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Article

Perceptions of innovation in Brazil and Sweden: A cross-cultural comparison and its implications for human capital development and organizational management

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Abstract: Although the literature widely explores innovation, it remains under-researched from a cross-cultural perspective that considers associations between national cultures and values, attitudes, and behaviors. Most studies also rely on objective indicators such as patent counts, research and development investments, and university quality. While relevant, these metrics do not fully capture the subjective dimensions of innovation. Focusing on citizens from a developing country and a developed country, this study explored differences in perceptions of innovation between Brazilians and Swedes, discussing them in light of cultural characteristics, human capital development, and organizational management. The sample included 1,486 Brazilians and 1,206 Swedes, and the authors analyzed the data using correlation and comparison methods. Innovation variables included creativity, science, and technology, while Hofstede's six dimensions characterized national cultures. Sex was the sociodemographic characteristic most frequently associated with positive perceptions of innovation, with men in both countries holding more favorable views. Higher levels of education and income were also associated with more positive perceptions. Swedes held more positive perceptions of innovation than Brazilians. Overall, the results suggested that Brazil's and Sweden's cultural characteristics align with their citizens' perceptions of innovation. In practical terms, the study offers guidance for development, training, and talent management strategies across different cultural contexts.

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

1. Introduction

Innovation is a learning and exploration process that generates new products, techniques, organizational forms, and changes in institutions, markets, and services. It can be technological or social and generally has the potential to generate wealth (Tidd & Bessant, 2018). Although the literature has explored innovation widely, it has largely focused on organizational and macroeconomic levels (Athayde et al., 2026; Athayde & Salgado, 2026; Athayde & Coutinho, 2023).

Behind organizational, sectoral, or national innovation are innovative individuals who can see the world from different perspectives (Wheatley, 2001). These individuals tend to exhibit attributes such as adaptability, creativity, curiosity, inspiration, intuition, leadership, motivation, boldness, perseverance, questioning, a revolutionary spirit, problem-solving skills, and technological mastery (Dyer, Gregersen, & Christensen, 2019). Understanding their profiles and the factors that influence them matters for both personal development and a

nation's economic development (Sacramento & Teixeira, 2019).

Studies on innovation are less frequent when they adopt a cross-cultural approach that considers the potential link between national culture and values, attitudes, and behaviors (Araújo, Correia, & Câmara, 2022). This theoretical-empirical gap motivated an investigation into perceptions of innovation in Brazil and Sweden, countries that cross-cultural studies identify as culturally distinct (Hofstede Insights, 2026).

Beyond cultural differences, the two countries rank very differently in global innovation rankings. According to the Global Innovation Index (WIPO, 2025), which ranks the most innovative countries each year, Sweden ranks 2nd, while Brazil ranks 52nd. The ranking utilizes objective indicators such as research and development investments, university quality, the impact of scientific publications, and the number of registered patents. In contrast, this research compares Brazil and Sweden from a cross-cultural perspective, focusing on perceptions of innovation, a dimension the literature explores less than objective macroeconomic indicators (Athayde et al., 2026).

Although the literature acknowledges the impact of national culture on innovation at the individual, organizational, economic, and national levels, limitations regarding its operationalization persist. Most studies rely on objective indicators that, while providing concrete evidence, may miss relevant subjective dimensions, such as judgments about creativity, science, and technology, which are intrinsically linked to innovation (Li, Liu, & Luo, 2020).

Recent authors have highlighted this gap, suggesting that perceptions of innovation may diverge from objective metrics and thus warrant specific investigation. Consequently, while the impact of national culture on innovation is well documented, it remains underexplored when innovation is measured through subjective perceptions. Understanding these perceptions can reveal cultural barriers and incentives that traditional indicators miss, broadening our understanding of the phenomenon and its implications for innovation policy and management across cultural contexts (Athayde et al., 2026; O'Reilly, Tushman, & Harreld, 2022).

Hofstede (2001) defines culture as the beliefs, values, and thought patterns shared by members of a society that influence how they perceive and assign meaning to various aspects of life. He views it as the collective programming of the mind. National culture is a key determinant of values, attitudes, and behaviors (Végh, Szabó, & Kovács, 2025).

However, cross-cultural researchers do not assume that all individuals within a country are identical; instead, they work with probabilities. This means certain attributes are more likely to be found among individuals from a specific culture, without disregarding subcultures. National cultures are therefore treated as predominant sets of characteristics (Vignoles et al., 2016), a perspective this study also adopts.

In this context, this research was guided by the following question: *What differences exist between Brazilians and Swedes in their perceptions of innovation? To what extent are these differences consistent with the characteristics of Brazilian and Swedish national cultures?* Thus, the general objective was to explore differences between Brazilians and Swedes in their perceptions of innovation and discuss them in light of the two countries' cultural characteristics and their implications for human capital development and organizational management.

To achieve this general objective, two specific objectives were defined: (i) to analyze the correlations between Brazilians' and Swedes' perceptions of innovation and their sociodemographic characteristics, including sex, age, number of children, education level, and income level; and (ii) to discuss the identified

differences in light of the characteristics of Brazilian and Swedish national cultures and their implications for human capital development and organizational management.

This study's findings may refine previous cross-cultural comparisons between Brazil and other innovation benchmarks, such as the United States (Athayde & Coutinho, 2023) and the United Kingdom (Athayde et al., 2026). These earlier cross-cultural comparisons between Brazil, the United States, and the United Kingdom utilized different samples of Brazilians, thereby providing independent evidence.

To characterize Brazilian and Swedish cultures, the six cultural dimensions proposed by Geert Hofstede, widely adopted in cross-cultural studies, were used: (a) Power Distance, (b) Individualism, (c) Masculinity, (d) Uncertainty Avoidance, (e) Long-Term Orientation, and (f) Indulgence. This taxonomy was chosen for four reasons: (a) many alternative models feature a larger number of dimensions, making them more complex and less parsimonious; (b) several models include dimensions already proposed by Hofstede, resulting in overlap; (c) Hofstede's model is the most well-known and widely adopted in international literature; and (d) although critics argue that the model relies on data collected in the 1970s, subsequent studies using new data have found similar results and correlations of equivalent strength (Sent & Kroese, 2022).

To represent Brazilian and Swedish perceptions of innovation, we used five variables from the World Values Survey (WVS) database, a global survey on changes in individuals' political and sociocultural views (WVS, 2026). These variables focus on creativity, science, and technology, dimensions directly related to innovation in the literature. Although innovation is a multidimensional construct involving processes, outcomes, organizational capabilities, and institutional contexts, perceptions of it are strongly influenced by judgments regarding these elements. Since Schumpeter (1934), innovation has been associated with new combinations that drive economic and social change, with the generation of new ideas serving as a central element. In this sense, creativity is recognized as an antecedent to innovation because it generates original and useful ideas that can be transformed into new products, services, processes, or business models (Yang & Xu, 2025).

Science and technology also occupy a central position in classical and contemporary conceptions of innovation. Schumpeter (1942) highlighted technological advancement as a source of economic transformation, while Rogers (2003) defined innovation as an idea, practice, or object perceived as new, emphasizing the role of individual perceptions in its adoption. Science and technology therefore serve as key mechanisms for generating, developing, and disseminating new ideas.

Recent studies further indicate that science- and technology-intensive environments strengthen innovative capacity, reinforcing the link between scientific and technological progress and innovation. Thus, attitudes favorable to science and technology tend to reflect positive evaluations of the mechanisms that enable innovation. Although perceptions of innovation are broader than isolated attitudes toward creativity, science, and technology, these dimensions capture central aspects of the phenomenon and serve as theoretically consistent indicators for its operationalization (Nijstad, Calic, Faria, Grimpe, & Kauppila, 2026). This operationalization did not aim to measure innovation in its full conceptual complexity, but rather to understand how individuals perceive and evaluate creativity, science, and technology as foundations and drivers of innovation processes.

2. Literature review

2.1 Key characteristics of innovative people

The literature links specific individual characteristics to the innovative profile. In general, innovative individuals exhibit entrepreneurial traits, a strong need for autonomy, proactivity, and a willingness to take risks (Barbosa, 2015). A propensity for innovation also manifests in skills such as creativity, optimism, proactivity, and the courage to face challenges. Entrepreneurship centers on using innovation to create, renew, or redefine products, processes, and markets. Beyond developing new ideas and technologies, innovative individuals may also utilize existing technologies in novel ways (Porter, 1989).

These individuals are driven by curiosity, the pursuit of new knowledge, and an interest in the unknown. They can also observe people and data, identify opportunities, and take calculated risks, evaluating and mitigating them in their decision-making (Wheatley, 2001).

In *The Innovator's DNA*, Dyer, Gregersen, and Christensen (2019) highlight skills such as adaptability, creativity, curiosity, inspiration, intuition, leadership, motivation, boldness, perseverance, questioning, revolutionizing, problem-solving, and technological proficiency. Furthermore, studies at the intersection of psychology and management have sought to identify personality traits associated with creative and innovative potential. Notable among these are extraversion, agreeableness, persistence, self-confidence, and a willingness to experiment (Hammond et al., 2011).

Because this research aims to explore differences between Brazilians and Swedes in their perceptions of innovation and to discuss these differences in light of both countries' cultural characteristics, the following section presents the key characteristics of Brazilian and Swedish national cultures.

2.2 Characteristics of Brazilian and Swedish cultures according to Hofstede

To characterize Brazilian and Swedish national cultures, this research used the six cultural dimensions proposed by Geert Hofstede (Hofstede, 2011) and their respective scores on a 0-100 scale (Hofstede Insights, 2026). Scores below 50 were considered low, and those above 50 were considered high. The dimensions analyzed were: Power Distance, Individualism, Masculinity, Uncertainty Avoidance, Long-Term Orientation, and Indulgence. We chose this model because of its widespread use in cross-cultural studies (Sent & Kroese, 2022).

Power Distance refers to the degree to which a society accepts inequality and the asymmetrical distribution of power (Hofstede, 2011). Brazil scores 69 points, indicating a greater acceptance of hierarchies and social inequalities. In this context, respect for elders and authority figures is often valued, and within organizations, leaders may assume greater responsibility for decision-making. Status and power also play a significant role in signaling social standing. This higher concentration of power can reduce participation in problem-solving and the proposal of innovative ideas (Hofstede Insights, 2026).

By contrast, Sweden scores 31 points, indicating lower acceptance of hierarchy, a greater emphasis on equality, and greater decentralization of power. In the organizational environment, superiors tend to be accessible, subordinates expect to be consulted, and relationships are more informal and participatory, fostering dialogue, collaboration, and the proposal of new ideas (Hofstede Insights, 2026).

Individualism concerns how individuals relate to social groups. Individualistic societies value individual autonomy, whereas collectivistic societies emphasize strong bonds, loyalty, and belonging to cohesive groups (Hofstede, 2011). Brazil scores 38 points, indicating a more collectivist orientation

characterized by strong family ties and a value placed on trust and long-lasting relationships, including within the organizational environment. Sweden, with 71 points, is more individualistic, with hiring and promotion decisions based on merit and proactive behaviors (Hofstede Insights, 2026).

Masculinity refers to values associated with competition, assertiveness, and performance. Societies with high scores tend to value competitiveness, pragmatism, and persistence, whereas societies with low scores emphasize collaboration, quality of life, and well-being (Hofstede, 2011). Brazil has an intermediate score of 49, while Sweden records only 5 points, characterizing it as a strongly feminine society. In this context, key features include pursuing work-life balance, equality, solidarity, and conflict resolution through dialogue and consensus (Hofstede Insights, 2026).

Uncertainty Avoidance refers to how societies deal with unpredictable and ambiguous situations (Hofstede, 2011). Brazil scores high at 76, indicating a greater need for rules, predictability, and formal structures to reduce uncertainty. Sweden, with 29 points, shows greater tolerance for ambiguity and greater comfort with uncertainty and risk-taking (Hofstede Insights, 2026).

Long-Term Orientation assesses how societies relate to the past, present, and future. Higher scores indicate greater adaptability to change and a future-oriented mindset, while lower scores reflect a greater emphasis on traditions, norms, and established practices (Hofstede, 2011). Brazil and Sweden show intermediate scores of 44 and 53 points, respectively, indicating no clear preference in this dimension (Hofstede Insights, 2026).

Finally, Indulgence refers to the degree to which societies allow the gratification of desires related to pleasure, leisure, and fun, as opposed to contexts that are more restrictive and regulated by social norms (Hofstede, 2011). Brazil and Sweden score relatively high, 59 and 78 points, respectively, with Sweden more indulgent. In both societies, people tend to value leisure, positive attitudes, and optimism more and face fewer restrictions on gratifying personal desires (Hofstede Insights, 2026). **Table 1** summarizes Brazil's and Sweden's scores across the six national culture dimensions.

Table 1. National culture dimensions

Cultural dimension	Brazil	Sweden
Power Distance	High (69)	Low (31)
Individualism	Low (38)	High (71)
Masculinity	Intermediate (49)	Low (5)
Uncertainty Avoidance	High (76)	Low (29)
Long-Term Orientation	Intermediate (44)	Intermediate (53)
Indulgence	High (59)	High (78)

Source: Adapted from Hofstede Insights (2026)

2.3 Hypothesis development

The hypothesis of this study is grounded in the following arguments: (a) lower Power Distance characterizes societies where inequalities are less naturalized, fostering greater decentralization of power and freedom to innovate and make decisions (Hofstede, 2011); (b) higher Individualism is associated with autonomy and proactivity, characteristics of innovative individuals (Dyer, Gregersen, & Christensen, 2019); (c) lower Uncertainty Avoidance implies a greater willingness to take risks, also typical of innovative individuals (Wheatley, 2001); (d) higher Long-Term Orientation characterizes societies that are more

open to change and innovation as a way of preparing for the future (Hofstede, 2011); and (e) higher Indulgence is linked to optimism, which, in the context of innovation, is associated with persistence in experimenting with something new (Dyer, Gregersen, & Christensen, 2019).

Based on the literature regarding the characteristics of innovative individuals and the cultural differences between Brazil and Sweden, the following hypothesis was formulated:

H1: Because Sweden exhibits lower Power Distance, higher Individualism, lower Uncertainty Avoidance, higher Long-Term Orientation, and higher Indulgence than Brazil, Swedes hold more positive perceptions of innovation than Brazilians.

We did not include the Masculinity dimension in the hypothesis because it points in a different direction. Higher scores in this dimension are associated with competition, pragmatism, achievement, and success, characteristics compatible with innovation. Sweden, however, exhibits lower Masculinity than Brazil, reflecting a more feminine culture focused on social well-being and quality of life. This characteristic is consistent with the country's high level of human development (World Population Review, 2026).

Because this study did not treat Hofstede's cultural dimensions as independent or predictor variables, it used them instead to discuss the differences observed between Brazilians and Swedes in their perceptions of innovation. Thus, in light of Hypothesis 1 (H1), the cultural characteristics of Brazil and Sweden are expected to align with their citizens' perceptions of innovation.

3. Materials and methods

This study uses a quantitative approach, in which data are quantified and analyzed using statistical methods to characterize populations and phenomena (Knechtel, 2014). Non-parametric correlation tests examined the relationship between Brazilians' and Swedes' sociodemographic characteristics and their perceptions of innovation, and non-parametric comparison tests identified statistically significant differences between the two groups.

The sample included 1,486 Brazilians and 1,206 Swedes. The data came from the World Values Survey (WVS), Wave 6, Version v2018-09-12, a global survey on changes in individuals' political and sociocultural views, covering socioeconomic and demographic aspects. Since the 1980s, social scientists affiliated with academic institutions in various countries have conducted the WVS, which collects data primarily through questionnaires administered at participants' homes, using scientific sampling and anonymity-assurance procedures. Participants record responses on paper questionnaires or via Computer-Assisted Personal Interviewing (CAPI) (WVS, 2026). Fieldwork for Brazil took place in 2014 and for Sweden in 2011 (Inglehart et al., 2014).

The WVS undergoes consistency checks and data-cleaning procedures. Records from participants with more than 20% of responses marked as "don't know" or "refusal to answer" are discarded. This removes the entire record rather than statistically imputing the missing responses. Responses of "don't know" are identified with the code "-1"; "no response" or "refusal to answer" with the code "-2"; "not applicable" with the code "-3"; "question not asked in the country" with the code "-4"; and "missing value" (or absence of a response for any other reason) with the code "-5". In SPSS (Statistical Package for the Social Sciences), these codes are treated as missing values and are excluded from calculations.

Of the 294 variables available in the WVS database, we selected five for their direct relevance to the study's subject, creativity, science, and technology, dimensions associated with the innovation construct. **Table 2** presents these variables, along with the five sociodemographic characteristics analyzed.

Table 2. Study variables

Variable code in this study	Variable code in the WVS database	Description	Variable type
Creativity	V15	Importance respondents give to teaching creativity to children.	Perceptions of innovation
Future changes	V68	Respondents' opinion on future changes that would give more importance to technological development.	
Impact on life	V192	Respondents' agreement with the statement: "Science and technology are making our lives healthier, easier, and more comfortable".	
Opportunities	V193	Respondents' agreement with the statement: "Due to science and technology, the next generation will have more opportunities".	
Impact on the world	V197	Respondents' opinion on science and technology: "Is the world better or worse because of them?"	
Sex	V240	Sex	Sociodemographics
Age	V242	Age	
Number of children	V58	Number of children	
Education	V248	Education	
Income	V239	Income	

Source: Adapted from WVS (2026)

For the Brazilian sample, the valid sample sizes were 1,486, 1,430, 1,437, 1,437, and 1,452 for variables V15, V68, V192, V193, and V197, respectively. For the Swedish sample, the valid sample sizes were 1,206, 1,152, 1,179, 1,174, and 1,171 for variables V15, V68, V192, V193, and V197, respectively.

For the creativity question (item V15 of the questionnaire), respondents were presented with a list of qualities and asked to select those they considered most important to encourage and teach their children. Participants thus had two response options: to mark creativity as one of these qualities or not. For the question regarding future changes (item V68 of the questionnaire), participants were asked for their opinion on a three-point scale in response to the question: "If future changes place greater emphasis on technology, would you consider this a good thing, a bad thing, or a matter of indifference?".

For the question on life impact (item V192 of the questionnaire), respondents were asked to indicate their level of agreement, on a scale of 1 to 10, where 1 represented complete disagreement and 10 complete agreement, with the statement: "Science and technology are making our lives healthier, easier, and more comfortable". For the question on opportunities (item V193 of the questionnaire), respondents indicated their level of agreement on a scale of 1 to 10, where 1 represented complete disagreement and 10 complete agreement, with the statement: "Due to science and technology, the next generation will have more opportunities".

Finally, for the global impact question (item V197 of the questionnaire), respondents were asked: "Is the world better or worse because of science and technology?" The scale ranged from 1 to 10, with 1 representing "much worse" and 10 "much better".

We analyzed the data using IBM® SPSS® 20.0 (Statistical Package for the Social Sciences). Following Field's (2013) guidelines, we first examined variable normality. Because the data from the two countries covered by this study showed a non-normal distribution, we conducted non-parametric correlation tests between perceptions of innovation and sociodemographic characteristics. **Table 3** summarizes the statistical tests used in the correlation analyses.

Table 3. Correlation tests adopted

	Sex(V240)	Age(V242)	Number of children(V58)	Education (V248)	Income(V239)
Creativity (V15)	Chi-square	Spearman	Spearman	Chi-square	Chi-square
Future changes (V68)	Mann-Whitney	Spearman	Spearman	Spearman	Spearman
Impact on life (V192)	Mann-Whitney	Spearman	Spearman	Spearman	Spearman
Opportunities (V193)	Mann-Whitney	Spearman	Spearman	Spearman	Spearman
Impact on the world (V197)	Mann-Whitney	Spearman	Spearman	Spearman	Spearman

Source: Authors

Next, we conducted statistical tests to compare Brazilians' and Swedes' perceptions of innovation. Following Field's (2013) guidelines, **Table 4** summarizes the statistical comparison tests used.

Table 4. Comparison tests adopted

Perceptions of innovation	Statistical test adopted
Creativity (V15)	Chi-square
Future changes (V68)	Mann-Whitney
Impact on life (V192)	Mann-Whitney
Opportunities (V193)	Mann-Whitney
Impact on the world (V197)	Mann-Whitney

Source: Research data

Thus, this study employed correlation tests at the individual level and comparison tests at the national level. Finally, the results were discussed in light of Hofstede's Cultural Dimensions Theory, and implications for human capital development and organizational management were presented.

Hofstede's model served as the theoretical framework for interpreting the observed differences in perceptions of innovation between Brazilians and Swedes. Consequently, the study did not use the cultural dimensions as independent variables, since it compares only two countries. Statistically testing the effect of cultural variables on innovation would require including more countries, since, in this type of analysis, the cases (n) represent countries rather than individuals (Tung & Verbeke, 2010).

All analyses were conducted without applying survey weights. Accordingly, the reported means, correlations, and differences between Brazil and Sweden describe the analyzed samples, and generalizations to the respective national populations were made with caution. We acknowledge that differences in fieldwork timing may also affect comparability, as respondents' answers may reflect the social, economic, and political circumstances prevailing during each country's survey period.

4. Results and discussion

4.1 Characterization of the samples

The Brazilian and Swedish samples showed a balanced distribution of men and women, with a slight female predominance in Brazil. **Table 5** summarizes the other sociodemographic characteristics (age, number of children, education, and income). The original WVS dataset indicates that the education and income scales are adjusted to each country's context.

Table 5. Sociodemographic characteristics of the samples

Sociodemographic characteristic	Brazil ($N = 1{,}486$)	Sweden ($N = 1{,}206$)
Sex (V240)	Male: 47.7% Female: 52.3%	Male: 50.0% Female: 50.0%
Age (V242)	Mean 42.98 years	Mean 47.62 years
Number of children (V58)	Mean 1.97 children	Mean 1.44 children
Education (V248)*	Mean 4.99	Mean 6.55
Income (V239)**	Mean 4.42	Mean 5.23

Note. *Scale from 1 to 9; **scale from 1 to 10.
Source: Research data.

The Brazilian sample typically consisted of individuals aged 43, with two children, a high school education, and a middle income. Among the Swedes, the typical age was 47, with an average of 1.44 children, higher education, and a middle income.

Table 6 presents the respondents' perceptions of innovation. For item V15, which concerns creativity, participants selected the qualities they considered most important to teach their children from a list of options. Since the WVS scale is inverted, lower mean scores indicate a higher valuation of creativity.

In item V68, respondents evaluated whether a greater future emphasis on technology would be good, bad, or a matter of indifference. Here, too, the scale is inverted, meaning that lower mean scores indicate a more positive assessment of technology.

Items V192 and V193 were rated on scales ranging from 1 to 10, representing complete disagreement to complete agreement. The first measures the perception that science and technology make life healthier, easier, and more comfortable, while the second assesses the expectation that they will provide more opportunities for future generations. Finally, item V197 asks respondents to rate, on a scale of 1 to 10, whether the world is worse or better due to science and technology, with 1 corresponding to "much worse" and 10 to "much better".

Table 6. Perceptions of innovation

Perceptions of innovation	Brazil ($N = 1{,}486$)		Sweden ($N = 1{,}206$)	
	Mean	SD	Mean	SD
V15 (Creativity): Importance respondents place on teaching creativity to children	1.76	0.43	1.53	0.50
V68 (Future changes): Respondents' opinions on future changes that prioritize technological development	1.36	0.66	1.71	0.77
V192 (Impact on life): Respondents' agreement with the statement: "Science and technology are making our lives healthier, easier, and more comfortable"	7.01	2.84	7.54	2.23
V193 (Opportunities): Respondents' agreement with the statement: "Thanks to science and technology, the next generation will have more opportunities"	7.58	2.64	7.99	2.05
V197 (Impact on the world): Respondents' opinions on science and technology: "Is the world better or worse because of them?"	6.31	3.03	7.55	2.01

Note. *SD = standard deviation.*
Source: *Research data.*

Among the five variables, Brazilian participants showed a more positive

perception of innovation in one, whereas Swedes did so for four. Section 4.3 will show whether these differences are statistically significant.

4.2 Correlations between sociodemographic variables and perceptions of innovation

Table 7 summarizes the associations between sociodemographic characteristics and perceptions of innovation in Brazil and Sweden, based on the correlation matrices.

Table 7. Correlations between sociodemographic characteristics and perceptions of innovation

Perceptions of innovation	Brazil	Sweden
V15 (Creativity)	Male sex; ↓Age; ↓Number of children	↓Age; ↓Number of children; ↑Education
V68 (Future changes)	Male sex	Male sex; ↑Income
V192 (Impact on life)	Male sex	Male sex; ↑Age; ↑Education; ↑Income
V193 (Opportunities)	No statistically significant correlations found	Male sex; ↑Age; ↑Number of children; ↑Education; ↑Income
V197 (Impact on the world)	Male sex; ↓ Number of children; ↑ Education	Male; ↑Age; ↑Education; ↑Income

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

A joint analysis of the correlations in the Brazilian and Swedish samples (**Table 7**) indicates that sex was the sociodemographic characteristic most frequently associated with positive perceptions of innovation, with a predominance of favorable associations among males. Education and income also showed consistent associations: higher levels were linked to more positive perceptions. Age, however, showed no clear pattern, as positive perceptions were associated with older individuals in some cases and younger ones in others. According to **Table 7**, the education and income associations were more widespread in Sweden than in Brazil.

In Brazil, the link between being male and holding more positive views on innovation can be discussed in light of the patriarchalism historically present in Brazilian culture. According to Del Priore (2014), this pattern stems from the Portuguese tradition of agricultural colonization based on slavery, in which women were subordinate and received little encouragement regarding education or participation in family decision-making. The association between men and greater encouragement of children's creativity may partly reflect this cultural pattern, which historically assigned women responsibility for the home and childcare, although this reality has shifted in recent decades (Costa, 2006). In this context, historical male responsibility for family decisions and financial provision may have fostered greater exposure to situations requiring problem-solving, decision-making, and exploring alternatives.

However, this result contrasts with recent evidence regarding female education in Brazil. Data from the Brazilian Institute of Geography and Statistics (IBGE) indicate that women have higher levels of education and greater access to higher education (IBGE, 2024). Nevertheless, inequalities in the division of domestic responsibilities persist. Strobino and Teixeira (2014) highlight that, despite advances observed in recent decades, women remain more closely associated with household chores, whereas men tend to prioritize professional responsibilities, a dynamic that contributes to inequalities in social recognition. The association between being male and holding positive perceptions of innovation, observed in both Brazil and Sweden, can also be interpreted through Hofstede's (2011) cultural dimension of Masculinity. This dimension encompasses attributes such as pragmatism, a drive for success,

competitiveness, persistence, and assertiveness, characteristics compatible with innovative behaviors (Dyer, Gregersen, & Christensen, 2019; Wheatley, 2001).

The results also indicated that higher levels of education and income were associated with more positive perceptions of innovation in both countries. Education plays a significant role in developing the knowledge and skills required for economic and social participation and is closely linked to income (OECD, 2024).

The link between education and innovation may stem from the development of cognitive, creative, and analytical skills that facilitate opportunity identification, solution formulation, and the implementation of change. Higher levels of education can also broaden one's understanding of innovation's importance for entrepreneurship, business competitiveness, and economic development. However, contextual factors such as access to resources, organizational culture, and networking opportunities may influence this relationship. Similarly, higher education levels tend to correlate with higher incomes, thereby increasing access to resources that can foster investment in new technologies, innovative projects, and continuing education. These associations do not imply causality. OECD reports also highlight that the relationship between education, income, and innovation depends on factors such as public policy, the regulatory environment, infrastructure, and institutional conditions.

Finally, age did not consistently associate with perceptions of innovation. In some cases, younger individuals reported more positive perceptions; in others, older individuals did. Although younger generations may have greater exposure to technological advancements, older individuals can benefit from accumulated knowledge and experience. Future studies could further analyze this relationship.

The discussions above, which incorporate historical factors to explore correlations between sociodemographic characteristics and perceptions of innovation, are hypotheses and should be treated only as potential factors associated with the identified relationships.

4.3 Comparison between Brazil and Sweden

Table 8 presents the results of statistical tests comparing Brazil and Sweden regarding perceptions of innovation.

Table 8. Comparison tests between Brazil and Sweden

Perceptions of innovation	Sig. (*p*-value)
V15 (Creativity): Importance respondents place on teaching creativity to children	$< 0.001^*$ (More favorable responses in Sweden)
V68 (Future changes): Respondents' opinions on future changes that prioritize technological development	$< 0.001^*$ (More favorable responses in Brazil)
V192 (Impact on life): Respondents' agreement with the statement: "Science and technology are making our lives healthier, easier, and more comfortable"	$< 0.001^*$ (More favorable responses in Sweden)
V193 (Opportunities): Respondents' agreement with the statement: "Thanks to science and technology, the next generation will have more opportunities"	$< 0.001^*$ (More favorable responses in Sweden)
V197 (Impact on the world): Respondents' opinions on science and technology: "Is the world better or worse because of them?"	$< 0.001^*$ (More favorable responses in Sweden)

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

Table 8 shows statistically significant differences ($p < 0.001$) between Brazil and Sweden across the five variables representing perceptions of innovation. Consistent with hypothesis H1, Swedes were expected to hold generally more positive perceptions, given that Sweden exhibits lower Power Distance, higher Individualism, lower Uncertainty Avoidance, stronger Long-Term Orientation, and

higher Indulgence than Brazil.

A joint analysis of **Tables 6 and 8** indicates that Swedes held more positive perceptions regarding four of the five variables analyzed (V15, V192, V193, and V197). Compared with Brazilians, they placed greater value on creativity and agreed more strongly that science and technology make life healthier, easier, and more comfortable; expand opportunities for future generations; and contribute to making the world a better place.

Brazilians showed a more positive perception only regarding variable V68, indicating greater agreement that an increasing emphasis on technology in the future would be beneficial. Taken together, the results support hypothesis H1.

One possible explanation for the result among Brazilians is that, in emerging economies, technological advancement is often seen as a tool for overcoming structural limitations and accelerating socioeconomic development. Faced with challenges in productivity, infrastructure, public services, education, and healthcare, Brazilians may associate technology more strongly with modernization and improvements in quality of life. Thus, Brazilians' greater optimism may reflect development expectations still tied to technological progress, whereas in highly developed economies, many of these benefits are already well established (Awuni & Kemmerling, 2024).

Nevertheless, Swedes held more positive perceptions across most variables, a result consistent with cultural differences between the two countries. Lower Power Distance characterizes societies with less rigid hierarchies and less centralized power (Hofstede, 2011). These characteristics can foster innovation by enhancing horizontal communication, idea exchange, and individual participation, creating conditions more conducive to proposing and implementing new solutions. As the introduction notes, these findings should not be interpreted as implying that Swedes are more innovative in behavior than Brazilians. The results suggest that Swedes have more positive perceptions of creativity, science, and technology, all of which the literature considers components of innovation, though they do not capture its full complexity.

Higher Individualism, in turn, is associated with valuing autonomy, independence, initiative, and proactivity (Hofstede, 2011). These traits can foster innovation by stimulating creativity, encouraging the pursuit of new opportunities, and promoting a willingness to take calculated risks (Dyer, Gregersen, & Christensen, 2019; Wheatley, 2001). In contrast, more collectivist contexts may, in certain situations, favor greater conformity to the group and less disruption of the status quo.

Lower Uncertainty Avoidance can also contribute to innovation because it is associated with greater tolerance for ambiguity, experimentation, and risk (Hofstede, 2011). In such contexts, people are more likely to view errors as learning opportunities, which fosters the creation of new solutions. Similarly, Dornelas (2007) links an innovative and entrepreneurial profile to identifying opportunities and calculating risks.

Long-term orientation is associated with a more strategic perspective on the future (Hofstede, 2011). This orientation can encourage ongoing investment in research, development, and education, while also stimulating planning, adaptation, and anticipation of future needs, elements crucial for innovation and competitiveness.

Higher Indulgence, meanwhile, is linked to placing greater value on life satisfaction and the freedom to pursue individual desires (Hofstede, 2011). These characteristics can foster more optimistic attitudes and an openness to experimentation, contributing to persistence in the face of challenges involved in creating and implementing new ideas.

Taken together, the results suggest compatibility between Brazil's and Sweden's cultural characteristics and their citizens' perceptions of innovation. The findings also reinforce the relevance of cross-cultural approaches to broadening the understanding of innovation from perspectives that remain underexplored in the literature.

4.4 Possible implications for human capital development and organizational management

The results suggest, first and foremost, that innovation management practices should not simply be replicated across distinct national contexts. The Swedes held more positive perceptions regarding four of the five variables analyzed, whereas the Brazilians were more favorable only regarding the benefits of placing greater future emphasis on technology.

For organizations operating in both Brazil and Sweden, it is recommended to maintain shared innovation objectives while adapting management mechanisms to the cultural context. In an international analysis of companies across 27 countries, Boubakri, Chkir, Saadi, and Zhu (2021) found that lower Power Distance and lower Uncertainty Avoidance, along with higher Individualism, Indulgence, and Long-Term Orientation, are associated with a higher likelihood of corporate innovation. These findings underscore the need to consider cultural characteristics when designing organizational practices, rather than assuming that the same management setup will yield equivalent results in different countries.

This contextualization is particularly relevant to mechanisms for worker participation. This article characterizes Brazil as having higher Power Distance and Uncertainty Avoidance than Sweden, whereas the Swedish context is marked by more decentralized and participatory relationships. Consequently, in Brazilian units, it may be especially beneficial to institutionalize explicit opportunities for workers to offer suggestions, such as through formal idea-submission channels or periodic meetings dedicated to proposing improvements and providing management feedback on received suggestions, rather than relying solely on subordinates to speak up spontaneously.

Sherf, Parke, and Isaakyan (2021) demonstrated that the perception that speaking up will have an impact is closely linked to worker voice, while psychological safety is strongly associated with reduced silence. Thus, making it clear that suggestions are considered and creating a safe environment for questioning are managerial interventions directly linked to worker participation.

Regarding human capital development, the link between higher levels of education and more positive perceptions of innovation in both countries suggests that organizations should expand access to skills development rather than using education or income levels as proxies for innovative potential. Shu and Wang (2023) found evidence that a greater supply of skilled workers is associated with new product development and that human-capital-intensive firms invest more heavily in training and R&D.

Complementarily, Ciarli, Kenney, Massini, and Piscitello (2021) show that innovation, digital technologies, and skills formation co-evolve, meaning adopting new technologies requires continuous skills development. In Brazil specifically, the comparatively more positive perception of technology's future importance could serve as a starting point for training programs that link digital skills to concrete innovation projects, thereby turning receptiveness to technology into an actual capacity for application.

Finally, the association between being male and holding more favorable views on innovation in both countries should not be interpreted as evidence of greater innovative capacity among men, nor used as a criterion for talent selection. Jin and Chua (2024) found that men and women have similar capacity for

generating creative ideas but noted that women tend to withhold their most novel ideas during the selection stage, partly because they fear negative social reactions. This tendency diminished when women were included among the evaluators. For management, a key implication is the need to ensure women participate in panels that evaluate and select innovative ideas, so differences in perception don't inadvertently translate into unequal opportunities within innovation processes.

The suggestions above should be viewed only as potential applications, since the study's results do not show that they will yield specific outcomes in Brazilian or Swedish organizations.

5. Final remarks

The study achieved its general objective by exploring differences between Brazilians and Swedes in perceptions of innovation and discussing them in light of both countries' cultural characteristics and their implications for human capital development and organizational management. The study also met its specific objectives by analyzing correlations between perceptions of innovation and sociodemographic characteristics and by comparing the two samples. The hypothesis was empirically supported, indicating that Swedes generally hold more positive perceptions of innovation than Brazilians, consistent with cultural differences between the countries.

Sex was the sociodemographic characteristic most frequently associated with positive perceptions of innovation, with men showing more favorable results in both countries. Education and income also showed consistent associations, indicating that higher levels correlate with more positive perceptions. Age, however, showed no clear pattern, as positive perceptions were associated with both older and younger individuals.

The results are expected to advance research on innovation and national culture and inform public policies that foster innovation in ways more sensitive to cultural specificities. This cross-cultural approach may also offer insights to organizations operating, or planning to operate, in different national contexts.

Although the study did not investigate causal relationships between national culture and perceptions of innovation because of the limited number of countries included, it sought to highlight the importance of incorporating cultural variables into understanding innovation. It emphasized subjective aspects of innovation, rather than the objective metrics already extensively explored in the literature. Furthermore, the analysis was limited to dataset variables directly related to the research topic. Consequently, including other indicators might yield different results. Future research should compare Brazil with other leading innovation nations, examine the relationship between age and perceptions of innovation more deeply, and develop explanatory models of innovative values, attitudes, and behaviors that incorporate cultural variables alongside other predictive factors.

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References

[1] Araújo, R. A. de M., Correia, T. de S., & Câmara, R. P. de B. (2022). Influence of environmental innovation on corporate sustainability in Latin American companies. Organizações & Sociedade, 29(101), 297-322. doi: https://doi.org/10.1590/1984-92302022v29n0013PT

[2] Athayde, A., Pereira, D., Dias, C., Paula, P. de, & Azevedo, A. (2026). A cross-cultural comparison of national perceptions of innovation between Brazil and the United Kingdom: Implications for human capital development and organizational management. Human Resources Management and Services - HRMS, 8(3), 1-22. doi: https://doi.org/10.18282/hrms5873

[3] Athayde, A. L. M., & Coutinho, H. I. S. (2023). Innovation individual characteristics: A cross-cultural comparison between Brazilians and Americans. Revista de Administração, Sociedade e Inovação, 9(1), 11-24. doi: https://doi.org/10.20401/rasi.9.1.665

[4] Athayde, A. L. M., & Salgado, S. V. A. (in press). Intersections between national culture and innovation: Theoretical-empirical gaps in the international literature. Revista de Administração da UFSM.

[5] Awuni, E. T., & Kemmerling, A. (2024). Taking Gerschenkron to the field: Attitudes towards digitalization hopes and fears about the future of work in Ghana. Telecommunications Policy, 48(2), Article 102680. doi: https://doi.org/10.1016/j.telpol.2023.102680

[6] Boubakri, N., Chkir, I., Saadi, S., & Zhu, H. (2021). Does national culture affect corporate innovation? International evidence. Journal of Corporate Finance, 66, 101847. doi: https://doi.org/10.1016/j.jcorpfin.2020.101847

[7] Ciarli, T., Kenney, M., Massini, S., & Piscitello, L. (2021). Digital technologies, innovation, and skills: Emerging trajectories and challenges. Research Policy, 50(7), 104289. doi: https://doi.org/10.1016/j.respol.2021.104289

[8] Costa, M. C. da. (2006). Ainda somos poucas: Exclusão e invisibilidade na ciência. Cadernos Pagu, (27), 455-459. doi: https://doi.org/10.1590/S0104-83332006000200018

[9] Del Priore, M. (2014). Histórias e conversas de mulher (2nd ed.). São Paulo, Brazil: Planeta.

[10] Dornelas, J. C. A. (2007). Empreendedorismo na prática: Mitos e verdades do empreendedor de sucesso. Rio de Janeiro, Brazil: Elsevier.

[11] Dyer, J., Gregersen, H., & Christensen, C. M. (2019). The innovator's DNA: Mastering the five skills of disruptive innovators. Brighton: Harvard Business Review Press.

[12] Field, A. (2013). Discovering statistics using IBM SPSS Statistics. London, England: Sage Publications.

[13] Hammond, M. M., Neff, N. L., Farr, J. L., Schwall, A. R., & Zhao, X. (2011). Predictors of individual-level innovation at work: A meta-analysis. Psychology of Aesthetics, Creativity, and the Arts, 5(1), 90–105. doi: https://doi.org/10.1037/a0018556

[14] Hofstede, G. (2011). Dimensionalizing cultures: The Hofstede model in context. Online Readings in Psychology and Culture, 2(1), 1-26. doi: https://doi.org/10.9707/2307-0919.1014

[15] Hofstede Insights. (2026). Country comparison tool. Retrieved April 1, 2026, from https://www.hofstede-insights.com/country-comparison/

[16] Inglehart, R., C. Haerpfer, A. Moreno, C. Welzel, K. Kizilova, J. Diez-Medrano, M. Lagos, P. Norris, E. Ponarin & B. Puranen et al. (eds.). 2014. World Values Survey: Round Six - Country-Pooled Datafile Version: www.worldvaluessurvey.org/WVSDocumentationWV6.jsp. Madrid: JD Systems Institute.

[17] Instituto Brasileiro de Geografia e Estatística (2024). Estatísticas de gênero: Indicadores sociais das mulheres no Brasil. Retrieved April 19, 2026, from https://www.ibge.gov.br/estatisticas/multidominio/genero/20163-estatisticas-de-genero-indicadores-sociais-das-mulheres-no-brasil.html?=&t=publicacoes

[18] Jin, M., & Chua, R. (2024). Which idea to pursue? Gender differences in novelty avoidance during creative idea selection. Organization Science, 35(6), 2223-2248. doi: https://doi.org/10.1287/orsc.2022.16176

[19] Knechtel, M. R. (2014). Metodologia da pesquisa em educação: Uma abordagem teórico-prática dialogada. Curitiba, Brazil: Intersaberes.

[20] Nijstad, B. A., Calic, G., Faria, P. de, Grimpe, C., & Kauppila, O.-P. (2026). Connecting creativity and innovation research: Building bridges to cross divides. Research Policy, 55(2), Article 105391. doi: https://doi.org/10.1016/j.respol.2025.105391

[21] Organization for Economic Co-operation and Development (OECD) (2024). Policy Brief. Adult skills and productivity: New evidence from PIAAC 2023. Retrieved September 16, 2026, from https://www.oecd.org/content/dam/oecd/en/publications/reports/2024/12/adult-skills-and-productivity-new-evidence-from-piaac-2023_805a88b8/8bc2c556-en.pdf?utm_source=chatgpt.com

[22] Porter, M. E. (1989). Vantagem competitiva: Criando e sustentando um desempenho superior. Rio de Janeiro, Brazil: Campus.

[23] Rogers, E. (2003). Diffusion of innovations (5th ed.). New York, NY: Free Press.

[24] Sacramento, P. M., & Teixeira, R. M. (2019). Inovação e aprendizagem de empreendedores no setor de turismo: Análise comparativa de casos de empresas de pequeno e médio porte na cidade de Aracajú-Sergipe. Revista Brasileira de Pesquisa em Turismo, 13(3), 121-139. doi: https://doi.org/10.7784/rbtur.v13i3.1586

[25] Schumpeter, J. A. (1934). The theory of economic development: An inquiry into profits, capital, credit, interest, and the business cycle. Cambridge, MA: Harvard University Press.

[26] Schumpeter, J. A. (1942). Capitalism, socialism and democracy. New York, NY: Harper & Brothers.

[27] Sent, E.-M., & Kroese, A. L. J. (2022). Commemorating Geert Hofstede, a pioneer in the study of culture and institutions. Journal of Institutional Economics, 18(1), 15-27. doi: https://doi.org/10.1017/S174413742000051X

[28] Sherf, E. N., Parke, M. R., & Isaakyan, S. (2021). Distinguishing voice and silence at work: Unique relationships with perceived impact, psychological safety, and burnout. Academy of Management Journal, 64(1), 114-148. doi: https://doi.org/10.5465/amj.2018.1428

[29] Shu, L., & Wang, W. (2023). Human capital and trademarks: Evidence from higher education expansion in China. Research Policy, 52(10), 104869. doi: https://doi.org/10.1016/j.respol.2023.104869

[30] Strobino, M. R. C., & Teixeira, R. M. (2014). Empreendedorismo feminino e o conflito trabalho-família: Estudo multicasos no setor de comércio de material de construção da cidade de Curitiba. Revista de Administração, 49(1), 59-76. doi:https://doi.org/10.5700/rausp1131

[31] Tidd, J., & Bessant, J. (2018). Innovation management challenges: From fads to fundamentals. International Journal of Innovation Management, 22(5), 1-13. doi: https://doi.org/10.1142/S1363919618400078

[32] Tung, R. L., & Verbeke, A. (2010). Beyond Hofstede and GLOBE: Improving the quality of cross-cultural research. Journal of International Business Studies, 41(8), 1259-1274. doi: https://doi.org/10.1057/jibs.2010.41

[33] Végh, M., Szabó, I., & Kovács, A. (2025). Innovation in your blood? Exploring the influence of culture on national-level innovation performance in the European Union. Journal of Innovation & Knowledge, 10(5), 1-12. doi: https://doi.org/10.1016/j.jik.2025.100791

[34] Vignoles, V. L., Owe, E., Becker, M., Smith, P. B., Easterbrook, M. J., Brown, R., . . . Bond, M. H. (2016). Beyond the "East-West"dichotomy: Global variation in cultural models of selfhood. Journal of Experimental Psychology: General, 145(8), 966-1000. doi: https://doi.org/10.1037/xge0000175

[35] Wheatley, M. J. (2001). We are all innovators. Leader to Leader, 20, 11-21.

[36] World Intellectual Property Organization (WIPO) (2025). Global Innovation Index 2025: Innovation at a crossroads. Geneva, Switzerland: World Intellectual Property Organization. Retrieved from https://www.wipo.int/global_innovation_index/

[37] World Population Review (2026). Human Development Index (HDI) by country 2026. Retrieved September 16, 2026, from https://worldpopulationreview.com/country-rankings/hdi-by-country

[38] World Values Survey (WVS) (2026). What we do. Retrieved April 1, 2026, from http://www.worldvaluessurvey.org/WVSContents.jsp

[39] Yang, Y., & Xu, H. (2025). Perception of AI creativity: Dimensional exploration and scale development. The Journal of Creative Behavior, 59(2), e70028. doi: https://doi.org/10.1002/jocb.70028