptions of innovation and sociodemographic characteristics, and by comparing Brazilians and Britons regarding their perceptions of innovation. The hypothesis raised was empirically tested and partially accepted, and indicated that the British present more positive perceptions of innovation than Brazilians, a result consistent with the cultural dimensions of the two countries.

Education and income were the sociodemographic characteristics most strongly associated with positive perceptions of innovation, indicating that individuals with higher levels of education and income present more positive perceptions of innovation in both countries. To a lesser extent, sex was also associated with innovation, indicating that males tend to have more positive perceptions of innovation. Finally, age did not show a clear correlation with perceptions of innovation.

Therefore, this research reinforces that national culture is compatible with individuals' perceptions of innovation. It is important to emphasize that this study does not consider national culture to be the main or exclusive reason for more or less positive perceptions of innovation, but rather sought to highlight the need to include cultural variables in attempts to understand innovative values, attitudes, and behaviors within societies.

Despite the contributions of this study, some limitations should be acknowledged when interpreting the findings. First, the analysis relies on secondary data obtained from the World Values Survey (WVS), which inevitably constrains the scope of the investigation to the variables available in the database. Although the WVS provides high-quality, internationally comparable data collected through rigorous methodological procedures, it was not specifically designed to assess perceptions of innovation. Consequently, the present study had to operationalize innovation-related perceptions using a limited set of indicators associated with attitudes toward creativity, science, and technology.

While these dimensions are theoretically relevant and frequently linked to innovation processes, they do not encompass the full complexity of how individuals understand, evaluate, and engage with innovation. Future studies could benefit from the use of dedicated innovation-oriented instruments capable of capturing a broader range of cognitive, affective, and behavioral dimensions associated with innovation.

An important methodological consideration concerns the interpretation of the relationship between differences in perceptions of innovation and national cultural characteristics. Although the observed cross-national differences were theoretically consistent with Hofstede's cultural dimensions, the present study was not designed to establish causal relationships. The analyses were based on cross-sectional data and focused on identifying statistically significant differences between countries rather than testing predictive or causal models.

Consequently, the alignment between innovation-related perceptions and cultural characteristics should be interpreted as an association at the theoretical and contextual

level, rather than as evidence that specific cultural dimensions directly cause particular perceptions of innovation. Other contextual, institutional, educational, economic, and historical factors may also contribute to the observed differences. Maintaining this distinction is essential for methodological rigor, as it prevents overinterpretation of the findings while preserving the value of the study in highlighting meaningful patterns of correspondence between national cultural profiles and innovation-related attitudes. Future research employing longitudinal, multilevel, or causal modeling approaches could provide a more robust assessment of the mechanisms through which cultural factors may influence perceptions of innovation.

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