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# The Impact of Cultural Dimensions on the Effectiveness and Strength of Auditing and Reporting Standards

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## Abstract

This study aimed to identify national cultural dimensions that may influence the strength of auditing and reporting standards (SARS) in 142 countries between 2015 and 2017. The study used the linear regression method to examine the impact of these dimensions on SARS, based on 257 country-year observations. The study used Hofstede's five cultural dimensions, including power distance (PDI), individualism (INDIV), uncertainty avoidance (UA), and masculinity (MAS), and the cultural dimension of the future temporal reference (FTR). The results showed that FTR, MAS, and UA positively and significantly impact SARS, suggesting that countries with weaker future temporal reference have stronger auditing and reporting standards. High masculinity, reflected in the professional practices of auditors and accountants, could ensure strong auditing and reporting standards, while high uncertainty avoidance could foster an environment conducive to stronger standards. In contrast, individualism and power distance had no significant impact on SARS. The study's originality lies in its analysis of the relationship between national culture and SARS, enriching the accounting and auditing field by providing a relevant perspective to detect the national culture dimensions underlying financial information quality. The implications of this research could be useful for policymakers and stakeholders' decision-making, indicating that countries

with weaker FTR, high masculinity, or high uncertainty avoidance have stronger auditing and reporting standards and good quality financial information. Regulatory agencies could also benefit from broadening monitoring mechanisms for countries with harder FTR to minimize the negative effects of these national cultural dimensions on SARS.

**Keywords:** Strength of auditing and reporting standards, national culture, future temporal reference, Hofstede's cultural dimensions

## Introduction

Auditing and reporting standards are crucial in ensuring transparency, credibility, and confidence in corporate financial information. The strength of auditing and reporting standards (SARS) varies from country to country, depending on several factors (Leuz and Wyscoki, 2008). National culture is a determining factor in the production, application, and robustness of these standards. Culture is the expression of symbols and significations shared by a community. Indeed, national culture, as a set of values, beliefs, behaviors, and practices shared by a given society, can impact the perception of accounting, auditing, and financial reporting. In other words, it can influence how auditing and reporting standards are understood, adopted, and applied. According to Wilfrid (2000), the robustness of auditing and accounting systems seems underpinned by culture.

Boolaky et al. (2013) and Boolaky and Cooper (2015) studied the determinants of SARS at the international level (Europe, Asia, and the United States). SARS is influenced by various factors,as first analyzed by Boolaky et al. (2013), whose results show that institutional infrastructure, financial market development, and education and training levels impact SARS. He views SARS as an integral component of institutional transparency relevant to companies, investors, and governments. Sound accounting and auditing regulations guarantee transparency and facilitate comparing companies through better information disclosure. However, high-quality auditing and reporting standards do not necessarily improve the quality of accounting information disclosed, as it also depends on the vision of managers and auditors (Barth et al., 2008) and local economic systems (Chen et al., 2003).

Hofestede(1984) defined culture as "*the collective programming of the mind which distinguishes the members of one group or society from those of another*" (p. 82). Tie and Zhao (2016) assert that culture in a country refers to a set of common beliefs, ideas, and values of worth, which are shared by members of a group of individuals. Salter et al. (2024) confirm that national culture dimensions are tied to accounting values and systems differently and call on the accounting researcher to investigate this issue.

Culture is a factor that can affect the accounting system of a country and how individuals perceive and use accounting information (Doupnik and Tsakumis, 2004). According to Migueles et al. (2024), the cultural dimensions defined by Hofstede are the most effective and relevant despite the criticisms of Ailon (2008) and McSweeney (2002).

This study examined the impact of national culture on SARS, considering several national cultural dimensions. It explored how country-specific cultural factors might influence the strength of the implementation and the application of auditing and reporting standards. By examining these effects, this study provides a better understanding of how national culture differences shape international auditing and reporting practices via the strength of their standards.

To carry out our empirical study, we examined SARS in 142 countries observed over the 2015-2017 period (257 country-year observations), and we used data from the World Economic Forum's Global Competitiveness Report. The results of the multivariate analysis showed that FTR, MAS, and UA positively and significantly impact SARS. These results could be interpreted by the fact that countries with a weaker future temporal reference showed stronger auditing and reporting standards. Countries with a higher masculinity that could be reflected in the professional practices of auditors and accountants could ensure strong auditing and reporting standards. Countries with a higher uncertainty avoidance could foster an environment conducive to stronger auditing and reporting standards. In contrast, the results showed that individualism and power distance have no significant impact on SARS.

The interest of this paper lies in the scarcity of research on the impact of national culture on SARS. It contributes to a better understanding of the determinants of SARS. Our main contribution lies in introducing cultural dimensions, and especially future temporal reference, as determinants of SARS. It emphasizes the acute need to recognize national culture and linguistic specificities as fundamental elements in determining the SARS level. This paper holds paramount importance to accounting and auditing practitioners, and particularly to policymakers. It will enable them to adapt their strategies and work tools according to the national culture to establish an accounting and auditing reference framework that is both efficient and relevant.

Our research is conducted on a sample of 142 countries observed over the period (2015-2017). Our results indicate that future time orientation, uncertainty avoidance, masculinity, higher education, training, financial market development, corporate ethical behavior, and the size of the external market have a positive and significant impact on the strength of auditing and reporting standards.

This paper is of paramount importance for practitioners, auditors, and particularly for those responsible for developing audit standards. Similarly, this study emphasizes the importance of national cultural dimensions for the implementation of corporate policies and national decision-makers (Bekele et al., 2024).

The remainder of the paper is organized as follows. We present the theoretical and conceptual frameworks in the second section. In the third section, we review previous literature and develop our hypotheses. The fourth section describes our data and methodology. In the fifth section, we present and discuss our results. Finally, the paper ends with a conclusion.

## Literature review and hypotheses development

Several studies have analyzed the determinants of SARS internationally, in Europe, Asia, and the USA (Boolaky et al., 2013; Boolaky and Cooper, 2015). SARS is influenced by various factors, which were first analyzed by Boolaky et al. (2013).

According to research and regulatory bodies, the quality of reporting is the ability of financial statements to provide reliable and useful financial and non-financial information for decision-making regarding the economic situation and performance of the company (Biddle et al., 2009; Tang et al., 2016; Akejuet Babatunde, 2017; Alareeni, 2020; Thuan, 2022; Rahman et al., 2023). According to Wan et al. (2023), the study of SARS helps improve governance at the corporate level or institutional environments at the national level.

### The relationship between future temporal reference and the strength of auditing and reporting standards

Linguists refer to future temporal reference (FTR) as the aspect of language that relates to when and how languages require speakers to mark the moment of events, splitting languages into two broad categories: weak and strong FTR. This criterion distinguishes languages that require future events to be marked grammatically, called strong FTR, such as English, from other languages (languages with weak FTR, such as German). In this sense, Chen (2013) provides evidence that speakers of languages with weak FTR show more future-oriented engagement behavior than speakers of strong FTR ones.

Kim et al. (2017) confirm that executives in countries with weak FTR languages are more committed to SARS than those in countries with strong FTR languages. Indeed, managers in countries where languages do not require speakers to mark future events grammatically perceive future consequences as more imminent and are, therefore, more likely to engage in strengthening the robustness of auditing and reporting standards. Since

speakers of languages with weak FTR show more future-oriented behavior (Chen, 2013; Chen et al., 2015; Liang et al., 2018; Sutter et al., 2018), we predict that countries with weak FTR languages are more likely to engage in strengthening their auditing and reporting standards than countries with strong FTR ones. Therefore, our first hypothesis is as follows.

**H1: There is a positive relationship between weak FTR and the strength of auditing and reporting standards.**

**The relationship between the degree of individualism and the strength of auditing and reporting standards**

Individualism, the opposite of collectivism, is a dimension of national culture described by Hofstede (2001) as: "*the relationship between the individual and the collectivity which prevails in a given society"*. The degree of individualism gives an idea of how well individuals conform to the values of society. In this sense, Hofstede (2001) concludes that individuals in a society having a high degree of individualism are expected to act in their self-interest.

Hofstede (2001) also points out that in collectivist societies, legal norms are not viewed as universal. Instead, there is a belief that laws and rights should vary according to different groups within a country. However, in individualist societies, regulations and rights are expected to be equal for all residents. As a result, countries with high levels of individualism often have stronger economies that typically have systems with more stringent regulations. In addition, Hofstede (2001) asserts that societies with high individualism are characterized by self-direction, autonomy, communication, and the importance of individual achievement. According to Husted (1999), companies in highly individualistic societies may be encouraged to adopt strict accounting and reporting practices due to increased competitive pressures. In such societies, stakeholders and investors attach importance to the transparency and reliability of financial information since these elements are fundamental to autonomous decision-making. Hence, our second hypothesis is as follows.

**H2: There is a positive relationship between individualism and the strength of auditing and reporting standards.**

**The relationship between a country's power distance and the strength of auditing and reporting standards**

Power distance refers to how hierarchy and unequal power distribution in institutions and organizations are accepted. Societies with high power distance are characterized by the acceptance of inequality in

hierarchies, which positions people in their " legitimate" place (Hofstede,1991).

Batistella et al. (2021) show that the relevance of accounting information is more accentuated in firms located in countries that are farther from power. According to Gray (1988), in countries characterized by low hierarchical distance, where members of society seek equality of power, it is reasonable to expect the legislative and normative framework in these countries to be strong, hence the following hypothesis.

**H3: There is a negative relationship between power distance and the strength of auditing and reporting standards.**

**The relationship between uncertainty avoidance and the strength of auditing and reporting standards**

Uncertainty avoidance is the degree to which people tolerate uncertainty and ambiguity in a country. Hofstede (1991) defines uncertainty avoidance as: "*the extent to which members of a culture feel threatened by uncertainty or unknown situations*".

Cultures with high uncertainty avoidance tend to avoid uncertain and ambiguous situations, which can lead to higher anxiety levels. It is worth noting, however, that uncertainty avoidance is not synonymous with risk avoidance. Indeed, cultures with high uncertainty avoidance are often willing to adopt risky behaviors to reduce ambiguity since the risky action will reduce anxiety about a specific situation. In this regard, Gray (1988) shows that high uncertainty avoidance leads to a preference for cautious action, thus reinforcing the strength of reporting standards. In addition, Batistella et al. (2021) show that the relevance of accounting information is more accentuated in firms located in countries with less aversion to uncertainty. As a result, we formulate our fourth hypothesis as follows:

**H4: There is a positive relationship between uncertainty avoidance and the strength of auditing and reporting standards.**

**The relationship between masculinity and the strength of auditing and reporting standards**

Societies are labeled masculine when there is a preference for achievement, heroism, assertiveness, and material rewards for success (Hofstede, 2001). According to Hofstede (1991), masculinity refers to the importance of the male gender in assigning social roles. A low masculinity score indicates that a country places more importance on relationships, modesty, caring for the weak, and quality of life.

In highly masculine societies, managers attach much importance to operational performance, as good corporate performance implies social recognition and personal esteem (Zhang et al., 2013). According to Hofstede (2001), a high degree of masculinity engenders a strong interest in performance in an "unfair world" and inculcates decisiveness and competitiveness. Moreover, Husted (1999) points out that in nations characterized by high levels of masculinity, rigorous reporting rules can be expected, whereas Batistella et al. (2021) show that the relevance of accounting information is more accentuated in firms located in countries with greater femininity. We formulate our fifth hypothesis as follows.

**H5: There is a positive relationship between masculinity and the strength of auditing and reporting standards.**

## Research methodology

### Sample and study period

Our empirical analysis aimed to investigate the impact of national culture dimensions on SARS in a cross-country context, which includes developing and developed economies. Our primary sample comprised 142 countries, corresponding to 426 observations according to the Global Competitiveness Report for the 2015-2017 period, which comes in the form of an unbalanced panel data. We had 169 missing observations. Hence, the final sample includes 257 country-year observations.

The data related to the four dimensions of national culture were extracted from Hofstede et al. (2010), while the information regarding the future time reference of languages comes from the work of Chen (2013), based on the EUROTYP project of the European Science Foundation. We selected the years 2015 and 2017 because they correspond to the most recent periods for which all the variables necessary for our analysis were available in a complete, coherent, and comparable manner. Although these data are not the most recent, their use remains relevant as cultural dimensions evolve slowly and retain their validity. This choice is thus based on the empirical stability of cultural indicators and the quality of the data available for the studied period.

**Table 1:** Summary of sample selection

| Sample selection | Number of observations |
|---|---|
| **Initial sample** | 426 |
| **Less: missing data** | 169 |
| **Final sample** | 257 |

Data source: The authors

**Data sources**

The data for this study were extracted from the Global Competitiveness Report developed by the World Economic Forum (2018) for the period (2015, 2016, and 2017). The report was based on a combination of two sources: an executive opinion survey and robust international data sources. The Global Competitiveness Report represents a valid source for collecting data related to the accounting and economic fields (Richardson, 2006). It is the best-known report for measuring and ranking countries according to the weakness and strength of their economic and institutional settings (Benkraiem et al., 2021).In this respect, several empirical prior cross-country studies in the accounting literature used this source of information to gather data (Baccouri et al., 2024; Guidara et al., 2022; Benkraiem et al., 2021; Khlif et al., 2015; Richardson, 2006).

Data for the four dimensions of national culture were extracted from Hofstede et al. (2010). In contrast, the FTR data for each language were extracted from Chen (2013), based on research by the European Science Foundation-funded project EUROTYP ("Typology of the European languages") (Table 2).

**Measure of the dependent variable**

The SARS score ranges from "1", indicating low SARS, to "7", indicating high SARS. It is a continuous variable measured through CEOs from 142 countries who took part in the Executive Opinion Survey. The survey questions were evaluated on a 7-point Likert scale, with 1 the lowest possible score and 7 the highest possible score. World Economic Forum (WEF) data is the most recent data generated by organizations such as the World Bank and the United Nations (Ben Mahjoub et Amara, 202,0 and Guidara et al., 2022). WEF uses the following standard formula to convert material data:

6 x (country score - sample minimum) + 1 / (sample maximum - sample minimum)

The WEF draws its data from solid international data sources and a survey of executives (WEF 2010, pp. 335475). The survey, conducted by the WEF, is a reliable source of timely and vital information related to the business environment in which business leaders operate in several countries. It is widely used in academic research (Black & Carnes, 2006; Van de Walle, 2006; Yang & Huang, 2009). The WEF survey addresses the 12 pillars of the Global Competitiveness Index.

**Measure of the independent variables**

Future temporal reference (FTR)is a binary variable that takes the value "1" if the language does not differentiate between present and future (weak FTR) and "0" otherwise.

- Uncertainty avoidance (UA) is a discrete variable measured by a score in the 0-100 range.
- Individualism (INDIV) is a discrete variable measured by a score in the 0-100 range.
- Masculinity (MAS)is a discrete variable measured by a score in the 0-100 range.
- Power distance (PDI)is a discrete variable measured by a score in the 0-100 range.

**Measure of the control variables**

The first control variable is “higher education and training” (HET). Indeed, a high education and training, competence, and expertise are required to understand, interpret, and maintain a high level of auditing and reporting standards (Chand and Cummings, 2008). This variable is continuous, ranging from 1 to 200.

The second control variable is “financial market development” (FMDEV). Boolaky et al. (2013) confirm that accounting transparency and audit report reliability cannot be achieved in isolation but require a favorable financial system that includes a developed financial market. These researchers show that FMDEV influences a country's SARS.

The third control variable is “ethical behavior of firms” (EBOF). Ekici and Onsel (2013) confirm that the ethical behavior of firms influences political and legal institutions and SARS.

The fourth control variable is “foreign market size” (FOREMS). Indeed, Nobes (1992) confirms that the transparency and reliability of accounting and auditing reports require a conducive regulatory system that includes the regulation of foreign markets. It is worth noting that the last three control variables are continuous variables measured by a score in the 1-7 range.

**Presentation of the empirical model**

To examine the impact of national culture dimensions on SARS, we use the following OLS regression model by controlling for year and country fixed effects.:

$$SARS_{it} = \beta_0 + \beta_1 FTR_{it} + \beta_2 PDI_{it} + \beta_3 INDIV_{it} + \beta_4 UA_{it} + \beta_5 MAS_{it} + \beta_6 HET_{it} + \beta_7 FMDEV_{it} + \beta_8 EBOF_{it} + \beta_9 FOREMS_{it} + Country\ Fixed\ Effects + Year\ Fixed\ Effects + \varepsilon_{it}$$

Where:
- **SARS** = Strength of auditing and reporting standards.
- **FTR**: Future temporal reference.
- **PDI**: Power distance.
- **INDIV**: Individualism.
- **UA**: Uncertainty avoidance.
- **MAS**: Masculinity.
- **HET**: Higher education and training.
- **FMDEV**: Financial market development.
- **EBOF**: Ethical behavior of firms.
- **FOREMS**: Foreign market size.

**Table 2:** Description and sources of variables

| **Dependent variable** | | | |
|---|---|---|---|
| | **Description** | **Source** | **Measure** |
| The strength of auditing and reporting standards (SARS) | How robust are auditing and financial reporting standards in your country? | World Economic Forum's Global Competitiveness Reports (2015-2016-2017). https://tcdata360.worldbank.org/indicators/h1a88ca92?country=BRA&indicator=693&viz=line_chart&years=2007,2017 | A continuous variable measured according to a score ranging from 1 to 7: 1 is extremely weak, and 7 is extremely strong. |
| **Independent Variables** | | | |
| Future temporal reference (FTR) | When and how languages require speakers to mark the timing of events? | European Science Foundation European Language Typology Project (EUROTYP), Data from Chen (2013). | Binary variable equal to 1 if a language does not necessarily differentiate between present and future and 0 otherwise. |
| A country's power distance (PDI) | The extent to which people accept an unequal distribution of power in institutions. | Hofstede et al. (2010) https://www.hofstede-insights.com/country-comparison-tool?fbclid=IwAR2n1Bk9UlWnJeOzzzUHP6fx4WT2nERPbt7PMKXzmH2qH4QGSJ_DtLyrjbI | Discrete variable measured by a score in the range of 0 to 100. |
| Country individualism (INDIV) | Individualism is a social philosophy that emphasizes autonomy, individual rights, and interests, promoting individual freedom and success over collective interests. | Hofstede et al. (2010) https://www.hofstede-insights.com/country-comparison-tool?fbclid=IwAR2n1Bk9UlWnJeOzzzUHP6fx4WT2nERPbt7PMKXzmH2qH4QGSJ_DtLyrjbI | Discrete variable measured by a score in the interval from 0 to 100, if the INDIV score is high, the culture is more individualistic, if the score is lower, the society is more communitarian, and we find "a very tight social fabric". |
| A country's uncertainty avoidance (UA) | Index to measure a society's level of discomfort in the face of uncertainty and ambiguity. | Hofstede et al. (2010) https://www.hofstede-insights.com/country-comparison-tool?fbclid=IwAR2n1Bk9UlWn | Discrete variable measured by a score from 0 to 100. If the score is high, companies are more willing to reduce uncertainty or ambiguity |

| | | | |
|---|---|---|---|
| | | JeOzzzUHP6fx4WT2nERPbt7PMKXzmH2qH4QGSJ_DtLyrjbI | through written or unwritten rules of conduct. |
| Masculinity (MAS) | Societies are labeled masculine when there is a preference for success, heroism, assertiveness, and material rewards for success. | Hofstede et al. (2010) https://www.hofstede-insights.com/country-comparison-tool?fbclid=IwAR2n1Bk9UlWnJeOzzzUHP6fx4WT2nERPbt7PMKXzmH2qH4QGSJ_DtLyrjbI | Discrete variable measured by a score included in the range 0 to 100. A low MAS score indicates that a country places more importance on relationships, modesty, attention to the weak, and quality of life. In highly masculine societies, the emphasis is on performance and the pursuit of success. |
| **Control Variables** | | | |
| Higher education and training (HET) | Enrolment in higher education and training refers to the gross enrolment rate in higher education in a country. | World Economic Forum's Global Competitiveness Reports (2015-2016-2017). https://tcdata360.worldbank.org/indicators/hf3cac09e?country=AND&indicator=734&countries=BRA&viz=line_chart&years=2015,2017 | Continuous variable measured by a score in the range 1 to 200. |
| Financial market development (FMDEV) | Financial market development refers to the level of development of the financial market in a country compared to other countries. | World Economic Forum's Global Competitiveness Reports (2015-2016-2017). .https://tcdata360.worldbank.org/indicators/inn.fin.mkt.dev?country=BRA&indicator=739&viz=line_chart&years=2014,2017 | Continuous variable measured by a score in the range 1 to 7. |
| Ethical behavior of firms (EBOF) | Ethical behavior of firms compares the ethics of companies in one country with those in other countries worldwide. | World Economic Forum's Global Competitiveness Reports (2015-2016-2017). https://tcdata360.worldbank.org/indicators/he76a4525?country=BRA&indicator=681&viz=line_chart&years=2014,2017 | Continuous variable measured by a score in the range of 1 to 7. |
| Foreign market size (FOREMS) | The foreign market size is estimated as the natural logarithm of the total value of exports of goods and services. | World Economic Forum's Global Competitiveness Reports (2015-2016-2017). https://tcdata360.worldbank.org/indicators/he76a4525?country=BRA&indicator=681&viz=line_chart&years=2014,2017 | Continuous variable measured by a score in the range of 1 to 7. |

Data source: World Economic Forum's Global Competitiveness Reports

## Empirical Results and Discussion

### Descriptive statistics

Table 3 reports the descriptive statistics. As can be seen in the Table, SARS ranges from a minimum of 0 to a maximum of 6.67. The countries in

the sample exhibit an average SARS equal to 4.48which shows that most countries have strong auditing and reporting standards.

The average power distance is 64.943 and varies between 11 and 100, indicating that most countries accept power distance. The individualism score averages 38.689 and ranges from 6 to 91. This finding leads us to conclude that the countries studied are close to collectivism. The uncertainty avoidance score has a mean of 66.292and ranges from 8 to 100. We could conclude that the countries in our sample tend to avoid uncertainty by establishing rules and laws governing various sectors. Masculinity score shows a mean of 47.406 and varies between 5 and 100, showing that the countries in the sample have neither a masculine nor a feminine tendency. The FTR variable is binary, and we find that 19.44% of the countries in our sample make no distinction between the future and the present in their language (low FTR).

The control variables (higher education and training, financial market development, ethical behavior of firms, and foreign market size) have averages of 70.163, 3.826,3.928, and 4.35, respectively.

**Table 3.** Summary statistics

| Variables | N | Mean | Median | Standard Deviation | P25 | P75 | Min | Max |
|---|---|---|---|---|---|---|---|---|
| **SARS** | 426 | 4.48 | 4.5 | 1.216 | 3.91 | 5.23 | 0 | 6.67 |
| **PDI** | 318 | 64.943 | 68.5 | 20.627 | 50 | 80 | 11 | 100 |
| **INDIV** | 318 | 38.689 | 31 | 21.61 | 22 | 55 | 6 | 91 |
| **UA** | 318 | 66.292 | 66.5 | 21.521 | 50 | 86 | 8 | 100 |
| **MAS** | 318 | 47.406 | 46.5 | 17.537 | 40 | 58 | 5 | 100 |
| **HET** | 411 | 70.163 | 70 | 39.868 | 36 | 105 | 1 | 140 |
| **FMDEV** | 426 | 3.826 | 3.89 | 1.033 | 3.41 | 4.42 | 0 | 5.81 |
| **EBOF** | 426 | 3.928 | 3.82 | 1.172 | 3.37 | 4.45 | 0 | 6.31 |
| **FOREMS** | 426 | 4.35 | 4.425 | 1.335 | 3.65 | 5.3 | 0 | 7 |
| | **Frequencies** | | **Proportions** | | | | | |
| **Binary variable** | 1 | 0 | 1 | | 0 | | | |
| **FTR** | 63 | 261 | 19.44 | | 80.56 | | | |
| This table reports descriptive statistics of the regression variables. The sample comprises 257 country–year observations from 2015 to 2017. | | | | | | | | |
| SARS: The strength of auditing and reporting standards, FTR: future temporal reference, PDI: Power distance, INDIV: individualism, UA: uncertainty avoidance, MAS: masculinity, HET: higher education and training, FMDEV: financial market development, EBOF: Ethical behavior of firms, FOREMS: foreign market size. | | | | | | | | |

Data source: World Economic Forum's Global Competitiveness Reports

## Bivariate analysis

Pearson correlation matrix displayed in Table 4. The result shows low correlations among explanatory variables, with all correlations below the critical value (the values are below 0.8). The Variance Inflation Factors

(VIFs) reported at the bottom of the correlation matrix range from 1.17 to 4.17, with an average value of 2.37. These VIF values are substantially below the commonly accepted threshold of 10, indicating that the sample does not present significant multicollinearity concerns.

**Table 4:** Pairwise correlations

| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
|---|---|---|---|---|---|---|---|---|---|---|
| (1) SARS | 1.000 | | | | | | | | | |
| (2) FTR | 0.357*** | 1.000 | | | | | | | | |
| (3) PDI | -0.495*** | -0.323*** | 1.000 | | | | | | | |
| (4) INDIV | 0.541*** | 0.237*** | -0.672*** | 1.000 | | | | | | |
| (5) UA | -0.267*** | -0.347*** | 0.231*** | -0.217*** | 1.000 | | | | | |
| (6) MAS | 0.045 | -0.088 | 0.084 | 0.047 | -0.003 | 1.000 | | | | |
| (7) HET | -0.695*** | -0.416*** | 0.522*** | -0.594*** | -0.023 | 0.058 | 1.000 | | | |
| (8) FMDEV | 0.934*** | 0.327*** | -0.401*** | 0.439*** | -0.324*** | 0.064 | -0.601*** | 1.000 | | |
| (9) EBOF | 0.873*** | 0.477*** | -0.509*** | 0.578*** | -0.343*** | -0.088 | -0.681*** | 0.846*** | 1.000 | |
| (10) FOREMS | 0.696*** | 0.276*** | -0.169*** | 0.354*** | -0.083 | 0.232*** | -0.620*** | 0.702*** | 0.621*** | 1.000 |
| **VIF** | **2.37** | | | | | | | | | |
| | | **1.65** | **2.64** | **2.51** | **1.43** | **1.17** | **3.69** | **2.14** | **4.17** | **1.83** |

This table presents the pairwise correlations. The sample comprises 257 country–year observations from 2015 to 2017. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. See Table 2 for variables definitions.
Data source: The authors

## Multivariate analysis

We used the ordinary least squares (OLS) regression, and the results show that the model is significant (Prob> F = 0.0000). Moreover, the adjusted$R^2$ is equal to 0.867, which means that the explanatory variables in our model explain 86.7% of the endogenous variable, demonstrating a good fit of the econometric model (Table 5).

The FTR variable shows a positive and significant coefficient at the 5% threshold. This result is in line with the findings of previous studies (Chen, 2013; Kim et al., 2017; Liang et al., 2014; Thieroff, 2000) and allows us to confirm the first hypothesis (H1), which stipulates that auditing and reporting standards are stronger in countries with a weaker FTR. Indeed, speakers of weak FTR languages show more forward-looking behavior and are more likely to engage in strengthening SARS than speakers of strong FTR languages (Chen et al., 2015; Sutter et al., 2018). Effectively, individuals in countries where languages do not require speakers to mark future events grammatically perceive future consequences as more imminent and, therefore, are more likely to engage in the preparation of a sound regulatory framework of standards. While in cultures where FTR is strong, the focus may be more on the long term, likely leading to less rigorous reporting and auditing practices, focusing on short-term earnings management rather than long-term value creation. In such cases, SARS may be less significant as pressures for transparency and accountability in the short term may be less apparent.

According to Liang et al. (2014), Kim et al. (2017), we found that individuals born in countries with weak FTR languages are more committed to the strength of auditing and reporting standards than those born in countries with strong FTR languages. We found that individuals in countries where languages do not require speakers to grammatically mark future events perceive future consequences as more imminent and are therefore more likely to engage in preparing a solid regulatory framework for standards.

The results also show that the coefficient of the country's individualism variable is non-significant (P = 1.534). This result is inconsistent with previous studies (Hofstede, 2001; Husted, 1999; Zhang et al., 2013). This result allows us to invalidate the second hypothesis (H2) and leads us to assert that individualism does not affect SARS. The individualism variable may not significantly impact the country's SARS for several reasons. Other factors, such as government regulations, organizational culture, and auditors' professional ethics, may have a higher impact on SARS than individualism.

Besides, the results show that the coefficient of the power distance variable is non-significant. Hofstede (2001), and Husted (1999). The failure to find a relation between the power distance variable and the SARS leads us to reject our third hypothesis (H3). This finding can be explained by the fact that auditing and reporting standards are generally devised by independent professional organizations, such as the International Auditing and Assurance Standards Board (IAASB) and the Financial Accounting Standards Board (FASB), and that these organizations do not attach importance to the cultural dimension of power distance.

Unlike the work conducted by Offerman and Hellmann (1997) and Gray (1988), which showed that countries with a high power distance are characterized by a lack of communication between leaders, and therefore, information sharing is weak in companies with a large power distance.

The coefficient of the uncertainty avoidance variable is positive (0.003) and significant at the 1% level. This last result means that as uncertainty avoidance increases, so does SARS. This finding is in line with the findings of Hofstede (2001) and Zhang et al. (2013) and supports the existence of a positive relationship between uncertainty avoidance and SARS, thus corroborating our fourth hypothesis (H4). Furthermore, in countries with low levels of uncertainty avoidance, companies are often subject to unpredictable fluctuations in their economic and regulatory environment. In this regard, a high uncertainty avoidance score encourages proactive management of uncertainty by reinforcing SARS.

The masculinity variable is positive (0.003) and significant at the 5% threshold, suggesting that masculinity positively influences SARS. In other

words, as the masculinity score increases, so does the SARS score. Consistent with the findings of Zhang et al. (2015), this result confirms our fifth hypothesis (H5) and asserts a positive relationship between masculinity and SARS. Masculinity is intertwined with responsibility and rigor, where value is placed on personal accountability, discipline, and the relentless pursuit of excellence. These values can be reflected in the professional practices of auditors and accountants, who may demand rigorous standards to ensure the quality and transparency of financial information. In addition, masculinity can encourage a proactive approach to problem-solving, enabling closer monitoring and continuous improvement of auditing and reporting standards. Consequently, in these cultural contexts, the masculinity variable can play a positive role in reinforcing SARS.

Among the studies that found a positive relationship between masculinity and disclosure (Wan et al., 2023; Doupnik and Tsakumis, 2004), indicating that countries with higher masculinity are more likely to disclose information to external parties of the company. This is consistent with the desire for performance, material success, and visible achievement in high masculinity cultures.

For the control variables, the coefficients of the variables HET and FOREMS are negative and significant at the 1% threshold, which does not corroborate our predictions. Whereas the coefficients of the variables FMDEV and EBOF are positive and significant at the 1% threshold, which corroborates our predictions. Thus, we conclude that higher education and training and foreign market size negatively influence the SARS, while financial market development and ethical behavior of firms positively influence the SARS.

**Table 5.** National Culture Influence on the Strength of Auditing and Reporting Standards

| | OLS |
|---|---|
| | SARS |
| **FTR** | 0.136** |
| | (2.439) |
| **PDI** | -0.001 |
| | (-0.786) |
| **INDIV** | 0.002 |
| | (1.534) |
| **UA** | 0.003*** |
| | (3.137) |
| **MAS** | 0.003** |
| | (2.356) |
| **HET** | -0.003*** |
| | (-3.169) |
| **FMDEV** | 0.691*** |
| | (18.598) |
| **EBOF** | 0.177*** |
| | (4.790) |

| | |
|---|---|
| **FOREMS** | -0.097*** |
| | (-3.487) |
| **Constant** | 1.606*** |
| | (5.931) |
| **Year** | Yes |
| **Country** | Yes |
| **Observations** | 257 |
| **Adj. R-squared** | 0.867 |

This table presents the regression results regarding the impact of the National Culture Influence on the Strength of Auditing and Reporting Standards. The sample comprises 257 country–year observations from 2015 to 2017. T-statistics (shown in parentheses) are based on robust standard errors clustered at the firm level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. See Table 2 for variable definitions.

Data source: The authors

## Robustness tests

### *Generalized Least Squares (GLS)*

GLS regressions are a crucial tool in econometrics and statistics, particularly when dealing with data that exhibit certain types of violations of the classical linear regression assumptions. First, unlike Ordinary Least Squares (OLS), which assumes constant variance of the error terms, GLS can be used when the error terms have non-constant variance. This situation is known as heteroscedasticity. By modeling the variance structure, GLS provides more efficient and unbiased estimates. Second, GLS can account for autocorrelation in the error terms, which is common in time series data. Autocorrelation occurs when error terms are correlated across observations. By incorporating the autocorrelation structure into the model, GLS helps produce more reliable estimates. The results obtained from GLS modeling (Column 1 of Table 6) remained qualitatively the same as those obtained from the primary analysis, providing more efficient and reliable parameter estimates. We note that only the coefficient of the power distance variable becomes significant using this estimation method.

### *Generalized Method of. Moments (GMM)*

GMM was employed in our analysis for several key reasons. First, we suspect that some of our explanatory variables may be endogenous, potentially due to simultaneity or omitted variable bias. GMM provides a framework to use instrumental variables to correct for such endogeneity, allowing for more consistent and reliable parameter estimates. Second, we are analyzing panel data that includes a dynamic component where past values of the dependent variable may influence current values. GMM, particularly the Arellano-Bond estimator, is well-suited for dynamic panel

data models because it effectively handles the correlation between past and present values. The results obtained from GMM modeling (Column 2 of Table 6) remained qualitatively the same as those obtained from the primary analysis. The Arrelano-Bond model is generally supported by an important specification test. The Arrelano-Bond AR (2) test did not reveal any serial correlation in the first differenced errors at Order 2; therefore, our model was not subject to misspecification. We note that only the coefficients of the variables: ethical behavior of firms, and foreign market size become non-significant using this estimation method.

**Table 6.** Robustness Checks

| | GLS | GMM |
|---|---|---|
| | SARS | SARS |
| **Lag_SARS** | | 0.803*** |
| | | (40.868) |
| **FTR** | 0.068** | 0.050*** |
| | (2.492) | (2.728) |
| **PDI** | -0.003*** | -0.000 |
| | (-3.323) | (-0.230) |
| **INDIV** | 0.001 | -0.000 |
| | (1.026) | (-0.400) |
| **UA** | 0.003*** | 0.001*** |
| | (5.890) | (3.822) |
| **MAS** | 0.002*** | 0.000 |
| | (3.555) | (1.280) |
| **HET** | -0.003*** | -0.002*** |
| | (-5.037) | (-6.445) |
| **FMDEV** | 0.680*** | 0.180*** |
| | (43.017) | (10.361) |
| **EBOF** | 0.217*** | 0.006 |
| | (14.770) | (0.539) |
| **FOREMS** | -0.073*** | -0.009 |
| | (-4.685) | (-1.221) |
| **Constant** | 1.516*** | 0.230*** |
| | (12.442) | (2.904) |
| **Year** | Yes | Yes |
| **Country** | Yes | Yes |
| **Observations** | 257 | 171 |
| **Adj. R-squared** | | 0.958 |
| **AR1** | | (0.001)*** |
| **AR2** | | (0.296) |

This table examines the robustness of our regression results to alternative estimation methods: the GLS (Column 1) and the GMM (Column 2). The sample comprises 257 country–year observations from 2015 to 2017. T-statistics (shown in parentheses) are based on robust standard errors clustered at the firm level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. See Table 2 for variable definitions.

Data source: The authors

## Conclusion

National culture affects values and attitudes towards transparency, accountability, and trust, which may affect the degree of the strength of the standards of auditing and financial reporting. Ongoing international efforts to converge and harmonize standards demonstrate the value of a common platform for ensuring the consistency and comparability of financial reporting worldwide. In this regard, this research suggests that cultural influences and universal rules of transparency and integrity should be considered in the development and application of auditing and reporting standards. The main objective of this study was to identify specific cultural factors (among uncertainty avoidance, individualism, masculinity, power distance, and future temporal reference) that may influence SARS.

Statistical analyses were conducted on a sample of 142 countries observed over the 2015-2017 period (257 country-year observations). Our study shows that the variables power distance and individualism do not impact SARS. In contrast, future temporal reference, uncertainty avoidance, and masculinity positively and significantly impact SARS. Besides, higher education and training, financial market development, ethical behavior of firms, and foreign market size positively and significantly affect SARS.

Among the implications of these findings is the need to recognize national culture factors as determining elements in assessing SARS. More specifically, to ensure the robustness and relevance of the auditing and reporting standards, an inclusive approach that takes account of future temporal reference, uncertainty avoidance, and masculinity must be used. This awareness can lead to precise adjustments of these standards to suit specific national contexts.

This research will be useful for practitioners, auditors, and especially for standard setters of audit standards. For practitioners, the study of cultural dimensions allows them to adapt their work methods to local realities, improve their relationships with various parties, and better anticipate expectations and reactions. This promotes a more effective practice that is sensitive to the culturally appropriate context for making the right decisions at the right time (Migueles et al., 2024). The study of cultural dimensions allows auditors to better understand the behaviors of stakeholders, adapt their communication, and refine their professional judgments. It enhances their ability to detect risks specific to each cultural context. This promotes more effective audits that are better accepted locally. The standard setters for audit standards should integrate cultural dimensions into their process. This would allow for the adaptation of standards to various sociocultural contexts, thereby improving their applicability, their perception by investors (Baig et al., 2024), and their effectiveness on an international scale.

This study has some limitations. We used only five dimensions of national culture, namely future temporal reference, power distance, individualism, uncertainty avoidance, and masculinity; accordingly, future studies are recommended to analyze the effect of other dimensions of national culture on the strength of auditing and reporting standards. In this sense, Hofstede and Bond (1988) present a fifth cultural dimension, long/short-term orientation, which measures the value placed on short-term versus long-term orientation. The current study excluded this cultural dimension, as scores are not available for many countries observed. In addition, future research can explore other factors that may influence SARS, such as countries' legal systems, judicial independence, and institutional infrastructures. Besides, the consideration of moderators (e.g., ethical behavior) for the relation between SARS and national culture could be examined.

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## Appendix: Selected sample

| Countries | | | | | |
|---|---|---|---|---|---|
| Albania | 1 | Greece | 48 | Netherlands | 95 |
| Algeria | 2 | Guatemala | 49 | New Zealand | 96 |
| Argentina | 3 | Guinea | 50 | Nicaragua | 97 |
| Armenia | 4 | Guyana | 51 | Nigeria | 98 |
| Australia | 5 | Haiti | 52 | Norway | 99 |
| Austria | 6 | Honduras | 53 | Oman | 100 |
| Azerbaijan | 7 | Hong Kong SAR, China | 54 | Pakistan | 101 |
| Bahrain | 8 | Hungary | 55 | Panama | 102 |
| Bangladesh | 9 | Iceland | 56 | Paraguay | 103 |
| Belgium | 10 | India | 57 | Peru | 104 |
| Benin | 11 | Indonesia | 58 | Philippines | 105 |
| Bhutan | 12 | Iran, IslamicRep. | 59 | Poland | 106 |
| Bolivia | 13 | Ireland | 60 | Portugal | 107 |
| Bosnia and Herzegovina | 14 | Israel | 61 | Qatar | 108 |
| Botswana | 15 | Italy | 62 | Romania | 109 |
| Brazil | 16 | Jamaica | 63 | Russian Federation | 110 |
| Brunei Darussalam | 17 | Japan | 64 | Rwanda | 111 |
| Bulgaria | 18 | Jordan | 65 | Saudi Arabia | 112 |
| Burundi | 19 | Kazakhstan | 66 | Senegal | 113 |
| Cabo Verde | 20 | Kenya | 67 | Serbia | 114 |
| Cambodia | 21 | Korea, Rep. | 68 | Seychelles | 115 |
| Cameroon | 22 | Kuwait | 69 | Sierra Leone | 116 |
| Canada | 23 | Kyrgyz Republic | 70 | Singapore | 117 |
| Chad | 24 | Lao PDIR | 71 | Slovak Republic | 118 |
| Chile | 25 | Latvia | 72 | Slovenia | 119 |
| China | 26 | Lebanon | 73 | South Africa | 120 |
| Colombia | 27 | Lesotho | 74 | Spain | 121 |
| Congo, Dem Rep. | 28 | Liberia | 75 | Sri Lanka | 122 |
| Costa Rica | 29 | Lithuania | 76 | Swaziland | 123 |
| Cote d'Ivoire | 30 | Luxembourg | 77 | Sweden | 124 |
| Croatia | 31 | Macedonia, FYR | 78 | Switzerland | 125 |
| Cyprus | 32 | Madagascar | 79 | Tajikistan | 126 |
| Czech Republic | 33 | Malawi | 80 | Tanzania | 127 |
| Denmark | 34 | Malaysia | 81 | Thailand | 128 |
| Dominican Republic | 35 | Mali | 82 | Trinidad and Tobago | 129 |
| Ecuador | 36 | Malta | 83 | Tunisia | 130 |
| Egypt, ArabRep. | 37 | Mauritania | 84 | Turkey | 131 |
| El Salvador | 38 | Mauritius | 85 | Uganda | 132 |
| Estonia | 39 | Mexico | 86 | Ukraine | 133 |
| Ethiopia | 40 | Moldova | 87 | United Arab Emirates | 134 |
| Finland | 41 | Mongolia | 88 | United Kingdom | 135 |
| France | 42 | Montenegro | 89 | United States | 136 |
| Gabon | 43 | Morocco | 90 | Uruguay | 137 |
| Gambia | 44 | Mozambique | 91 | Venezuela, RB | 138 |
| Georgia | 45 | Myanmar | 92 | Vietnam | 139 |
| Germany | 46 | Namibia | 93 | Yemen, Rep. | 140 |
| Ghana | 47 | Nepal | 94 | Zambia | 141 |
| | | | | Zimbabwe | 142 |
| | | | | Total countries | 142 |