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CULTURAL DIMENSIONS AND PERCEPTION OF CORRUPTION IN INTERNATIONAL SOCIETIES

DIMENSÕES CULTURAIS E PERCEPÇÃO DA CORRUPÇÃO EM SOCIEDADES INTERNACIONAIS

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Abstract

This study aims to verify how cultural dimensions relate to the corruption perception index in international societies. We used information on the Corruption Perception Index (CPI) and Hofstede's Cultural Dimensions for a total of 63 countries over the years 2010 to 2022. The results show that cultural dimensions affect corruption perception, as: a) power distance reduces the corruption perception, and b) individualism, long-term orientation, and indulgence increase the corruption perception. Additionally, the results show that countries with a lower corruption perception are more affected by cultural dimensions.
Keywords: Corruption Perception. Cultural Dimensions. International Transparency.

Resumo

Este estudo tem como objetivo verificar como as dimensões culturais se relacionam com o índice de percepção da corrupção nas sociedades internacionais. Usamos informações sobre o Índice de Percepção da Corrupção (CPI) e Dimensões Culturais de Hofstede para um total de 63 países ao longo dos anos de 2010 a 2022. Os resultados mostram que as dimensões culturais afetam a percepção da corrupção, pois: a) a distância do poder reduz a percepção de corrupção e b) individualismo, orientação de longo prazo e indulgência aumentam a percepção de corrupção. Adicionalmente, os resultados mostram que os países com menor percepção de corrupção são mais afetados pelas dimensões culturais.
Palavras-chave: Percepção da Corrupção. Dimensões Culturais. Transparência Internacional.

Introduction

Globalization has presented several opportunities for illicit enrichment, with several challenges observed worldwide (Brown & Cloke, 2004). Economic internationalization and establishing a globally integrated financial market with little regulation provided new opportunities for obtaining illicit private gains through abuse of power in public and private environments (Cepik et al., 2009).

We understand that the behavior of the individual who uses his power to obtain private gains to the detriment of the public interest can be understood as corruption (Nye, 1967; Rodrigues & Barros, 2022). However, corruption reflects state inefficiency and constantly occurs due to the lack of accountability of public agents over the resources managed in various public spheres (Avritzer & Filgueiras, 2011).

For Brown and Cloke (2004), it is becoming increasingly difficult for the various national and international authorities to detect corrupt acts. Corruption thrives when monopoly power is combined with discretion and low accountability of public officials (Asongu, 2014).

Aspects such as country efficiency, justice, society participation, and legitimacy of government activities can influence a society's levels of corruption (Patel et al., 2020). According to Agyei-Mensah and Buertey (2019), corruption results from political and legal aspects, economic and structural policies, the role of institutions, human development, and globalization. Therefore, actions must be taken to minimize corrupt acts. However, beyond these factors, the culture itself seems to influence the corruption of a country.

Naturally, societies have unique and individual characteristics, which come from the evolution of human beings over the years, represented by their culture (Bell et al., 2009). Given this, studies were developed to understand different societies' cultural traits better. Hofstede (1980) sought to measure cultural differences in different economies worldwide. His research provided insights into six cultural dimensions: power distance, individualism, masculinity, uncertainty avoidance, long-term orientation, and indulgence. Each of these dimensions has its characteristics, and different countries have different values for each attribute. Hofstede's (1980) research was an essential contribution to understanding cultural differences, extensively used in academic literature.

Several studies have been conducted to understand better the aspects that affect corruption (Brol, 2016; Patel et al., 2020; Abreu & Gomes, 2021; Szymanski et al., 2021). However, we observe a gap in the effect of culture on corruption perception in societies. The present study advances by identifying how cultural traits are associated with the corruption perception in societies in a broad time frame and by identifying at which levels of corruption perception the culture most affect this attribute.

Thus, we present in this study the following research problem: What are the effects of cultural dimensions on corruption perception in international societies? Therefore, the present study aims to verify the effects of cultural dimensions on the corruption perception index of international societies over twelve years.

We intend that this study is relevant in the following aspects: a) in providing findings about cultural aspects that most influence the corruption perception by different countries; b) to contribute with information that helps to increase the corruption perception by society as a whole, to reduce the act of corruption; and c) that the insights provided can assist public policymakers in actions that reduce corruption, resulting in greater participation of individuals in government actions.

The following section will briefly review the literature and the study's hypotheses. We will give details about the methodological procedure later. The consistent results with the hypotheses presented in item 2 are the objects of the next section. Finally, we end the work with some conclusions.

Corruption perception

In an economy, the government's decisions and dynamics generate unequal income distribution to the detriment of the majority and in favor of interest groups. Therefore, these discretionary decisions that produce inequality are considered a "corruptive phenomenon" characterized by the unethical behavior of an agent (Monteverde, 2021).

Corruption can be understood as a pattern of behavior of an individual who deviates from the norms that prevail in a society. This behavior aims at meeting private gains in the public interest (Rodrigues & Barros, 2022). Likewise, Nye (1967) considers corruption an abuse of power to achieve one's benefits.

Impartiality is a normative procedure of exemption from any biased position based on the sense of justice between individuals (Abreu & Gomes, 2021). Therefore, as Sparling (2018) points out, the individual becomes corrupt by violating impartiality.

The issue of corruption can be analyzed from two perspectives: macro, when an analysis is made at the country level; micro when an analysis of the individual inserted in society is constructed. Thus, we realize that being corrupt reflects a behavioral problem that impacts different segments of world society (Brol, 2016; O'Connor & Fischer, 2012).

Therefore, in the view of Oliveira et al. (2021), corruption can occur anywhere and involve all types of individuals, classified in high or low levels, according to the type of deviation. For these authors, corruption can also be systemic or political, depending on the scope, sector, or stratum of society in which it occurs.

Several aspects can influence the corruption of society; among them, we cite the efficiency of the country, justice, the legitimacy of government activities, and the population itself. Accordingly, the government must take necessary actions to modify corruption perception (Patel et al., 2020).

In Brazil, the corruption perception is associated with state inefficiency arising from the lack of accountability of public managers concerning questionable actions, resulting in political-cultural problems and low engagement of society in various actions (Avritzer & Filgueiras, 2011). Therefore, from the perspective of Abreu and Gomes (2021), the corruption perception is directly associated with the transparency and maturity of a country's democratic institutions.

Economic and cultural factors influence corruption in a country, and several studies have clarified the behavior of several variables, thus contributing to the fight against corruption (Oliveira et al., 2021).

In this way, analyzing the cultural attributes that influence the corruption of society can significantly contribute to public policymakers mitigating this act in public administration.

Cultural dimensions and hypotheses

Societies naturally present differences in the characteristics of their individuals represented by cultural aspects, which, in turn, correspond to behavioral variations due to evolutionary forces (Bell et al., 2009). Thus, Hofstede (1980) developed studies that measured the cultural differences observed between nations, with the following dimensions being developed: power distance, individualism, masculinity, uncertainty avoidance, long-term orientation, and indulgence.

Power distance is a dimension that represents a degree of tolerance for the inequality of wealth and power in each society and denotes a degree of acceptance of the unequal distribution of power (Guan et al., 2005; Muthukrishna et al., 2018). Hofstede (2011) states that corruption and scandals are more observed and punished in societies with low power distance, even ending political careers.

Additionally, as stated by Seleim and Bontis (2009), in societies with a high-power distance, the elite

enjoys more extraordinary discretionary powers, being less likely to be challenged or persecuted, thus allowing corrupt acts to be carried out more frequently.

In this direction, we hope that:

H1: In societies with **more significant** power distance, there is a **lower** corruption perception by its members.

Individualism refers to a dimension in which individuals tend to be more integrated into closed groups and weaker outside their family cycles (Hofstede, 2011). Yeganeh (2014) states that in individualistic cultures, ethical compliance is sought through formal structures, and regulations are often respected.

In societies with individualistic traits, the objective of education is constant learning, and task performance prevails over interpersonal relationships (Hofstede, 2011). In other words, they are more closed societies focusing on education in favor of relationships. As we expect individualistic societies to have higher levels of education, we also assume that individuals in these societies accept less evidence of corruption.

Thus:

H2: In societies with **greater** individualism, there is a **greater** corruption perception by its members.

Masculinity as a cultural dimension refers to the extent to which the use of force is emphasized, and the distribution of values between genders is low (Hofstede, 2011; Muthukrishna et al., 2018). According to Nabar and Boonlert-U-Thai (2007), in more masculine societies, there is a greater acceptance of aggressive behavior, and individuals try to keep up appearances; in more feminine societies, there is a preference for modesty and quality of life (Guan et al., 2005).

In his study, Yeganeh (2014) commented that unethical or corrupt business behaviors can be observed more frequently in societies with high levels of masculinity through the accelerated search for success. Therefore, as noted, it is expected that:

H3: In societies with **greater** masculinity, members have a lower corruption perception.

Uncertainty avoidance is a measure in which uncertain, ambiguous, or unstructured situations generate discomfort for individuals (Nabar & Boonlert-U-Thai, 2007; Muthukrishna et al., 2018).

To reduce discomfort in these situations, societies averse to uncertainty tend to create security systems through laws and rules. In contrast, less averse societies present more relaxed environments, and deviations are more tolerated (Guan et al., 2005). So, we hope that:

H4: In societies with **greater** uncertainty avoidance, members' corruption perception is greater.

Long-term orientation refers to how individuals apply their efforts towards future goals, with a greater appreciation of the economy, perseverance, and family (Guan et al., 2005; Hofstede, 2011). Thus, long-term orientation is directly related to the conservative behavior of individuals, focusing on the future (Guan et al., 2005).

Societies with short-term orientation are more focused on immediate actions and decisions. In such cases, corrupt acts are more likely to occur in countries that pay little attention to long-term-oriented practices and values (Seleim & Bontis, 2009). Therefore, as long-term orientation refers to a more conservative behavior, individuals may be more demanding about external attitudes that may affect their future. So, we hope that:

H5: In societies with a **greater** long-term orientation, there is a **greater** corruption perception by its members.

Finally, indulgence refers to the extent to which the enjoyment of life is highly permitted, and the actions of individuals tend to be more gratified (Hofstede, 2011; Viana et al., 2021). On the other hand, the opposite of indulgence is restraint. In this case, society is more controlled with stricter social norms (Hofstede, 2011). Thus, in indulgent societies, there is free gratification of human desires, and in restricted societies, the actions of human beings are controlled and regulated by rigid norms (Borker, 2013). Therefore, we understand that in more lenient societies, there is greater freedom of expression and individuals have greater capacity to demand rights. Therefore, it is expected that:

H6: In societies with **greater** indulgence, its members have a greater corruption perception.

Thus, for each cultural dimension observed, we outlined a research hypothesis that points to an expected relationship – positive or negative – with the corruption perception index.

Culture and corruption: state of the art

Some studies aim to identify the relationship between corruption and culture. However, as Scholl and Schermuly (2018) point out, the evidence of the impact of culture on corruption is still inconclusive, with different interpretations and methods. Therefore, there is still a gap in research that analyzes, with a longer time frame, the effects caused by society's culture on corruption.

Vitell et al. (1993) analyzed the influence of several cultural dimensions on ethical decision-making in the business context. The results denote that moral decisions are influenced by the culture in which individuals are inserted. Therefore, being ethical depends, among other factors, on the environment where the individual is inserted, and this attitude can reflect in corrupt acts.

Cheung and Chan (2008), when analyzing the effects of the qualification level of society on corruption in 56 countries from 2002 to 2005, identified that as the number of people with higher education increases, the incidence of corruption decreases in the countries. The authors concluded, therefore, that the cultural dimensions of the countries evaluated – because of the increase in individuals with higher education – indirectly affected acts of corruption.

Seleim and Bontis (2009) analyzed how national cultural dimensions of values and practices were related to the corruption perception index. Their findings provide empirical support for the influence of uncertainty avoidance, long-term orientation, and collectivism on the perceived level of corruption after control for economic and human development.

In turn, Yeganeh (2014) investigated the effects of cultural values on corruption, using the cultural dimensions of Schwartz, Hofstede, and Inglehart. The findings of this research denote that cultural values in different societies considerably influence the level of perceived corruption.

Achim (2016) aimed to investigate how culture determines the levels of corruption in 98 countries through Hofstede's cultural dimensions and corruption perception index, referring to the year 2014. The findings denote that power distance, individualism, and long-term orientation affect perceptions of corruption in countries.

We note that several studies have directly or indirectly analyzed the effects of cultural dimensions on the corruption perception in different countries at different times. However, none of the studies brought more recent data, including data from different moments, such as the periods in which the Covid-19 pandemic took hold in the world – 2020 to 2021.

Therefore, we aim to fill this gap in the literature, as we will analyze a quantitative period of years

superior to the other periods analyzed by other researchers.

Methodological Aspects

Sample and data collection

This study aims to verify the relationship between cultural dimensions and the corruption perception index in international societies. We selected countries that presented the corruption perception index in 2022. The final sample of the survey is shown in Table 1.

Table 1
Criteria for excluding sample countries.

Total Countries in the Corruption Perceptions Index 2021	180
(-) Countries without observed values in cultural dimensions	(48)
(-) Countries without values in all cultural dimensions	(69)
(=) Final number of countries in the sample	63

As discussed, the study's final sample is represented by 63 countries; because of the 180 countries we selected, those that did not have any cultural dimension - 48 countries - or those that did not have any of the six cultural dimensions - 69 countries were excluded.

The corruption perception index was obtained through the Corruption Perceptions Index (CPI) survey published in 2023, carried out by Transparency International. According to the study by Donchev and Ujhelyi (2014), the CPI is a valuable indicator in determining the level of political reliability of a country by measuring the level of corruption perception that represents the image of public agents in society. However, according to Szymanski et al. (2021), the CPI should be applied with great caution, as cultural differences influence it.

On the other hand, information regarding the cultural dimensions was obtained through the platform *Geert Hofstede* [1]which publishes information on the cultural dimensions of Hofstede (1980).

Search variables

In the research, we analyzed the attributes of the corruption perception and the cultural dimensions. Therefore, the corruption perception comprises the dependent variable of the study. However, as the attribute has a cut of 13 years, the variable will be created for each year in transversal cuts only.

Cultural dimensions are divided into six: power distance, individualism, masculinity, uncertainty avoidance, long-term orientation, and indulgence. These dimensions are used as independent variables for each of the temporal variations created in the dependent variable. The research variables, with definitions and collection sources, are explained in Table 2.

[1] https://geerthofstede.com/culture-geert-hofstede-gert-jan-hofstede/6d-model-of-national-culture/

Table 2
Variables used in the search.

Dependent Variable			
Variable	**Definition**	**Hypothesis**	**Source**
Corruption Perception Index (CPI)	The Corruption Perception Index reveals levels of corruption in the public sector ranging from 0 (highly corrupt) to 100 (not corrupted).	Not Applicable	*Transparency International.*
Independent variables			
Power Distance (PD)	The level of inequality in wealth and power is indicated by a measure ranging from 0 (highest inequality) to 100 (lowest inequality).	H1	*Geert Hofstede*
Individualism (IND)	The level at which individuals are integrated into groups ranges from 0 (collectivist) to 100 (individualist).	H2	*Geert Hofstede*
Masculinity (MSC)	The distribution of values between genders ranges from 0 (femininity) to 100 (masculinity).	H3	*Geert Hofstede*
Uncertainty Aversion (UA)	Level of the discomfort of a given society to uncertain or ambiguous situations ranging from 0 (low aversion) to 100 (high aversion)	H4	*Geert Hofstede*
Long Term Orientation (LTO)	The level of focus at which individuals will put their efforts ranges from 0 (short-term orientation) to 100 (long-term orientation).	H5	*Geert Hofstede*
Indulgence (IDG)	The level at which a society allows free gratification of human desires ranges from 0 (restricted society) to 100 (free society).	H6	*Geert Hofstede*

We emphasize that the dependent variable CPI was collected in several periods. There will be a different regression for each period collected for this variable, but without variation of cultures, which is fixed in all periods.

Regression models

Because the culture does not show variability between periods, we performed multiple regressions with cross-sectional only. Thus, we used the multiple linear regression method in twelve different models due to the temporal variation only of the dependent variable.

We performed validation tests of the adopted regression model: an examination of heteroscedasticity of errors, normality of waste, and multicollinearity of independent variables.

According to Table 1, presented above, which provides information on the dependent and independent variables, the regression model we adopted is evidenced as shown in the following equation:

$$CPI_i = \beta_0 + \beta_1 PD_i + \beta_2 IND_i + \beta_3 MSC_i + \beta_4 UA_i + \beta_5 LTO_i + \beta_6 IDG_i + \varepsilon_i \quad (1)$$

Where:

CPI = Corruption Perceptions Index of country *i*; PD = Power Distance of country *i*; IND = Individualism of country *i*; MSC = Masculinity of country *i*; UA = Uncertainty Aversion of country *i*; LTO = Long-Term Orientation of country *i*; IDG = Indulgence of country i; and ε = regression residuals.

Additionally, to provide more robust results, we performed analyses using quantile regression, which aims to segregate the dependent variable CPI into three bands, in most corrupt, moderately corrupt, and least corrupt countries, in quantiles that vary between 0.25, 0.50, and 0.75. The model we adopted is the same as in equation 1; however, only in the year 2022 in the CPI variable.

We tabulated the data of the variables of this study in Excel spreadsheets, which were then generated in the Gretl statistical software.

Search Results

Descriptive statistics

We present in this section the descriptive statistics of the variables included in the sample of this study. It was evidenced by measures of position, such as the mean, minimum and maximum, as well as measures of dispersion, such as the standard deviation and the coefficient of variation. Table 3 below provides such measures.

Table 3
Descriptive statistics of variables.

Panel 1 - Descriptive statistics of dependent variables						
Variable	**Mean**	**Median**	**Minimum**	**Maximum**	**Standard deviation**	**C.V**
CPI 2010	54,778	50,000	20,000	93,000	23,309	0,42552
CPI 2011	54,956	47,520	18,895	94,627	23,607	0,42956
CPI 2012	56,238	55,000	19,000	90,000	20,388	0,36253
CPI 2013	56,302	55,000	20,000	91,000	20,150	0,35789
CPI 2014	56,857	55,000	19,000	92,000	20,106	0,35362
CPI 2015	57,238	56,000	17,000	91,000	20,762	0,36273
CPI 2016	56,683	55,000	17,000	90,000	20,071	0,35409
CPI 2017	56,937	57,000	18,000	89,000	19,562	0,34358
CPI 2018	56,730	58,000	18,000	88,000	19,589	0,34530
CPI 2019	56,730	56,000	16,000	87,000	19,452	0,34288
CPI 2020	56,714	56,000	15,000	88,000	19,424	0,34249
CPI 2021	56,540	56,000	14,000	88,000	19,632	0,34722
CPI 2022	56,254	56,000	14,000	90,000	19,470	0,34610
Média	**56,381**	**54,809**	**17,376**	**90,125**	**20,425**	**0,36257**
Panel 2 - Descriptive statistics of independent variables						
Variable	**Mean**	**Median**	**Minimum**	**Maximum**	**Standard deviation**	**CV**
PD	58,952	61,000	11,000	104,00	20,644	0,35018
IND	45,635	41,000	12,000	91,000	23,510	0,51518
MSC	49,175	50,000	5,0000	110,00	20,126	0,40927
UA	66,968	69,000	8,0000	112,00	22,949	0,34268
LTO	49,320	48,615	12,594	100,00	22,938	0,46509
IDG	47,311	46,205	0,0000	100,00	22,244	0,47017

As we can see, Table 2 provides evidence of the descriptive statistics of all dependent and independent research variables. In addition, we evidenced results in panels that report the analyzed dimensions.

In Panel 1, we present all the statistics from the Corruption Perceptions Index, where we individually analyze attributes of 13 years. We note that, on average, in all periods, the referred index denotes a value of 56.38 for the entire period—the minimum and maximum values transit, on average, between the values 17.37 and 90.12, respectively.

Regarding the dispersion measures, the standard deviation of the entire period, on average, presents the value of 20.425, while the coefficient of variation is 0.362, thus representing a low variability of the index throughout the period. In individual terms, the highest CPI value of the sample used in the research was from New Zealand, in 2011, of 94,627; the lowest value was from Venezuela, in 2021 and 2022, of 14.

In Panel 2, we provide the statistics of variables referring to cultural dimensions. All dimensions have averages, minimum and maximum values similar to each other. In turn, the coefficient of variation presents similar values in all measures, with low dispersion in the values.

Validation of Regression Models

We performed 12 individualized regressions, each with 63 observations. Therefore, the method we used was multiple linear regression with only cross-sections. Thus, we present tests of heteroscedasticity, normality, and multicollinearity of all regression models that we analyzed in the study. In addition, table 3 presents the results of the validation tests of the models.

Table 4
Regression validation tests.

Models	Heteroscedasticity Test	Normality Test	Multicollinearity Test
	p-values		VIF (range)
Model 1	0,1727	0,0868	1,05 ~ 2,03
Model 2	0,2684	0,0604	1,05 ~ 2,03
Model 3	0,3400	0,0973	1,05 ~ 2,03
Model 4	0,4455	0,1196	1,05 ~ 2,03
Model 5	0,5242	0,1492	1,05 ~ 2,03
Model 6	0,4587	0,1757	1,05 ~ 2,03
Model 7	0,3103	0,0945	1,05 ~ 2,03
Model 8	0,4121	0,0924	1,05 ~ 2,03
Model 9	0,3109	0,1205	1,05 ~ 2,03
Model 10	0,5200	0,1693	1,05 ~ 2,03
Model 11	0,5533	0,1379	1,05 ~ 2,03
Model 12	0,6696	0,0968	1,05 ~ 2,03
Model 13	0,7082	0,1580	1,05 ~ 2,03

Note(s): This table reports the results referring to the p-values of the tests referring to heteroscedasticity (White Test) and normality and the VIF intervals of the multicollinearity test. The models are in temporal order, being model 1 referring to the year 2010, model 2 to the year 2011, and so on.

As shown in Table 4, in none of the models, there was statistical significance (p-value < 0.05) in the heteroscedasticity tests, denoting that there was a rejection of the null hypothesis of heteroscedastic errors, which validates this attribute in the regression models.

Regarding the normality test, we noticed that none of the models were significant (p-value < 0.05), that is, we can assume that the residuals have a normal distribution. Thus, we can use linear models for data analysis.

Finally, in the multicollinearity analysis, we observed values ranging between 1.05 and 2.03, all below 3.0, which denotes that the variables do not present a correlation with each other, which gives statistical validity to all models tested. We emphasize that the results of multicollinearity showed identical results since there was no variation in the values of the independent variables over time.

Multiple linear regression model results

To analyze how the cultural dimensions relate to the corruption perception, we performed linear regression tests with the indices of corruption perception as dependent variables and cultural dimensions as independent variables.

We found that the corruption perception index shows annual variation. However, as the cultural dimensions do not change over time, we performed individualized analyses of these attributes annually in separate regressions. Thus, we uniquely present the models' results in Table 5.

Table 5
Results of regressions – CPI dependent variable.

Var.	CPI 2010	CPI 2011	CPI 2012	CPI 2013	CPI 2014	CPI 2015	CPI 2016	CPI 2017	CPI 2018	CPI 2019	CPI 2020	CPI 2021	CPI 2022
Cons.	***53,55***	***53,28***	***48,31***	***48,83***	***50,10***	***50,82***	***52,17***	***56,81***	***56,70***	***57,59***	***56,03***	***56,16***	***56,96***
	(0,001)	***(0,002)***	***(0,001)***	***(0,001)***	***(0,000)***	***(0,001)***	***(0,001)***	***(0,001)***	***(0,001)***	***(0,001)***	***(0,001)***	***(0,001)***	***(0,001)***
PD	***-0,368***	**-0,358**	**-0,245**	**-0,244**	**-0,258**	**-0,280**	**-0,266**	***-0,298***	***-0,302***	***-0,310***	***-0,312***	***-0,312***	***-0,311***
	(0,009)	**(0,012)**	**(0,047)**	**(0,043)**	**(0,032)**	**(0,022)**	**(0,021)**	***(0,009)***	***(0,009)***	***(0,007)***	***(0,007)***	***(0,007)***	***(0,007)***
IND	**0,290**	**0,308**	***0,331***	***0,335***	***0,336***	***0,345***	***0,346***	***0,312***	***0,310***	***0,276***	***0,267***	***0,265***	***0,264***
	(0,013)	**(0,010)**	***(0,001)***	***(0,001)***	***(0,001)***	***(0,001)***	***(0,001)***	***(0,001)***	***(0,001)***	***(0,004)***	***(0,005)***	***(0,006)***	***(0,006)***
MSC	-0,144	-0,155	*-0,168*	*-0,168*	*-0,152*	*-0,157*	*-0,152*	-0,132	-0,133	-0,135	*-0,145*	*-0,149*	*-0,147*
	(0,165)	(0,144)	*(0,071)*	*(0,063)*	*(0,092)*	*(0,086)*	*(0,079)*	(0,122)	(0,119)	(0,115)	*(0,091)*	*(0,083)*	*(0,087)*
UA	*-0,169*	*-0,169*	-0,118	-0,122	-0,114	-0,113	*-0,134*	*-0,129*	*-0,124*	*-0,131*	-0,119	*-0,133*	*−0,131*
	(0,060)	*(0,065)*	(0,135)	(0,114)	(0,136)	(0,149)	*(0,071)*	*(0,079)*	*(0,089)*	*(0,075)*	(0,104)	*(0,071)*	*(0,076)*
LTO	***0,274***	***0,272***	***0,237***	***0,240***	***0,227***	***0,250***	***0,248***	***0,231***	***0,238***	***0,259***	***0,277***	***0,296***	***0,283***
	(0,009)	***(0,011)***	***(0,011)***	***(0,008)***	***(0,011)***	***(0,006)***	***(0,004)***	***(0,007)***	***(0,005)***	***(0,003)***	***(0,001)***	***(0,001)***	***(0,001)***
IDG	***0,309***	***0,302***	**0,250**	**0,235**	**0,222**	**0,214**	*0,182*	*0,151*	0,145	*0,159*	*0,175*	*0,175*	*0,161*
	(0,007)	***(0,009)***	**(0,013)**	**(0,016)**	**(0,023)**	**(0,031)**	*(0,051)*	*(0,099)*	(0,113)	*(0,085)*	*(0,057)*	*(0,058)*	*(0,081)*
R^2	0,596	0,590	0,584	0,598	0,598	0,608	0,628	0,617	0,616	0,607	0,610	0,616	0,608

Var. = Variable; Cons. = Constant; PD = Power Distance; IND = Individualism; MSC = Masculinity; UA = Uncertainty Aversion; LTO = Long Term Orientation; IDG = Indulgence.

Note(s): This table reports the results for twelve cross-section models from 63 countries by Ordinary Least Squares (OLS). The constant values outside the parentheses represent the regression coefficients. The values inside the parentheses represent the p-values. Bold and italics correspond to a statistical significance of 1%; only bold, 5%; and only italics, 10%.

Table 5 provides evidence of the effects of six cultural dimensions on the corruption perception in 63 countries between 2010 and 2022. Therefore, through the findings, we verified which cultural aspects most strongly affect the perception of societies about corruption.

The power distance (PD) showed a negative and significant relationship at the levels of 5% and 1%, with the corruption perception index (CPI), in all periods; that is, cultures that present a greater distance of power in their societies tend to have individuals that present a lower level of corruption perception. Therefore, societies that most tolerate inequalities of wealth and power (Muthukrishna et al., 2018) tend to be the same as most accept corruption due to the low perception of such an act.

Individualism (IND) was a cultural dimension that presented a positive and significant relationship with the corruption perception index at levels of 5% and 1%. Thus, we understand that individualistic societies better understand corrupt acts that occurred there. Therefore, in places with individuals who are little integrated into society, with weak ties beyond the family (Hofstede, 2011), they tend to have a better corruption perception act, while collectivist societies perceive corruption less.

Long-term orientation (LTO) was a cultural aspect that presented a positive and significant relationship at the levels of 5% and 1% with the corruption index; that is, societies that tend to put greater efforts towards the future – conservative societies – tend to have individuals with a greater corruption perception.

Therefore, we understand that societies with a greater focus on the future, conservative, with modern education and better preparation (Guan et al., 2005; Viana et al., 2021) are those that better observe the existence of corruption and, therefore, tend to a lower acceptance of these acts.

Indulgence (IDG) was a dimension that showed strong statistical significance (1%) at the beginning of the first decade of the 2000s and has been losing strength over time, reaching a significance of 10% in 2022. Thus, we observe that societies with greater freedom of expression had a greater corruption perception. However, this cultural trait has lost strength in recent years, ceasing to be a significant aspect in explaining the corruption perception in the countries analyzed in this study.

As Hofstede (2011) points out, more lenient societies are freer; therefore, this attribute significantly contributed to a better corruption perception, which no longer has such a strong influence.

The cultural trait of masculinity (MSC) provided a negative relationship in all periods we analyzed. However, statistical significance was low (10%) or absent in some years. Therefore, we could not make inferences about a relationship between masculinity and the corruption perception due to the insignificant result. The same happened with uncertainty avoidance (UA), which showed a negative relationship, but with low significance, or absence of significance, in the analyzed periods.

In a way, it was possible to notice stable results over time since people's corruption perception in a country did not undergo sudden and substantial changes. Calculating the correlation between the corruption data (CPI) between the different years, we obtained high values, all above 0.96. Moreover, the lowest correlation occurred between 2010 and 2021, exactly the two temporal extremes of the sample, reinforcing this argument.

Additional analysis - quantile regression model

An additional analysis was performed for 2022, using quantile regression and separating countries into three bands: most corrupt, moderately corrupt, and least corrupt.

The criterion adopted consists of dividing the quantiles into three ranges: 0.25, 050, and 0.75. This analysis aims to investigate whether the main conclusions obtained with the results we present in Table 5 are still consistent in a study focused on these three groups.

We emphasized analyzing the extremes and checking whether the signals have changed. The results of the quantile regression are presented in Table 6 below.

The criterion adopted consists of dividing the quantiles into three ranges: 0.25, 050, and 0.75. This analysis aims to investigate whether the main conclusions obtained with the results we present in Table 6 are still consistent in a study focused on these three groups.

The study emphasized analyzing the extremes and checking whether the signals have changed. The results of the quantile regression are presented in Table 6.

Table 6
Quantile Regression - CPI dependent variable.

Variables	Quantile	Coefficient	Stand. error	T-ratio	P-value	Signif.
Const.	0,25	44,7636	7,6832	5,8261	0,015	**
	0,50	44,1184	17,8872	2,4664	0,081	*
	0,75	73,9150	13,5234	5,4657	0,072	*
PD	**0,25**	**-0,3713**	**0,0639**	**-5,8040**	**0,007**	***
	0,50	-0,3691	0,1489	-2,4779	0,132	
	0,75	-0,3195	0,1126	-2,8375	0,112	
IND	**0,25**	**0,2843**	**0,0530**	**5,3584**	**0,004**	***
	0,50	**0,3563**	**0,1235**	**2,8841**	**0,003**	***
	0,75	0,2532	0,0934	2,7111	0,167	
MSC	0,25	-0,0844	0,0483	-1,7484	0,553	
	0,50	-0,0633	0,1124	-0,5634	0,353	
	0,75	-0,1350	0,0850	-1,587	0,282	
UA	**0,25**	**-0,1792**	**0,0413**	**-4,3335**	**0,034**	**
	0,50	-0,0121	0,0963	-0,1260	0,812	
	0,75	-0,1539	0,0728	-2,1138	0,662	
LTO	**0,25**	**0,3098**	**0,0477**	**6,4953**	**0,003**	***
	0,50	**0,2806**	**0,1110**	**2,5265**	**0,001**	***
	0,75	**0,2457**	**0,0839**	**2,9268**	**0,023**	**
IDG	**0,25**	**0,2418**	**0,0518**	**4,6617**	**0,016**	**
	0,50	0,1396	0,1207	1,1563	0,346	
	0,75	0,0441	0,0913	0,4837	0,325	

PD = Power Distance; IND = Individualism; MSC = Masculinity; UA = Uncertainty Aversion; LTO = Long Term Orientation; IDG = Indulgence.

Note(s): This table reports the results referring to a model for cross-sections, from 63 countries, by Quantile Regression, for the year 2022. ***, ** and * correspond to the levels of statistical significance of 1%, 5% and 10%, respectively.

The results presented in Table 6 confirm those presented previously, with an important caveat: countries belonging to the lowest quantiles (0.25 and 0.50, or both) – with lower corruption perception – showed greater significance in their results, while the countries belonging to the highest quantiles (0.50 and 0.75, or both) – with the highest corruption perception – lost significance, depending on the cultural dimension.

Therefore, the cultural issue seems to influence, more strongly, the countries with a lower corruption perception; in other words, where individuals perceive less corrupt acts, they accept them more. This result is well applied to the dimensions: power distance, individualism, uncertainty avoidance, long-term orientation, and indulgence, with long-term orientation having significance in all quantiles but falling from 1% to 5% of influence.

Therefore, according to quantile regression, culture is more influential in countries where the corruption perception is lower, where corrupt acts are less perceived and possibly more frequent.

Discussion of results

According to the results presented, corruption in international societies presents significant variations according to observed cultural aspects. In general, aspects related to power distance, individualism, long-term orientation, and indulgence present significant relationships with the perception of corruption in international societies, which corroborates the constant findings in the studies of Seleim and Bontis (2009) and Yeganeh (2014), which denote that cultural aspects and values influence the levels of perception of corruption in different countries.

More specifically, the results are similar to the study by Achim (2016), which also showed that power distance, individualism, and long-term orientation influence the level of perception of corruption in countries. However, the findings of the current research provide an advance by showing that indulgence also represents an aspect related to how society perceives corruption.

The findings also corroborate the study by Oliveira et al. (2021), which points out that cultural aspects can influence the corruption of a country, and knowledge of these dimensions aims to contribute to a better fight against corrupt acts. Therefore, the pattern of behavior that deviates from the norms that prevail in a country (Rodrigues & Barros, 2022) tends to be aggravated in societies with more significant power distance and less individualism, long-term orientation, and indulgence, thus representing that the way corruption is perceived depends a lot on the interactions that exist in a society, which differ according to its culture.

However, in this study, corruption was analyzed per the studies by Brol (2016) and O'Connor and Fischer (2012) from a macro perspective, where corruption comprises a more aggregated level, encompassing a society as a whole rather than a single individual. Thus, in addition to corruption being influenced by state inefficiency and lack of accountability of managers (Avritzer & Filgueiras, 2011), it also depends on several cultural traits where this activity occurs.

Final Considerations

This study aimed to verify which cultural aspects are related to the corruption perception in international societies. For this, we used data from 63 countries on the Corruption Perception Index (CPI) from 2010 to 2022 and confronted them with the cultural dimensions of Hofstede (1980) throughout the entire period.

Therefore, we performed multiple regression tests for each of the years, totaling twelve regressions, whose dependent variable was the annual corruption perception index and, as independent variables, the following dimensions: power distance, individualism, masculinity, aversion to uncertainty, long-term

orientation, and indulgence. In addition, we performed the quantile regression test only for the year 2022.

The findings show that aspects such as power distance, individualism, long-term orientation, and indulgence were significant and explain, positively or negatively, the level at which certain societies understand or perceive acts of corruption. Thus, we observe that the degree of perception tends to come fundamentally from the cultural traits of these societies. We also noticed that the findings show that countries with less corruption perception – or, possibly, more corrupt – are most influenced by the identified cultural dimensions.

Thus, the behavior of a society that tends to move away from an ideal standard, mainly due to its benefit or that of a specific group, may be more affected in economies where there is: greater acceptance by the population of power and wealth inequality, lower ethical compliance through less individualistic interactions; less application of efforts for the long term, though less conservative behavior; and less acceptability of freedom of expression, with more controlled societies with strict norms.

The results we obtained aim to contribute to the identification of traits of a culture that are most related to how this society perceives and even accepts corruption. Thus, several agents inserted in international markets can observe how societies perceive corrupt acts and, in this way, make decisions about these occurrences. Moreover, these results can also contribute to public policymakers by providing insights that prevent corrupt acts by public officials.

This information is essential because several countries are included in our sample. They have developed or developing economies, and thus it is possible to target resource allocation better. Our findings also contribute to understanding how culture affects individuals' perceptions in these economies.

We emphasize that the cultural dimensions and the corruption perception index represent valid information for quantitative studies in more general approaches, as we propose in this study. Thus, other studies with more critical approaches are necessary to better understand culture as a construction process that influences corruption.

A limitation of this study is the use of only cross-sectional analyses because the cultural dimensions do not vary over time. Another limitation concerns using the Corruption Perception Index, which measures this attribute in a macro way without analyzing the particularities of each company.

For future studies, other variables should be included in the model related to macroeconomic aspects, possibly associated with the corruption perception in these economies. Another suggestion is to carry out studies that can capture the reality of each culture and how corruption occurs in more detail in these societies. In other words, through more qualitative studies, we suggest that the main intrinsic characteristics in societies be analyzed in addition to the corruption perception index.

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