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Effects of culture on the relationship between tax evasion and perception of corruption in international economies

Paulo Vitor Souza de SOUZA [1], Alison Martins MEURER[2]

Abstract: This study aims to examine the effect of national culture on the relationship between the perception of corruption and tax evasion in international economies. For this analysis, data from 81 countries were used, covering a time series that began in 1995 and spanned 21 years of observations. Tax evasion was measured using the Multiple Indicators Multiple Causes (MIMIC) approach to the informal economy. At the same time, the perception of corruption was obtained from the Corruption Perceptions Index calculated by Transparency International. Culture was assessed using Hofstede's Cultural Dimensions: Power Distance, Individualism, Masculinity, Uncertainty Avoidance, Long-Term Orientation, and Indulgence. The results were obtained through panel data regressions using pooled and fixed-effects models. The main findings indicate that tax evasion tends to be lower in societies with a higher perception of corruption, which is, in fact, less corrupt. This finding suggests a positive link between social control of corruption and tax compliance. Furthermore, cultural dimensions revealed significant effects on tax evasion levels: societies with higher Power Distance, Uncertainty Avoidance, and Indulgence exhibit more significant tax evasion, whereas cultures characterized by lower Individualism, lower Masculinity, and higher Long-Term Orientation display lower levels of evasion. The interactions between culture and the perception of corruption demonstrated that different cultural contexts can amplify or attenuate the effectiveness of anti-corruption policies. The findings of this research are relevant and contribute to public policy formulation, suggesting that when combating tax evasion, governments should consider local cultural contexts and taxpayers' perceived corruption, adjusting their strategies to enhance the effectiveness of tax evasion countermeasures.

Keywords: tax evasion, cultural dimensions, perception of corruption, international markets.

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[1] PhD, Federal University of Paraná; Post-Graduate Accounting Program; Prefeito Lothário Meissner Avenue, 632, 80210-170, Curitiba, Paraná, Brazil;e-mail: paulovsouza@ufpr.br; 0000-0001-5746-1746.

[2] PhD, Federal University of Paraná; Post-Graduate Accounting Program; Prefeito Lothário Meissner Avenue, 632, 80210-170, Curitiba, Paraná, Brazil; e-mail: alisonmeurer@ufpr.br; 0000-0002-3704-933X.

Introduction

One of the primary objectives of the State is to formulate and implement public policies that contribute to ensuring that essential services are efficiently provided to society (Pasquarelli & Chirinéa, 2017). By improving the delivery of its services, the government encourages citizens to voluntarily fulfill their tax obligations, reinforcing compliance with the existing "social contract" between the State and society, thereby increasing tax compliance by reducing tax evasion (Nurkholis et al., 2020).

The contractual relationship socially established by these actors implies a two-way dynamic, demonstrating that society's perception of public management and government institutions is crucial in discussing tax-related matters. Therefore, how the interaction between the State and society is perceived affects citizens' behavior regarding tax evasion (Nimer et al., 2022). Tax evasion encompasses actions aimed at avoiding tax payments to the tax authorities or resulting in the payment of an amount lower than the legally required tax obligation (Dias & Jeque, 2023). According to Mansour et al. (2023), tax evasion occurs when an agent, whether an individual or a legal entity, intentionally avoids or conceals documentation that would be used by tax authorities to assess the amount due to public coffers.

The effects of tax evasion are observed in different ways and result in various adverse consequences affecting the economy and society. These include a reduction in government revenue, the creation of budget deficits (Dias & Jeque, 2023), and an impact on the quality of public services.

Annual estimates of revenue losses due to tax evasion are concerning (Nimer et al., 2022). A study conducted by the Brazilian Institute of Planning and Taxation (IBPT, 2023) estimated that tax evasion by businesses in Brazil amounted to R$ 374 billion in 2021. Additionally, data from the "Sonegômetro," an indicator from the National Union of Public Treasury Attorneys, indicate that tax evasion in Brazil exceeded R$ 600 billion annually in 2022.

Carvalho and Ávila (2022) emphasize the importance of understanding the factors associated with tax evasion to promote its mitigation, as it is a problem that affects society. Public trust in government, for example, is one of the factors contributing to greater tax compliance (Nurkholis et al., 2020), as tax evasion tends to decline when society perceives corruption as being under control (Nimer et al., 2022).

Conversely, in environments where corruption is more perceptible, citizens tend to feel that their tax payments are unfair due to the misallocation of public resources—either through diversion for illicit purposes or through inefficiency in public management—leading taxpayers to adopt measures to evade taxes (Lima et al., 2022). Thus, tax evasion tends to be exacerbated in environments where corruption prevails due to the sense of injustice that permeates taxpayers' perceptions (Nimer et al., 2022).

Corruption is facilitated by the discretionary power of public officials, legislators, members of the judiciary, and others over distributive actions affecting the private

sector. This power creates risks, vulnerabilities, and opportunities for bribery (Monteverde, 2021). According to Agyei-Mensah and Buertey (2019), corruption stems from a country's political and legal aspects, as well as its economic and structural policies, institutional role, and human development. Therefore, considering the political, cultural, and social context in which individuals are embedded, corruption may drive tax evasion (Lima et al., 2022).

Specialized studies, such as the Fiscal Monitor of the International Monetary Fund (IMF, 2019), have documented corruption's effects on tax evasion, drawing attention to its significant financial impact. At a global level, IMF estimates indicate that corruption leads to revenue losses exceeding $1 trillion annually (2019). This figure suggests that tax evasion is a pressing concern for major economies worldwide.

Culture, closely linked to corruption, represents values and behavioral norms that shape individuals' attitudes and influence daily social interactions that may affect tax fraud (Ariyanto et al., 2020). According to Pereira and Silva (2021), cultural and psychological factors influence tax evasion levels within a society. Nurkholis et al. (2020) argue that national culture is a potential moderating factor in the relationship between various phenomena and tax evasion.

Several studies have examined the relationship between corruption and tax evasion at the firm level (Alm et al., 2016; Amoh et al., 2023; Lima et al., 2022) and the national level (Carvalho & Ávila, 2022; Irawan & Utama, 2021). Other studies have also explored the link between culture and tax evasion (Bame-Aldred et al., 2013; Ermasova et al., 2021; Richardson, 2008). However, there remains a gap in understanding how corruption and tax evasion interact under the influence of distinct cultural traits. This study seeks to address this gap by examining the effects of culture on the relationship between societal perceptions of corruption and tax evasion.

Based on the above, this study poses the following research question: What is the moderating effect of culture on the relationship between corruption perception and tax evasion at the international level? The primary objective of this research is to investigate the effect of national culture on the relationship between corruption perception and tax evasion in international economies.

This research is relevant as it addresses an economic and social issue by analyzing corruption and tax evasion in an international and cultural context. Although previous studies (Alm et al., 2016; Amoh et al., 2023; Bame-Aldred et al., 2013; Carvalho & Ávila, 2022; Ermasova et al., 2021; Irawan & Utama, 2021; Lima et al., 2022; Richardson, 2008) have examined these attributes individually, this study integrates these dimensions by investigating the moderating role of culture in the interaction between societies that allow for greater corruption (low citizen perception) and tax evasion practices. This study aims to better understand contextual factors that influence the "social contract" between society and government by analyzing how cultural dimensions shape social reactions to corruption and tax behavior.

Additionally, this study provides both theoretical and practical contributions. From a theoretical perspective, it fills a relevant gap by exploring the effects of culture on the relationship between corruption and tax evasion, offering a more comprehensive

understanding of tax compliance in international contexts. From a practical perspective, it aims to assist policymakers in developing strategies that consider culturally sensitive traits requiring greater attention, thereby contributing to improved tax compliance. Ultimately, this study aspires to inform the development of tools that promote tax justice and economic sustainability across different global economies.

1. Theoretical framework

1.1 Tax evasion and the social contract theory

Governments in different countries have faced significant challenges in maximizing revenue collection to foster economic development, which results in fiscal gaps between what they could collect and what they collect (Amoh et al., 2023). Ariyanto et al. (2020) state that taxpayers tend to minimize tax payments through various forms of tax resistance, as taxation is viewed as an element of state coercion.

Tax evasion has been a continuous concern in recent decades due to its prevalence and persistence (Mansour et al., 2023). According to Hossain et al. (2024), tax evasion represents any effort by taxpayers to avoid taxes through illegal means. Nimer et al. (2022) define tax evasion as a deviation in tax payments, considering it a direct abuse of tax law. Finally, Dias and Jeque (2023) understand tax evasion as a way to escape taxation by underpaying or failing to pay the amount due to public coffers.

Tax evasion is a phenomenon that arises from a conflict between taxpayers and the government, and tax governance practices tend to mitigate such conflicts (Carvalho & Ávila, 2022). Nurkholis et al. (2020) explain that the Social Contract Theory suggests that society, as taxpayers, recognizes when the government adopts positive attitudes toward tax services, thereby encouraging compliance with tax obligations. However, if society perceives corrupt acts in the public sector, tax evasion may be triggered (Lima et al., 2022).

Thus, from the perspective of Social Contract Theory, tax authorities consider taxpayers as subjects rather than objects. Accordingly, the government will provide good tax services and use the collected revenue to improve societal well-being (Nurkholis et al., 2020). Therefore, governments should adopt principles and best practices of tax governance to reduce tax evasion practices (Carvalho & Ávila, 2022), thereby fostering more effective tax collection.

Tax evasion is a reprehensible behavior that harms society and has several negative consequences, including reduced government revenue (Dias & Jeque, 2023), diminished government capacity to provide quality goods and services (Lima et al., 2022), and wealth distribution distortions by creating markets with unfair competition and groups influenced by crime (Mansour et al., 2023). Xavier et al. (2022) state that countries' tax burdens could be reduced by up to 30% without declining public revenue if tax evasion did not exist.

Lima et al. (2022) point out that, in the public sector, society's perception of corruption can encourage criminal practices such as tax evasion due to the sense of impunity it generates. Similarly, tax evasion behavior will decrease if people feel that corruption is under control (Nimer et al., 2022). It is worth noting that there is a clear distinction between tax evasion and corruption: Tax evasion is a society-driven act that prevents resources from entering the government, while corruption is a government-driven act that diverts resources from the public treasury (Lima et al., 2022).

Due to the role tax evasion plays in various societal debates and the need to understand the factors influencing this phenomenon (Carvalho & Ávila, 2022), as well as the insights into corruption and its relationship with tax evasion, the following section will address society's perception of corruption and its link to tax evasion.

1.2 Perception of corruption and tax evasion

Corruption is generally considered one of the greatest problems threatening governments' legitimacy, trust, and development worldwide (Tsao & Hsuehet, 2023). Corruption can be understood as a behavioral pattern that deviates from prevailing norms, usually involving private gains at the public's expense (Rodrigues & Barros, 2020).

From Tsao and Hsuehet's (2023) perspective, corruption is understood as abusing fiduciary power for personal gain. It corrodes trust, weakens democracy, hinders economic development, exacerbates inequality, poverty, and social fragmentation, and contributes to environmental crises.

Corruption is common in both developed and developing economies. Approximately 20% of companies worldwide have received at least one bribery request, and at least one-third of those bribed accept the act to obtain public contracts or other advantages (Yung et al., 2023). Therefore, corrupt acts harm public governance and affect the dignity and credibility of the government (Tsao & Hsuehet, 2023).

Yung et al. (2023) state that there are no direct measures to quantify corruption, as finding the true level of corruption in societies is difficult due to some bribe givers or receivers rarely admitting their corrupt behavior publicly. However, a widely known and accepted parameter for measuring corruption is the public sector's Corruption Perception Index (CPI) (Lima et al., 2022).

The CPI is the most widely used indicator of public sector corruption globally and has been published annually since 1995 by the non-governmental organization Transparency International (TI) (Vieira et al., 2022). According to Tsao and Hsuehet (2023), Transparency International provides CPI scores to assess corruption status over the years, and this index represents a transnational measurement of corruption.

Whenever a public official, whether a legislator, member of the judiciary, or others, has discretionary power over distributive actions affecting the private sector, risks, vulnerabilities, and opportunities for bribery are created (Monteverde, 2021).

Therefore, corruption tends to result from political and legal aspects and a country's economic and structural policies (Agyei-Mensah & Buertey, 2019).
When society perceives corrupt acts, it may develop an aversion to paying taxes, as it fosters the feeling that collected resources serve to fuel corruption (Lima et al., 2022). Thus, tax evasion behavior may depend on society's perception of the level of corruption (Nimer et al., 2022).
Several scientific studies confirm the relationship between tax evasion and corruption in societies. Ivanyna et al. (2016) show that tax evasion tends to be higher in countries with higher corruption, where society is more permissive toward such acts. Therefore, public officials' misuse of government revenue morally justifies tax evasion (Litina & Palivos, 2016). Accordingly, Alm et al. (2016) point out that corruption tends to be a significant driver of tax evasion, particularly by reducing reported sales for tax purposes. Therefore, considering the presented perspectives, the following hypothesis was formulated:
H_1: A positive and significant relationship exists between corruption and tax evasion in international economies.

1.3 Cultural dimensions and tax evasion

Most organizational processes and practices tend to be influenced by differences in national cultures, meaning that organizations' social behavior can be better understood regarding the traits of the dominant national culture (Ortas & Gallego-Álvarez, 2020). Cultural dimensions address six distinct anthropological problem areas that societies worldwide handle differently, reflecting stable patterns of salient characteristics among nations (Halkos & Skouloudis, 2017).
According to Zeghal and Lahmar (2018), the cultural differences between nations influence organizational practices, even when a single set of norms is applied. Therefore, beyond the various effects of cultural differences on organizational practices, a country's tax system tends to differ according to cultural traits (Nurkholis et al., 2020), revealing the importance of culture in tax-related matters.
Culture can shape individuals' general values and specific behavioral norms, and these values and norms are constantly reinterpreted during the social contract between the individual and the government, which can either increase or decrease tax evasion (Richardson, 2008). Tsakumis et al. (2007) indicate that cultural dimensions provide explicit constructs that can be used to analyze culture's impact on countries' tax evasion levels. Additionally, Richardson (2008) shows that various cultural dimensions can affect the level of tax evasion.
Studies analyzing national culture use the measures developed by Hofstede (1980), who proposed the following dimensions: (i) power distance; (ii) individualism; (iii) masculinity; (iv) uncertainty avoidance; (v) long-term orientation; and (vi) indulgence. Hofstede's national culture model, capturing various factors representing countries' independent preferences (rather than individuals), tends to be widely used and validated in numerous studies (Ortas & Gallego-Álvarez, 2020).

Just as cultural dimensions help understand tax evasion levels, society's perception of corruption can also be explained by cultural traits. Corruption is seen as a result of a country's political and legal aspects, with culture being one of these attributes (Agyei-Mensah & Buertey, 2019). Achim (2016) points out that cultural dimensions affect corruption perception in countries, and similarly, Souza and Silva (2023) note that countries with lower corruption perception tend to be more significantly influenced by cultural dimensions.

The literature highlights various impacts of cultural dimensions on perceptions of tax evasion and corruption. However, these studies did not analyze cultural dimensions as moderators of the relationship between tax evasion and corruption. Therefore, understanding which cultural traits amplify and/or mitigate the relationship between evasion and corruption can provide incremental insights into this phenomenon. Consequently, the second hypothesis of this study was formulated:

H_2: Cultural dimensions moderate the relationship between corruption and tax evasion in international economies.

2. Methodological aspects

2.1 Sample, period, and data

The first step in verifying how national culture influences the relationship between corruption perception and tax evasion in international societies was to assess the number of countries with available tax evasion data and the corresponding period. Tax evasion data were obtained from the International Monetary Fund (IMF) Report, which provides information for 158 countries.

In addition to tax evasion data, information on corruption perception and national culture was also required. Corruption perception data were obtained from the non-governmental organization Transparency International, which has published information on the Corruption Perception Index (CPI) annually since 1995, covering up to 180 countries in 2023. Meanwhile, national culture data were obtained from Hofstede's (1980) Cultural Dimensions, which provides information on six cultural dimensions for 111 countries.

The sample was selected based on certain exclusion criteria, determining the final number of countries included. Table 1 presents information on the process and criteria adopted for the final sample composition:

Table 1. Exclusion criteria for sample selection

Number of countries with information on Tax Evasion in the IMF Report	158
(-) Countries without information on Corruption Perception and Culture in the sample period	(75)
(=) The final number of countries contained in the sample	83

Source: Research data.

Countries without available data on corruption perception and cultural dimensions were excluded. The tax evasion index data from the International Monetary Fund (IMF) Report are available only from 1995 to 2015. For this reason, the study sample is limited to this timeframe due to the absence of data on the main variable of interest in more recent years.

Therefore, the research sample comprises up to 83 countries over 21 years, totaling 1,743 observations analyzed during the study period. It is also worth noting that an unbalanced panel approach was chosen to maintain a relevant number of countries, as not all data are available for every analyzed year. From this perspective, the study presents a representative number of observations despite the absence of some information for certain years and countries.

2.2 Dependent and independent research variables

The dependent variable of interest to be analyzed is Tax Evasion (TE). According to the working paper by Medina and Schneider (2018), the measure of tax evasion is represented by the Multiple Indicators Multiple Causes (MIMIC) methodology of the Informal Economy, which is provided by the International Monetary Fund (IMF) report.

The information available for the index is disclosed from 1995 to 2015, thus justifying the time frame adopted in this study. The TE index is interpreted as: the higher the indicator, the greater the tax evasion. The study by Medina and Schneider (2018) states that the size of the shadow or underground economy, an economic activity not reported to the government, is essential for estimating the extent of tax evasion. Therefore, the indicator is valid due to its acceptability in the international literature.

The independent research variables are segregated into three distinct attributes: perception of corruption, cultural dimensions, and control variables (macroeconomic environment).

The Corruption Perception Index (CPI) was obtained through the survey conducted on the Transparency International platform. As pointed out by the study by Yung et al. (2023), the CPI tends to be a widely accepted indicator in academia due to the difficulty of measures that directly represent corruption. For Donchev and Ujhelyi (2014), the CPI is a useful indicator for determining a country's level of political trustworthiness, as it represents the image of public agents before society.

It is emphasized that the CPI variable is interpreted as: the higher the index, the lower the corruption. This interpretation arises because societies that perceive more corrupt acts (higher perception of corruption) allow less of these acts to occur in society (Donchev & Ujhelyi, 2014). For this reason, the CPI variable was multiplied by -1 for methodological operationalization purposes to improve the understanding of the interactions obtained about this measure. With this, the interpretation changed to: the higher the CPI index, the higher the country's corruption rate.

The measures referring to cultural dimensions were obtained through the Geert Hofstede platform, which publishes information on Hofstede's (1980) cultural

dimensions. Information is provided on the following dimensions: Individualism (IND), Power Distance (PD), Masculinity (MAS), Uncertainty Avoidance (UA), Long-Term Orientation (LTO), and Indulgence (IDG). These variables do not have a temporal cut, having only a single value per country over time. The interactions were obtained from the multiplication of the CPI with the cultural dimensions of each country.

Ukaj (2014) points out that economic crises, inflation, instability, and unemployment are capable of causing greater tax evasion in economies. For this reason, the following measures were used as control variables: GDP Growth (GDPG), Inflation Level (INF), and Unemployment Rate (UR). Such variables controlled the effects of the relationships between the dependent variable, the independent and the moderator. Further information on the research variables is provided in Table 2:

Table 2. Definition of dependent and independent variables

Variables	Definition	Source
Dependent Variable		
Tax Evasion Index (TE)	An index representing the size of the Shadow Economy, where the higher the index, the greater the tax evasion (Medina & Schneider, 2018). The measure ranges from 0 to 100.	*International Monetary Fund*
Independent Variables		
Corruption Perception Index (CPI)	An index that represents the perception of corruption based on corruption levels in the public sector (Donchev & Ujhelyi, 2014). The measure ranges from 0 to 10. This variable was multiplied by -1.	*Transparency International*
Power Distance (PD)	Mede o grau de tolerância da desigualdade em riqueza e poder e varia de 0 a 100 (Hofstede, 1980).	*Geert Hofstede*
Individualism (IND)	Measures the degree to which individuals are integrated into groups, ranging from 0 to 100 (Hofstede, 1980).	*Geert Hofstede*
Masculinity (MSC)	Measures the extent to which society emphasizes masculine performance values, ranging from 0 to 100 (Hofstede, 1980).	*Geert Hofstede*
Uncertainty Avoidance (UA)	Measures the extent to which people feel uncomfortable with ambiguous situations, ranging from 0 to 100 (Hofstede, 1980).	*Geert Hofstede*
Long-Term Orientation (LTO)	Measures the focus with which people direct their efforts, leading to conservative behavior, ranging from 0 to 100 (Hofstede, 1980).	*Geert Hofstede*
Indulgence (IDG)	Measures the extent to which a society allows relatively free gratification of basic and natural human desires, ranging from 0 to 100 (Hofstede, 1980).	*Geert Hofstede*
Control Variables		
GDP Growth (GP)	Measures the variation in a country's economic output over a period. The higher the GDP, the greater the economic expansion (Ukaj, 2014).	*DataBank - World Bank*

Variables	Definition	Source
Inflation Rate (INF)	Measures the average increase in prices of goods and services. The higher the inflation, the greater the increase in the cost of living (Ukaj, 2014).	*DataBank - World Bank*
Unemployment Rate (UR)	Measures the proportion of the labor force that is unemployed. The higher the UR, the larger the share of the population without work (Ukaj, 2014).	*DataBank - World Bank*

Source: Research data.

As indicated in Table 2, the research model comprises one dependent variable, seven independent variables, and three control variables.

2.3 Statistical models of analysis

The research's dependent, independent, and control variables show variation in cross-sectional cuts (cross-section) over time (annually). The cultural dimensions are the only measures that do not vary over time. Thus, the research used the panel data regression model to analyze.

Preliminary analyses were performed with the sample set, where high correlations between the cultural and interactive independent variables were detected. For this reason, regressions were performed with the cultural dimensions analyzed separately. Six distinct regressions were conducted, where the distinction lies in the cultural dimension analyzed in each regression. Equations 1 to 6 presented below represent the six regression models analyzed in the research:

$$TE_{it} = \alpha_0 + \beta_1 CPI_{it} + \beta_2 PD_i + \beta_3 PD * CPI_{it} + \beta_4 GP_{it} + \beta_5 INF_{it} + \beta_6 UR_{it} + \mu_{it} \quad (1)$$

$$TE_{it} = \alpha_0 + \beta_1 CPI_{it} + \beta_2 IND_i + \beta_3 IND * CPI_{it} + \beta_4 GP_{it} + \beta_5 INF_{it} + \beta_6 UR_{it} + \mu_{it} \quad (2)$$

$$TE_{it} = \alpha_0 + \beta_1 CPI_{it} + \beta_2 MSC_i + \beta_3 MSC * CPI_{it} + \beta_4 GP_{it} + \beta_5 INF_{it} + \beta_6 UR_{it} + \mu_{it} \quad (3)$$

$$TE_{it} = \alpha_0 + \beta_1 CPI_{it} + \beta_2 UA_i + \beta_3 UA * CPI_{it} + \beta_4 GP_{it} + \beta_5 INF_{it} + \beta_6 UR_{it} + \mu_{it} \quad (4)$$

$$TE_{it} = \alpha_0 + \beta_1 CPI_{it} + \beta_2 LTO_i + \beta_3 LTO * CPI_{it} + \beta_4 GP_{it} + \beta_5 INF_{it} + \beta_6 UR_{it} + \mu_{it} \quad (5)$$

$$TE_{it} = \alpha_0 + \beta_1 CPI_{it} + \beta_2 IDG_i + \beta_3 IDG * CPI_{it} + \beta_4 GP_{it} + \beta_5 INF_{it} + \beta_6 UR_{it} + \mu_{it} \quad (6)$$

where:

TE = Tax evasion of country i in period t; CPI = Corruption Perception Index of country i in period t; PD = Power distance of country i; IND = Individualism of country i; MSC = Masculinity of country i; UA = Uncertainty avoidance of country i; LTO = Long-term orientation of country i; IDG = Indulgence of country i; GP = GDP Growth of country i in period t; INF = Inflation Rate of country i in period t; UR = Unemployment Rate of country i in period t; μ_{it} = Error term of the regression.

The results generated in this research for the reported regression models were obtained using the Gretl® statistical software and Excel®.

3. Results

3.1 Descriptive analysis

Initially, an overview of position and dispersion measures for the research's dependent and independent variables is presented. Therefore, Table 3 contains information on the mean, median, standard deviation, minimum, and maximum variables used in the study.

Table 3. Descriptive statistics of study variables

Variable	Mean	Median	Std. Dev.	Minimum	Maximum
TE	26.90	26.70	12.70	6.16	69.10
CPI	-4.38	-3.50	2.57	-0.40	-10.00
PD	62.00	64.00	18.90	11.00	104.00
IND	40.70	33.00	22.30	12.00	91.00
MSC	48.20	46.00	17.60	5.00	110.00
UA	63.70	60.00	20.40	8.00	112.00
LTO	41.80	34.80	24.20	9.00	100.00
IDG	50.10	46.20	22.00	0.00	100.00
PD*CPI	207.00	207.00	141.00	0.00	696.00
IND*CPI	187.00	97.20	216.00	0.00	797.00
MSC*CPI	182.00	131.00	165.00	0.00	760.00
AVI*CPI	235.00	184.00	187.00	0.00	736.00
OLP*CPI	178.00	112.00	180.00	0.00	703.00
IDG*CPI	196.00	124.00	191.00	0.00	738.00
GP	2.72	2.61	6.17	-30.70	140.00
INF	6.85	3.33	28.50	-8.48	1060.00
UR	6.89	6.08	4.14	0.25	27.70

Legend: TE = Tax Evasion of country; CPI = Corruption Perception Index; PD = Power Distance of country; IND = Individualism of country; MSC = Masculinity of country; UA = Uncertainty Avoidance of country; LTO = Long-Term Orientation of country; IDG = Indulgence of country; GP = GDP Growth of country; INF = Inflation Rate of country; UR = Unemployment Rate of country.

Source: Research results.

The dependent variable, the Tax Evasion Index (EF), has a mean of 26.90 and a standard deviation of 12.70, indicating considerable variation among the analyzed countries. The lowest value for the index was 6.16, while the highest was 69.10, revealing significant differences in underground economic levels. Among the independent variables, the Corruption Perception Index (CPI) presents a low mean (-4.38) and a median of -3.50, suggesting that some of the analyzed countries have a low tolerance for corruption. However, wide dispersion (standard deviation 2.57) still indicates significant differences. The values range from -0.40 to -10.00,

highlighting countries with opposing standards regarding accepting corrupt practices.

Hofstede's cultural dimensions show wide variation, with the Uncertainty Avoidance Index (UAI) standing out with the highest mean (63.70) and broad dispersion (standard deviation of 20.40). At the same time, the Indulgence Index (IDG) has a mean of 50.10 but with values uniformly distributed between 0 and 100. The CPI directly influences interactions of the CPI with cultural variables such as Power Distance (PD), Individualism (IND), and Uncertainty Avoidance (UA). For example, PD*CPI and UA *CPI have the highest means among interactions (207.00 and 235.00, respectively), suggesting that in countries with low acceptance of corruption, cultural contexts that tolerate inequality or avoid uncertainty may amplify the perceived effects on the tax evasion index.

Finally, the control variables, such as GDP Growth (CP), Inflation Rate (INF), and Unemployment Rate (TD), exhibit wide variability. CP, for example, has a mean of 2.72 but fluctuates from -30.70 to 140.00, suggesting extreme economic situations in some countries. Conversely, inflation presents a high standard deviation (28.50) and extreme values (-8.48 to 1060.00), evidenced by contrasting economic realities among countries. This variable heterogeneity may provide insights into the complex interactions between cultural, economic, and institutional factors in tax evasion.

3.2 Inferential analysis

This section presents the inferential analyses of the six regression models, summarized in Table 4. The six models share the same configuration, with tax evasion as the dependent variable, but they differ in the cultural dimension analyzed and its interaction with the Corruption Perception Index.

Table 4 also presents the variables, tests (heteroscedasticity and normality), and the models tested. Below the numerical description of the model, the analyzed cultural dimension is displayed, along with the coefficient values of each variable and the p-values of the relationships. It is worth noting that all model validation tests indicated heteroscedastic residuals, requiring the use of the HAC Matrix for robust standard errors. Regarding normality, the tests indicated the absence of this attribute; however, considering the number of observations (N = 1,743), this assumption could be relaxed.

Table 4. Regression results with panel data

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	PD	IND	MSC	UA	LTO	IDG
CPI	1.3168	2.7870	2.8636	2.1623	2.6553	0.8707
	(0.4014)***	(0.4914)***	(0.4844)***	(0.2566)***	(0.2956)***	(0.3129)***
Culture	0.2217	−0.4165	−0.1618	0.1108	−0.2175	0.1710
	(0.0331)***	(0.0581)***	(0.0837)*	(0.0199)***	(0.0185)***	(0.0173)***
Culture*CPI	−0.0073	0.0312	0.0101	−0.0024	0.0153	−0.0277

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	PD	IND	MSC	UA	LTO	IDG
	(0.0034)**	(0.0001)***	(0.0092)	(0.0041)	(0.0030)***	(0.0042)***
GP	−0.0465	−0.0984	−0.0380	−0.0009	0.0228	−0.0245
	(0.3894)	(0.0631)	(0.0658)	(0.0619)	(0.0644)	(0.0660)
INF	0.0126	0.0066	0.0147	0.0148	0.0242	0.0249
	(0.0078)	(0.0137)	(0.0181)	(0.0089)*	(0.0098)**	(0.0091)***
UR	−0.2995	0.1205	−0.3207	−0.5023	−0.2431	−0.2917
	(0.0635)***	(0.1796)	(0.1994)	(0.0771)***	(0.0568)***	(0.0588)***
Constant	21.3268	47.6486	45.4573	31.5341	44.4982	28.6105
	(3.4014)***	(3.0764)***	(4.8791)***	(0.9751)***	(0.8609)***	(1.2067)***
R^2	0.3739	0.4939	0.3388	0.3362	0.4098	0.3455
P-value (F-test)	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Year Control	Yes	Yes	Yes	Yes	Yes	Yes
Country Control	Yes	Yes	Yes	Yes	Yes	Yes
Heteroskedasticity	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Robust Std. Errors	Yes	Yes	Yes	Yes	Yes	Yes
Normality	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Highest VIF	4.280	6.685	7.084	9.105	8.832	2.883

Legend: TE = Tax Evasion of country; CPI = Corruption Perception Index; PD = Power Distance of country; IND = Individualism of country; MSC = Masculinity of country; UA = Uncertainty Avoidance of country; LTO = Long-Term Orientation of country; IDG = Indulgence of country; GP = GDP Growth of country; INF = Inflation Rate of country; UR = Unemployment Rate of country. Notes: The values outside parentheses represent the regression coefficients, while the values in parentheses represent standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Source: Research results.

According to the results reported in Table 4, several findings emerge regarding the determinants of tax evasion in international economies. The first measure analyzed is the Corruption Perception Index. It is important to emphasize that this index should be interpreted in the regression models of this study as follows: the higher the index, the more corrupt the society.

The results for the CPI were positive and significant at the 1% and 5% levels in all models. These findings indicate that tax evasion tends to be greater in societies with higher corruption levels; in other words, these societies employ more strategies to avoid tax payments. These findings align with the studies of Alm et al. (2016), Ivanyna et al. (2016), Litina and Palivos (2016), Lima et al. (2022), and Nimer et al. (2022), which suggest that in corrupt countries, there is a greater aversion to tax payments due to a sense of injustice regarding the misallocation of public funds.

Examining how cultural dimensions affect tax evasion reveals that power distance, uncertainty avoidance, and indulgence positively affect the tax evasion index. In contrast, individualism, masculinity, and long-term orientation negatively affect the

tax evasion index. Therefore, culture plays a specific role in tax evasion, depending on the dimension analyzed in each country.

The studies by Tsakumis et al. (2007) and Nurkholis et al. (2020) suggest that a country's tax evasion profile is characterized by high power distance—since societal detachment from the government fosters corrupt acts; low individualism—since individualistic people, who prioritize personal interests, tend to tolerate the negative effects of tax evasion on society; low masculinity—since these societies are more corrective than punitive; and high uncertainty avoidance—since such countries exhibit a high level of public distrust toward the government. These findings align with those reported in this study.

The cultural dimensions of long-term orientation and indulgence have been introduced more recently than the others (Montenegro, 2021); thus, no studies discuss their direct effects on tax evasion. Tax evasion levels are lower in societies with more conservative behavior guided by a long-term orientation. A possible explanation for this phenomenon is related to the long-term negative effects of tax evasion on an economy, which may encourage individuals in long-term societies to adopt policies to reduce tax evasion to avoid compromising future strategic objectives.

Conversely, tax evasion is higher in more indulgent societies, which are less restrictive and punitive, as there is less punishment for individuals' misconduct. When individuals perceive that an indulgent society imposes fewer restrictions on their actions, they may exploit this freedom to adopt practices that help them evade taxes.

The analysis of moderation effects based on the coefficients of the "Culture*CPI" variables reveals how cultural dimensions interfere with the relationship between corruption perception (CPI) and tax evasion (EF). Overall, the coefficients associated with these interactions help identify whether cultural dimensions amplify or attenuate the effect of the CPI on tax evasion, and the significance levels indicate the statistical robustness of these effects.

The coefficient for the "Culture*CPI" interaction with PD is negative (-0.0073) and significant at the 5% level. This indicates that in societies with higher Power Distance—those that are more hierarchical and tolerant of inequality—the impact of CPI on tax evasion is reduced. This finding suggests that hierarchical cultures diminish corruption’s influence on tax evasion. In other words, high hierarchy seems to reduce the effectiveness of transparency and anti-corruption measures by lowering the impact of corruption on tax evasion.

The coefficient for the "Culture*CPI" interaction with IND is positive (0.0312) and significant at the 1% level. This relationship means that in more individualistic societies, the relationship between CPI and tax evasion remains positive but to a lesser extent, as the interaction coefficient is smaller than the CPI coefficient (0.0312 < 2.7870). In other words, in contexts where individualism prevails, corruption perception results in a less attenuated reduction in tax evasion. This effect may be explained by a greater tolerance for behaviors that harm the collective, such as tax

evasion. Therefore, from a public policy perspective, individualism may limit the effectiveness of anti-corruption practices in reducing tax evasion.
The coefficient for the "Culture*CPI" interaction with LTO is also positive (0.0153) and significant at the 1% level. This coefficient means that in societies with a stronger long-term focus, the impact of CPI on tax evasion remains positive but to a lesser extent, as the interaction coefficient is smaller than the direct relationship between corruption and tax evasion (0.0153 < 2.6553). Thus, in countries that plan and act with a long-term perspective, the effects of corruption on tax evasion tend to be reduced, though they are still present in this direct relationship. This finding may be explained by a mindset more oriented toward stability and institutional sustainability, which is reflected in lower levels of tax evasion.
Finally, the coefficient for the "Culture*CPI" interaction with IDG is negative (-0.0277) and significant at the 1% level. This relationship suggests that the relationship between CPI and tax evasion is weakened in more indulgent societies. In contexts with greater permissiveness regarding gratification and less emphasis on strict social norms, reducing corruption has less impact on lowering tax evasion. This may indicate that permissive cultural values weaken the ability to internalize anti-corruption norms effectively, making anti-corruption measures less efficient in curbing tax evasion.

3.3 Discussions

The moderation effects highlight that cultural dimensions significantly shape the relationship between corruption perception (CPI) and tax evasion. These interactions provide evidence that interventions aimed at reducing tax evasion must consider the cultural context of societies, as different cultural values can either amplify or inhibit the expected effects of policies designed to enhance transparency and combat corruption. Therefore, the challenge for public administrators lies in considering the specific cultural characteristics of each society when implementing actions to reduce tax evasion.
It is essential to analyze these effects through the lens of Social Contract Theory, as Nurkholis et al. (2020) suggested, which posits that the government is expected to use tax revenues to improve social welfare. When society perceives higher levels of corruption, it tends to foster the emergence of active agents seeking to combat corrupt practices (Vieira et al., 2022), leading to lower levels of tax evasion. The opposite is also true: if society is more accepting of corrupt acts by public officials (lower corruption perception), tax evasion tends to increase (Lima et al., 2022). These findings align with discussions in Social Contract Theory, which suggests that society may react to corruption—and consequently to breaches of the social contract—in various ways, including by failing to comply with tax obligations (Nurkholis et al., 2020). The discussion of cultural traits as moderators in the relationship between corruption perception and tax evasion is a pioneering topic that requires more in-depth studies for a comprehensive understanding. These findings

aim to contribute to the existing discussion and pave the way for future research exploring these specific dynamics.

4. Conclusions

This study aimed to examine the effect of national culture on the relationship between corruption perception and tax evasion in international economies. The research utilized data on tax evasion, corruption perception, cultural dimensions, and macroeconomic measures for 81 countries over 21 years.

The findings indicate that, in general, countries with lower perceptions of corruption exhibit lower levels of tax evasion. This result suggests that societies with a higher awareness of corruption tend to exercise greater social control and, consequently, are less prone to tax evasion. Regarding cultural dimensions, it was observed that power distance, uncertainty avoidance, and indulgence tend to increase tax evasion rates, while societies with lower levels of individualism, masculinity, and long-term orientation exhibit lower levels of tax evasion behavior.

The moderating role of culture in the relationship between corruption perception and tax evasion suggests that different cultural contexts can amplify or mitigate the effect of corruption perception on tax evasion. Specifically, corruption perception has a weaker impact on reducing tax evasion in hierarchical societies. In contrast, in more individualistic and long-term-oriented societies, the impact of corruption perception remains strong but to a lesser extent. In indulgent societies, corruption perception reduces tax evasion less significantly.

This research presents important implications for various stakeholders interested in public policies. For policymakers, it is crucial to consider a society's cultural traits when implementing strategies to combat corruption and tax evasion. The effectiveness of these policies may be enhanced or weakened depending on the prevailing cultural dimensions. These actions can range from public awareness campaigns highlighting the short- and long-term effects of corruption and tax evasion to establishing stricter regulations and harsher penalties for taxpayers engaging in tax evasion.

Furthermore, the findings provide valuable insights for governments and international organizations, which must understand cultural dynamics to foster environments of greater transparency and lower tax evasion.

The study's limitations include its reliance on aggregated indicators of corruption perception and tax evasion, which may not fully capture intra-country variations. Additionally, the cultural dimensions used are considered static over time, even though they may interact with other unexamined factors, such as a country's level of economic development or institutional structure.

Future research suggestions include analyzing how other variables, such as education or economic freedom, influence the relationship between corruption and tax evasion. Moreover, it would be valuable to investigate how cultural changes over time, driven by globalization and increased awareness of corruption issues, might

alter tax evasion patterns across different countries. Future studies should incorporate measures beyond Hofstede's cultural dimensions to achieve greater robustness.

Conflict of Interest Statement

The author does not have a conflict of interest.

Acknowledgment

That is not the case.

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