

The influence of national culture on the relationship between corporate governance and earnings management^{*,**}

Caroline Keidann Soschinski¹

 <https://orcid.org/0000-0002-0135-0729>

Email: csoschinski@furb.br

Darclê Costa Silva Haussmann¹

 <https://orcid.org/0000-0002-6647-4722>

Email: darcle@furb.br

Danrlei Anderson Peyerl¹

 <https://orcid.org/0000-0001-6517-1028>

Email: dpeyerl@furb.br

Roberto Carlos Klann¹

 <https://orcid.org/0000-0002-3498-0938>

Email: rklann@furb.br

¹Fundação Universidade Regional de Blumenau, Programa de Pós-Graduação em Ciências Contábeis, Blumenau, SC, Brazil

Received on 09.04.2019 – Desk acceptance on 09.27.2019 – 2nd version approved on 12.06.2020

Editor-in-Chief: Fábio Frezatti

Associate Editor: Eliseu Martins

ABSTRACT

The aim of the study was to analyze the influence of the dimensions of national culture on the relationship between corporate governance (CG) and earnings management (EM). There is evidence that in certain cultural contexts CG mechanisms appear to be ineffective in minimizing EM. Studies on governance and its influence on accounting information quality can help market participants make better decisions. It is important to include the cultural context in this relationship as it sheds light on an aspect that has hardly been explored in the research, which can improve the informational environment of organizations. In practical terms, the results may contribute to organizations paying more attention to the cultural influence of countries when implementing or improving their governance mechanisms, with the aim of making them more effective in aligning interests and monitoring behaviors in organizations. Moreover, market participants may require alterations in these mechanisms in more individualistic and indulgent cultural contexts. The sample was composed of 18,707 observations of companies located in 24 countries belonging to the G20 group, covering 2010 to 2017. The data were operationalized using a multiple linear regression, with robust standard errors and controls for sector and year fixed effects, using the propensity score matching (PSM) method. The premise that CG can minimize EM was confirmed in this research, except in individualistic and indulgent countries. In these cultural contexts, governance mechanisms tend to be ineffective in minimizing EM. These results contribute to the literature by highlighting that the culture of countries can impact the effectiveness of CG in mitigating opportunistic practices, which explains the ambiguous results of previous research.

Keywords: earnings management, corporate governance, national culture.

Correspondence address

Caroline Keidann Soschinski

Fundação Universidade Regional de Blumenau, Programa de Pós-Graduação em Ciências Contábeis
Rua Antônio da Veiga, 140, Sala 202, Bloco D – CEP 89030-903
Itoupava Seca – Blumenau – Santa Catarina – Brazil

* Article presented at the 13th ANPCONT Congress, São Paulo, SP, Brazil, June of 2019.

** The authors are grateful to the National Council for Scientific and Technological Development (CNPq) for its financial support to carry out this research (*Edital Chamada Universal MCTIC/CNPq 2018*).



1. INTRODUCTION

The problems organizations face arising from the separation between ownership and control have been known through the literature since the study of Berle and Means (1932). For Jensen and Meckling (1976), managers' interests may clash with those of equity holders and, as a result, the former tend to act in favor of their own individual goals, neglecting shareholders' objectives.

Managers' individual incentives to act in their own interest can vary, such as the need to achieve a particular goal related to results or market expectations (Healy & Wahlen, 1999). As a result of such incentives, managers may adopt earnings management (EM) strategies. Despite these strategies not violating accounting standards or norms, they can lead to less reliable and poorer quality accounting statements, considering that stakeholders place their trust in the numbers reported and make their decisions based on them (Rahman & Ali, 2006).

Given the agency problems that can encourage EM practices, Rahman and Ali (2006) state that it is extremely important for organizations to include control mechanisms to safeguard shareholders' interests and guarantee transparent and quality information for the interested parties. These mechanisms are known as corporate governance (CG) practices and are included in organizations with the aim of controlling agency problems and thus mitigating EM practices (Peasnell et al., 2005).

Previous studies have investigated the relationship between CG and EM in companies in different countries and have indicated that in some cases CG is unable to mitigate EM practices. For example, Rahman and Ali (2006) found that the board of directors was ineffective in minimizing EM practices in companies listed on the Bursa Malaysia Berhad and, contrary to what was predicted, they identified that CG encouraged greater EM. More recently, Matteo and Francesco (2018) revealed that the internal participation of shareholders was unable to minimize EM in Brazil, while Waweru and Prot (2018) identified CG mechanisms that influenced EM practices differently in East Africa, finding divergences among their results.

Other authors have sought explanations for the results that have highlighted the ineffectiveness of CG in mitigating EM, noting that these results may be conditioned by external factors, such as aspects of the institutional, legal, or cultural environment (Bao & Lewellyn, 2017; Filatotchev et al., 2013). This research focuses on the latter, by considering that the composition and structure of CG systems reflect the predominant cultural influences in the society in which organizations

operate (Daniel et al., 2012; Humphries & Whelan, 2017; Li & Harrison, 2008). The empirical evidence of Bao and Lewellyn (2017), for example, show that the relationship between the ownership structure and EM was significantly moderated by institutional elements at the country level.

Considering that the empirical results of studies suggest that national culture may have relevant effects on CG [see, for example, Li and Harrison (2008), Daniel et al. (2012), and Humphries and Whelan (2017)], it is understood that this aspect should be taken into account in transnational studies (Li & Harrison, 2008). Therefore, it is assumed that the norms that form part of the culture of a society affect the structure of its organizations (Li & Harrison, 2008). Thus, based on the recommendations of Bao and Lewellyn (2017), a gap is identified in terms of research that seeks to investigate the role of national culture in the relationship between CG and EM.

This study is therefore based on the assumption that cultural characteristics can enhance or weaken the effectiveness of CG mechanisms in mitigating EM. Considering that the cultural norms of a society affect the organizational structure (Li & Harrison, 2008), investigating the relationship between CG and EM in different cultural contexts can broaden the understanding of the results revealed by the literature. In light of this, the following research question arises: what is the influence of the dimensions of national culture on the relationship between CG and EM?

This research is warranted by the finding of Bao and Lewellyn (2017) that most studies on EM concern companies located in a single country. This reveals the little attention given to the impact of the national environment and thus warrants the present study, which considers companies from 24 countries exposed to different cultural characteristics and therefore enables comprehensive results.

The contributions provide evidence that CG mechanisms at a company level can influence EM practices differently when immersed in culturally different contexts. This makes it possible to understand why in some contexts CG does not appear to show the same effectiveness in minimizing EM. Moreover, a theoretical contribution is derived from identifying that managers' behavior – understood as behavior focusing on their own interests, but minimized by control mechanisms, such as CG controls – can be influenced by the cultural values of the country they belong to.

It is also noted that the studies have investigated the impact of CG on EM by considering governance mechanisms in isolation (such as characteristics of the audit committee or of the board of directors). In contrast, this study uses aggregate measures that reveal the effectiveness of mechanisms related to management, to protecting shareholders, and to integration strategies.

It is important to analyze CG using different mechanisms as, according to Bao and Lewellyn (2017), the main agency conflict in emerging countries occurs between majority and minority shareholders and, in this context, the management mechanisms would be unable to mitigate EM practices, thus requiring control mechanisms for shareholder behavior.

2. ANTECEDENTS AND THEORETICAL REVIEW OF THE LITERATURE

EM practices are usually divided in the literature into accruals-based and real EM. Accruals-based EM is also called accounting-based EM by the researchers and refers to situations allowed by accounting rules, but with a specific purpose, with the aim of increasing or reducing earnings in the period. Fields et al. (2001) indicate, as examples, the decision to choose the stock evaluation method, choosing to structure a lease contract so that it qualifies for operational lease treatment [although with International Financial Reporting Standards (IFRS) 16, as of 2019 this no longer applies], choices that affect the level of disclosure, and even choices at the moment of adopting the accounting standards.

Real EM is known as operations-based EM. This is related to the type of EM in which, with the aim of achieving a specific objective, managers decide to modify certain levels of company operating activities, normally measured using accounting records. For Gunny (2010), real EM occurs when managers carry out actions that alter the structure of an operation, investment, and/or financing, in order to influence the production of the accounting system. For example, this can include increased sales through liquidation, increased production to dilute fixed costs, and reduced research and development (R&D) spending, among others.

The review of previous research reveals that CG mechanisms are known to be means that can mitigate conflicts of interest and opportunistic manager behavior; that is, CG acts as a restrictive factor for EM practices (Bajra & Cadez, 2018; Hutchinson et al., 2008; Leuz et al., 2003). In some contexts, however, results were identified that revealed the ineffectiveness of CG mechanisms for this purpose (Ali Shah et al., 2009; Jiraporn et al., 2008).

In order to understand the divergence among the previous findings, Bao and Lewellyn (2017) investigated country-level factors that can impact the relationship between CG and EM. The authors found that the relationship between ownership structure and EM is influenced by institutional elements, and they recommended that future investigations analyze the influence of other country-level factors on the relationship between the topics, such as legal and cultural aspects.

The premise that the culture of countries may be a factor that influences both CG and EM organizational practices is based on Gray's (1988) cultural influence approach. The author developed a theoretical lens that perceives organizations as accounting systems that are influenced by cultural values and tendencies derived from the country in which they operate. Gray's (1988) research was based on the national culture model proposed by Hofstede (1980). The most up-to-date model from Hofstede et al. (2010) considers six cultural dimensions: power distance, individualism versus collectivism; masculinity versus femininity; uncertainty avoidance; long-term orientation versus short-term orientation; and indulgence versus restraint.

Besides investigating national culture, studies such as that of Haga et al. (2019) have sought to identify whether companies in cultural contexts geared toward the long or short term tend to manage earnings more through real activities or through accruals. They have discovered that companies in cultures with a long-term orientation depend more on accruals-based EM, while those in cultures with a short-term orientation engage more in real EM. These results show the importance of studying these relationships.

3. EMPIRICAL REVIEW AND DEVELOPMENT OF THE RESEARCH HYPOTHESES

The assumptions that CG reduces EM practices and that, conversely, the country's culture is a determining factor for the increased and/or reduced effectiveness

of control mechanisms, both provide the basis for the hypotheses of this research. Explanations are therefore given below for assuming that the six dimensions of

national culture from Hofstede's model play a moderating role in the relationship between CG and EM.

According to Hofstede (2011), the cultural dimension of power distance portrays the measure of how much individuals accept and expect power to be distributed in organizations, institutions, and society. In societies with a high power distance, individuals accept inequality, they have the need for hierarchies, and they believe that people who have more power should also have more privileges.

For Ugrin et al. (2017), societies exposed to a high power distance have greater autonomy and are questioned less about their practices and, for that reason, managers tend to show opportunistic behavior, which implies greater EM. Other studies also support this premise, such as those of Doupnik (2008) and Gray et al. (2015). It is therefore assumed that in societies with a high power distance, CG mechanisms tend to be less effective, as managers have greater autonomy over their decisions and tend to behave opportunistically, managing earnings more intensively. Within this context, the first hypothesis of this study is formulated as follows:

H₁: the capacity of CG to mitigate EM practices is reduced in countries whose national culture is based on a high power distance.

Individualism versus collectivism measures the degree to which individuals take care of themselves or remain part of groups. Individualistic cultures are more self-aware and value individual contributions, while collectivist cultures value the contributions of the group (Hofstede, 2018).

The studies of Han et al. (2010) and Ugrin et al. (2017) highlighted the positive relationship between individualism and EM, which is based on the understanding that this cultural tendency is associated with greater flexibility and managers' willingness to report more optimistic numbers. Therefore, as it is understood that individualism encourages opportunistic manager behavior, it is perceived that CG mechanisms will be less effective in minimizing EM, since in these societies managers are more likely to manipulate earnings. This gives rise to the second research hypothesis:

H₂: the capacity of CG to mitigate EM practices is reduced in countries whose national culture is based on individualism.

For Hofstede (2011), the masculinity cultural dimension refers to societies that prioritize performance and success and are characterized as being more objective when compared with feminine values, which prioritize a higher quality of life and personal relationships. Moreover, Li and Harrison (2008) state that competitiveness,

assertiveness, and material ambition are tendencies of a masculine society.

According to Paredes and Wheatley (2017), managers in masculine societies tend to be less concerned about external interests and prioritize individuals, making them more likely to engage in EM. Due to managers focusing on private objectives and not on those of the organization, CG is expected to be less effective in its role of minimizing agency problems, as these problems are more present in highly masculine societies. Within this context, the third hypothesis of this study is formulated:

H₃: the capacity of CG to mitigate EM practices is reduced in countries whose national culture is based on masculinity.

Societies with high uncertainty avoidance are associated with more rigid rules and control, using these with the aim of preventing and avoiding uncertain situations (Han et al., 2010). As a result, according to Han et al. (2010), company managers in this cultural context would engage less in EM, because the greater control and rigid rules would mitigate opportunistic EM practices.

The negative relationship between the cultural context of uncertainty avoidance and EM is also supported by Paredes and Wheatley (2017), who identified that countries with high uncertainty avoidance prefer to be more conservative and seek to avoid the risk associated with EM practices. Based on this, in societies that avoid uncertainty the capacity of CG mechanisms to mitigate EM is expected to be strengthened, as these societies adhere to more rigid controls. Therefore, the fourth hypothesis of this research is formulated:

H₄: the capacity of CG to mitigate EM practices is strengthened in countries whose national culture is based on uncertainty avoidance.

Long-term orientation versus a short-term orientation is related to the expected time of return in terms of compensation or results from a task or implemented action. Societies with a long-term orientation tend to be more concerned about perpetuating into the future and, for this reason, they strive for continuous results (Hofstede, 1991).

According to Ugrin et al. (2017), societies with a short-term orientation may be inclined to manage earnings in order to stabilize or increase current profits, without considering the negative future effects, such as the reduction in earnings quality; these cultures are motivated by the positive immediate effects resulting from EM. However, in cultures with a long-term orientation, companies are more cautious in their decisions and tend to manage a smaller proportion of earnings.

It is believed that the capacity of CG mechanisms to mitigate EM practices is strengthened in societies with a long-term orientation, given that this cultural tendency values greater control and transparent information, with a view to perpetuating organizations in the long run. Therefore, the fifth hypothesis of this study is formulated:

H₅: the capacity of CG to mitigate EM practices is strengthened in countries whose national culture is based on a long-term orientation.

The indulgence versus restraint cultural dimension is defined as the measure of how much societies control their desires. In indulgent societies, the controls are considered to be relatively weak, unlike in restrained societies, which require more rules and laws that make the controls relatively strong (Hofstede et al., 2010).

According to Ugrin et al. (2017), companies in societies with an indulgent culture are more likely to engage in opportunistic EM practices, as there is more freedom to act in favor of their own interests. In contrast, companies in societies exposed to a restrained culture tend to manage earnings less intensely, as they are exposed to a context

in which laws and restrictions are more common, which naturally mitigates this practice.

Based on the above, the capacity of CG mechanisms to minimize EM is assumed to be reduced in countries with a cultural tendency for indulgence, as these societies are less likely to include laws and restrictions in their processes. Within this context, the sixth hypothesis of this study is formulated:

H₆: the capacity of CG to mitigate EM practices is reduced in countries whose national culture is based on indulgence.

The authors of this research did not find any studies that addressed the moderating role of national culture in the relationship between CG and EM and so the six research hypotheses were formulated based on the concepts of the dimensions of Hofstede's (2018) national culture model and on the relationship that has already been supported in the literature between national culture and opportunistic EM practices. Therefore, in line with the theoretical support presented, the theoretical analysis model is shown in Figure 1.



Figure 1 Theoretical analysis model
Source: Elaborated by the authors.

4. METHODOLOGICAL PROCEDURES

The research population was composed of companies from countries that comprise the G20 group and have national culture scores, based on Hofstede's (2018) model. The data were collected from the Refinitiv Eikon database. Companies located in countries belonging to the G20 were chosen due to their economic representativeness and because the almost 40 countries in this group are dissimilar in cultural terms, which is important when analyzing national culture.

To delineate the sample, companies were excluded that lacked the information needed to calculate the variables, as well as companies from the financial sector (as they have particular characteristics such as different leverage levels, which can bias the results of the estimation models). Moreover, companies that lacked information on EM practices were excluded (this was the criterion that led to the greatest exclusion of companies). The sample totaled 18,707 observations of companies located in 24 countries, covering 2010 to 2017, as presented in Table 1.

Table 1*Population and delineation of the research sample*

Panel A – Delineation of the sample by year and country										
Countries	2010	2011	2012	2013	2014	2015	2016	2017	Total	%
Argentina	-	-	-	-	-	-	4	26	30	0.16
Australia	141	160	181	212	232	239	257	263	1,685	9.01
Belgium	16	17	17	18	18	19	20	21	146	0.78
Brazil	26	56	62	64	70	72	73	73	496	2.65
Canada	150	165	174	180	197	210	221	227	1,524	8.15
China	55	105	114	114	121	131	142	147	929	4.97
Denmark	18	18	18	18	19	20	21	21	153	0.82
Finland	23	23	23	24	24	24	24	24	189	1.01
France	73	74	75	76	76	77	81	82	614	3.28
Greece	10	10	10	11	11	11	11	11	85	0.45
Germany	61	69	71	73	77	79	83	85	598	3.20
India	38	58	61	65	73	79	82	82	538	2.88
Indonesia	11	19	20	21	26	29	31	31	188	1.00
Ireland	23	23	24	27	30	32	32	32	223	1.19
Italy	25	26	26	26	26	27	28	28	212	1.13
Japan	340	346	350	356	363	368	375	377	2,875	15.37
Mexico	13	18	19	22	25	29	29	34	189	1.01
Netherlands	28	29	30	32	34	36	39	41	269	1.44
Poland	10	14	15	15	18	19	19	19	129	0.69
Russia	26	28	30	31	31	32	33	33	244	1.30
South Korea	33	72	79	82	84	88	96	97	631	3.37
Spain	29	30	32	33	36	36	37	37	270	1.44
Turkey	9	16	16	17	18	19	19	19	133	0.71
USA	546	569	580	590	605	772	1,229	1,466	6,357	33.98
Total	1,704	1,945	2,027	2,107	2,214	2,448	2,986	3,276	18,707	100.00
Panel B – Delineation of the sample by year and sector										
Sectors	2010	2011	2012	2013	2014	2015	2016	2017	Total	%
1	305	347	361	375	400	440	548	600	3376	18.05
2	126	142	154	158	166	185	219	226	1376	7.36
3	170	194	208	212	222	240	262	280	1788	9.56
4	127	139	143	156	168	199	287	340	1559	8.33
5	346	409	419	431	447	503	615	683	3853	20.60
6	194	211	214	228	239	281	391	449	2207	11.80
7	258	295	311	321	333	350	388	403	2659	14.21
8	51	64	69	73	82	84	91	93	607	3.24
9	47	52	52	56	58	60	69	75	469	2.51
10	80	92	96	97	99	106	116	127	813	4.35
Total	1,704	1,945	2,027	2,107	2,214	2,448	2,986	3,276	18,707	100.00

Note: The sectors were classified using the Global Industry Classification Standard Code (1 = discretionary consumption; 2 = consumer goods; 3 = energy; 4 = health; 5 = industrial; 6 = information technology; 7 = basic materials; 8 = real estate; 9 = telecommunications; 10 = utilities).

Source: Elaborated by the authors.

The analysis in Panel A of Table 1 shows that the most representative countries are the United States and Japan, which together represent approximately

50% of the sample. Panel B, in turn, shows that the most representative sectors are industrial (20.60%) and consumer goods (18.05%). Table 1 shows the general

evolution in the number of companies that started to adopt CG practices, as the number of companies increased by around 52% from 2010 to 2017 (1,704 in 2010 to 3,216 in 2017). Finally, it is worth noting that

this period was chosen to carry out the research because the database only includes representative information about CG after 2010.

Table 2 shows the research variables.

Table 2
Research variables

Variables	Description	Calculation/formula	Authors
Dependent variable			
Earnings management (EM)	Discretionary accruals operationalized in absolute values.	Kothari et al. (2005) model.	Proposed by the authors.
Independent variable			
Corporate governance (CG)	Measures the systems and processes of a company, ensuring that its members and executives act in the best interest of its shareholders in the long run.	Own methodology of Refinitiv Eikon, which includes mechanisms focusing on management, shareholders, and strategies.	Proposed by the authors.
Independent moderating variables			
Power distance (PD_CULT)	Measures whether the least powerful members of an institution expect and accept the hierarchy (power) to be distributed unequally.		
Individualism (INDI_CULT)	Measures the degree of interdependence that a society maintains among its members.		Hofstede (1980, 2018)
Masculinity (MAS_CULT)	Measures the division of roles between men and women in the society.		
Uncertainty avoidance (UA_CULT)	Measures how much the members of a culture feel threatened by uncertain situations and create rules to try to avoid them.	Score proposed by Hofstede, which varies from 0 to 100.	
Long-term orientation (LTO_CULT)	Measures whether people prefer to maintain honored traditions and norms (STO) or favor pragmatic virtues orientated toward the future (LTO).		Hofstede (1991, 2018)
Indulgence (INDU_CULT)	Measures how much people try to control their desires and impulses. In the case of indulgence, control in the country is relatively weak, while in the case of restraint it is considered to be relatively strong.		Hofstede et al. (2010), Hofstede (2018)
Independent control variables			
Size (SIZ _{it})	Natural logarithm (NL) of total revenue	NL of total revenue	Haga et al. (2018)
Return on assets (ROA)	Return on assets	Net income in t-1 divided by total assets in t-1	Lin et al. (2016)
Leverage (LEV)	Share of third-party resources in the company's capital structure	Total liabilities divided by total net equity	Beuren & Klann (2015)
Sales growth (SG)	Sales growth calculated by the change in revenues	Percentage of change in sales	Beuren & Klann (2015)
Real activities-based earnings management (REM _{it})	Production costs and discretionary spending model	Models based on Roychowdhury (2006)	Zang (2012)
International Financial Reporting Standards (IFRS)	Identifies the year in which the countries obligatorily adopted IFRS	Categorical variable in which 1 represents the year in which the country adopted IFRS, and 0 otherwise	Isidro et al. (2020)
Sector (sector _i)	Main activity classified using the Global Industry Classification Standard Code	Sector dummies	Haga et al. (2018)
Year	Analysis period: from 2010 to 2017	Year dummies	Haga et al. (2018)

Source: *Elaborated by the authors.*

CG was calculated using the Kothari et al. (2005) model, which included return on assets (ROA) as an explanatory variable for total accruals, based on the assumption that total accruals could be influenced by the company's profitability, but not through manipulation. The

$$TA_{it} = \delta_0 + \delta_1 \frac{1}{A_{it-1}} + \delta_2 (\Delta V_{it} - \Delta REC_{it}) + \delta_3 PPE_{it} + \delta_4 ROA_{it} + \varepsilon_{it} \quad \mathbf{1}$$

in which TA_{it} are the total accruals obtained by the change in working capital and scaled by A_{t-1} , A_{it-1} are the total assets of company i in period $t-1$, ΔV_{it} is the change in sales scaled by A_{t-1} , ΔREC_{it} is the change in receivables scaled by A_{t-1} , PPE_{it} are the gross fixed assets scaled by A_{t-1} , ROA_{it} is the return on assets scaled by A_{t-1} , ε_{it} is the regression error, and $\delta_0, \delta_1, \delta_2, \delta_3,$ and δ_4 are the estimated coefficients of the regression.

Total accruals were calculated based on the change in working capital corresponding to the sum of the change in receivables, the change in stocks, and the change in other assets minus the change in accounts payable and tax payable, as proposed by Dechow and Dichev (2002). The Kothari et al. (2005) model was operationalized cross-sectionally by country, sector, and year.

The variable relating to CG was collected from the Refinitiv Eikon database, which considers the CG pillar to be the quantity of mechanisms that each organization has, which can focus on management, shareholders, and strategies for integrating economic, social, and environmental practices. These three types of mechanisms are considered dimensions of CG. The first (management) reflects the commitment and effectiveness of organizations in following what the database determines as best CG practices, the second (shareholders) reflects their effectiveness in treating minority and majority shareholders equally, and the third (integration of economic, social, and environmental practices) identifies the use of practices geared toward integrating these topics into strategies and day-to-day company decision-making processes.

Using its own methodology, the database provides a general score for the CG mechanisms that are related to the three aforementioned dimensions. The database uses criteria to obtain this final score; that is, if the company has or does not have a particular practice related to the CG dimensions. The score ultimately shows, in quantitative terms from 0 to 100, the quantity of CG practices that each company has.

The mechanisms related to management evaluate, for example, whether the company has or does not have a policy on functions of the board and audit committee or

Kothari et al. (2005) model is an extension of the modified Jones model (Dechow et al., 1995). The econometric model for estimating accruals used in this research can be observed in equation 1.

a policy for board and audit committee independence, among others. The mechanisms related to shareholders evaluate the effectiveness of the companies in treating their shareholders equally and in using anti-takeover devices through policies for equal voting rights or shareholder engagement, among others. Finally, the mechanisms used to communicate and integrate the economic (financial), social, and environmental dimensions into their decision-making processes cover the sustainability committee, engagement of interested parties, the sustainability report, and the Global Reporting Initiative (GRI) guidelines, among others.

According to the information provided by the database in 2018, the CG pillar considers more than 100 items, in which 55 involve the management dimension, 35 involve the shareholders dimension, and 11 involve integration strategies. The weight of each dimension derives from the magnitude of weights of each group of sectors and ultimately shows the quantity of CG practices that each company uses.

Considering the number of mechanisms of each company, the database generates a final score, which was used in this research as a general measure of CG. The methodology used to evaluate the CG pillar of each company can be verified in detail in the Refinitiv Environmental, Social, and Governance (ESG) report.

The national culture model used in this research was developed by Gert Hofstede (2018) and is composed of six cultural dimensions: (i) power distance; (ii) individualism versus collectivism; (iii) masculinity versus femininity; (iv) uncertainty avoidance; (v) long-term orientation versus short-term orientation; and (vi) indulgence versus restraint. Each one of these is measured on a scale from 0 to 100. The closer to 100, the greater the power distance, individualism, masculinity, uncertainty avoidance, long-term orientation, and indulgence in the society.

The variables shown in Table 2 were operationalized using a multiple linear regression (ordinary least squares – OLS), with robust standard errors and sector and year fixed effects. The general equation from which the models were derived is the following:

$$EM = \alpha_0 + \beta_1 CG_{it} + \delta_n \sum CULT_j + \delta_n \sum CULT_j * CG_{it} + \varnothing_n \sum SG_{it} + \varepsilon_{it} \quad \mathbf{2}$$

With relation to the assumptions of the regression, it should be highlighted that using robust standard errors minimized heteroscedasticity problems, multicollinearity was tested using the variance inflation factor (VIF) test,

autocorrelation of the residuals was tested using the Durbin Watson test, and, finally, the normality was relaxed due to the number of observations obtained.

5. EMPIRICAL RESULTS AND DISCUSSION OF THE MAIN RESULTS

This section presents the analysis and discussion of the results. It should be noted that the hypotheses of this research were based on the assumption of a negative relationship between CG and EM, which has been confirmed empirically, but is not presented due to the limited space. Therefore, this section focuses on the influence of the dimensions of national culture on the relationship between the topics.

Table 3 presents the descriptive statistics of the research variables. It should be noted that the discretionary accruals

(EM_{it}) variable was operationalized in absolute values and real activities-based earnings management (REM_{it}) was operationalized in nominal values. Real activities-based earnings management (REM_{it}) was calculated based on the aggregate measure proposed by Cohen and Zarowin (2008). Moreover, it should be noted that the ROA, LEV, and SG variables are presented in their values winsorized from 1 to 99% and that the CG and national culture variables had their scales transformed from 0 to 100 to 0 to 10 so that they were similar to the scale of the other variables.

Table 3

Descriptive statistics

Panel A – Descriptive statistics of the company-level variables							
	EM_{it}	CG_{it}	SIZ_{it}	ROA_{it-1}	LEV_{it}	SG_{it}	REM_{it}
Mean	0.06	0.50	21.78	0.03	1.77	0.11	0.02
StDev	0.09	0.21	1.85	0.14	3.07	0.72	0.37
Minimum	0.00	0.02	5.63	-3.36	-10.70	-0.87	-1.77
25 Perc	0.01	0.33	20.88	0.01	0.65	-0.04	-0.12
Median	0.03	0.50	21.88	0.04	1.21	0.04	0.02
75 Perc	0.06	0.67	22.95	0.07	2.18	0.14	0.18
Maximum	0.96	0.99	26.93	0.30	20.42	11.25	1.94
Obs.	18,707						
Panel B – Descriptive statistics of the national culture variables							
	PD_j	$INDI_j$	MAS_j	UA_j	LTO_j	$INDU_j$	
Mean	56	54	52	68	52	50	
StDev	19	22	18	24	24	19	
25 Perc	38	37	42	48	35	34	
Median	58	55	55	75	47	49	
75 Perc	68	74	65	86	74	66	
24 countries							

UA = uncertainty avoidance; LEV_{it} = leverage; REM_{it} = real activities-based earnings management; SG_{it} = sales growth; StDev = standard deviation; PD = power distance; EM_{it} = Kothari et al. (2005) EM model; INDI = individualism; INDU = indulgence; MASC = masculinity; Obs. = observations; LTO = long-term orientation; Perc. = percentile; GDP_t = gross domestic product; ROA_{it-1} = return on assets; CSR_{it} = corporate social responsibility; SIZ_{it} = size.

Source: Elaborated by the authors.

The CG_{it} measure reveals that the companies have around 50% of the mechanisms analyzed by the database and that, in the sample, there are both companies with few CG practices (which can be verified by the minimum value of the variable) and companies with approximately 100% of the CG practices (which can be verified by the

maximum value of the variable). Moreover, the absolute discretionary accruals proxy shows that the companies in the sample manipulated their accounting values during the investigation period.

With relation to the other variables, it is observed that the companies present a positive ROA and that for every

R\$ 1.00 in own capital there is R\$ 1.77 in third-party capital. However, when analyzing the median for leverage, it is perceived that half of the companies finance their investments mostly with own capital. Finally, revenues showed growth from one year to the next, on average, and a high standard deviation, which may be due to companies with high values (maximum value of 11.25).

Among the dimensions of national culture of the countries in the sample, it is worth mentioning the high mean and median of uncertainty avoidance, which means

that most of the countries are likely to avoid situations that involve uncertainty.

Tables 4, 5, and 6 present the results regarding the influence of the cultural dimensions on the relationship between CG and EM. It should be noted that the CG and cultural variables were standardized in Z-scores before being multiplied, as suggested by Dawson (2014) for when non-binary variables are concerned. Table 4 shows the results of the influence of the national culture on the relationship between CG and EM for the whole sample.

Table 4

Results of the influence of the dimensions of national culture on the relationship between earnings management (EM) and corporate governance (CG)

	EM_{it}	EM_{it}	EM_{it}	EM_{it}	EM_{it}	EM_{it}
	β	β	β	β	β	β
Constant	(7.82)	(2.51)	(4.58)	(10.01)	(7.79)	(1.60)
CG_{it}	-0.0160** (-2.12)	-0.0210*** (-2.76)	-0.0154** (-2.02)	-0.0230*** (-3.06)	-0.0277*** (-3.62)	-0.0215*** (-2.83)
PD_j	-0.0251*** (-3.59)					
$CG_{it} * PD_j$	-0.0116* (-1.79)					
$INDI_j$	0.1555*** (17.76)					
$CG_{it} * INDI_j$	0.0122* (1.68)					
MAS_j	0.0517*** (6.86)					
$CG_{it} * MAS_j$	-0.0024 (-0.63)					
UA_j	-0.1955*** (-34.57)					
$CG_{it} * UA_j$	0.0046 (0.84)					
LTO_j	-0.2429*** (-31.11)					
$CG_{it} * LTO_j$	-0.0029 (-0.47)					
$INDU_j$	0.1304*** (17.74)					
$CG_{it} * INDU_j$	0.0100 (1.53)					
SIZ_{it}	-0.0203** (-2.30)	-0.0066 (-0.74)	-0.0218** (-2.50)	0.0081 (0.93)	0.0294*** (3.23)	-0.0000 (-0.00)
ROA_{it-1}	0.0078 (0.57)	0.0076 (0.55)	0.0106 (0.78)	-0.0054 (-0.40)	-0.0036 (-0.27)	0.0068 (0.51)
LEV_{it}	0.0125 (1.21)	0.0128 (1.25)	0.0132 (1.28)	0.0068 (0.67)	0.0099 (0.98)	0.0133 (1.29)

Table 4
Cont.

	EM _{it}					
	β	β	β	β	β	β
SC _{it}	0.0266*** (3.06)	0.0249*** (2.87)	0.0259*** (2.99)	0.0214** (2.51)	0.0224** (2.59)	0.0255*** (2.95)
REM _{it}	-0.1196*** (-13.15)	-0.1231*** (-13.61)	-0.1215*** (-13.36)	-0.1148*** (-12.83)	-0.1212*** (-13.50)	-0.1225*** (-13.52)
IFRS _j	0.1222*** (20.78)	0.0366*** (6.27)	0.1678*** (17.33)	0.0803*** (13.58)	-0.0205*** (-3.26)	0.0552*** (9.46)
Sig.	0.0000***	0.0000***	0.0000***	0.0000***	0.0000***	0.0000***
R ²	7.21%	8.47%	7.32%	10.46%	10.06%	8.10%
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	Yes	Yes	Yes	Yes
Max VIF	1.49	1.82	1.70	1.41	2.04	1.84
DW	1.99	1.99	1.99	1.99	1.99	1.99
Observations	18,707	18,707	18,707	18,707	18,707	18,707

UA_j = uncertainty avoidance score of each country; LEV_{it} = leverage; REM_{it} = real activities-based earnings management; SC_{it} = sales growth; PD_j = power distance score of each country; DW = Durbin Watson; FE = fixed effect; CG_{it} = CG score of each company; CG_{it}*UA_j = multiplication of the standardized values of CG and UA; CG_{it}*PD_j = multiplication of the standardized values of CG and PD; CG_{it}*INDI_j = multiplication of the standardized values of CG and INDI; CG_{it}*INDU_j = multiplication of the standardized values of CG and INDU; CG_{it}*MAS_j = multiplication of the standardized values of CG and MAS; CG_{it}*LTO_j = multiplication of the standardized values of CG and LTO; EM_{it} = discretionary accruals in absolute values estimated by the Kothari et al. (2005) model; IFRS = International Accounting Standards; INDI_j = individualism score of each country; INDU_j = indulgence score of each country; MAS_j = masculinity score of each country; LTO_j = long-term orientation score of each country; ROA_{it-1} = return on assets; Sig. = model significance; SIZ_{it} = log of total assets; Max VIF = highest variance inflation factor (VIF) value; β = standardized coefficient.

Ordinary least squares (OLS) regression with robust standard errors and sector and year fixed effect controls. *t* statistic in parentheses.

***, **, * = significance at 1, 5, 10%, respectively.

Source: Elaborated by the authors.

In this analysis, it is perceived that the significant results of the moderating variables are statistically sensitive, as they present a 10% probability that this relationship is not the case. Nonetheless, these results show the negative relationship between the CG and power distance interaction (CG_{it}*PD_j) and EM_{it} practices and the positive relationship between the CG and individualism interaction (CG_{it}*INDI_j) and EM_{it}. The sum of the coefficients of the interaction with the CG_{it} variable confirms the negative relationship for power distance (-0.0160 : -0.0116), but not the positive relationship for individualism (-0.0210 : 0.0122), which presents a negative sum.

The moderation of power distance differs from the theoretical assumption of this study, which is based on the premise that the cultural dimension of power distance, as discussed by Hofstede (2018), induces individuals to accept the unequal distribution of power in society and to believe that people with greater power should also have more privileges. For this reason, managers were expected

to have greater autonomy and to be less questioned about their practices, which, theoretically, would hinder the effectiveness of CG practices in reducing opportunistic practices such as EM. The moderation of individualism, in turn, is consistent with what was expected when analyzing the interaction coefficient, but not when analyzing the CG and interaction coefficients together, which reveal a negative sign between the topics.

Considering the statistical sensitivity of these results, the second analysis was carried out, in which the companies located in the most populous countries in the sample were excluded. As shown in Table 1, the United States and Japan together represent almost 50% of the sample, which may generate biased results, as the other cultural configurations are not emphasized given the considerable number of companies in these countries. For this reason, Table 5 presents the results of the influence of the dimensions of national culture on the relationship between CG and EM practices for 9,475 observations of companies belonging to the other countries.

Table 5

Results of the influence of the dimensions of national culture on the relationship between corporate governance (CG) and earnings management (EM) without companies located in the United States and Japan

	EM _{it}	EM _{it}	EM _{it}	EM _{it}	EM _{it}	EM _{it}
	β	β	β	β	β	β
Constant	(12.43)	(12.74)	(10.45)	(12.60)	(11.89)	(9.52)
CG _{it}	-0.0035 (-0.32)	0.0013 (0.12)	-0.0155 (-1.20)	-0.0130 (-1.27)	-0.0118 (-1.06)	-0.0090 (-0.80)
PD _j	0.0127 (1.10)					
CG _{it} *PD _j	-0.0187* (-1.82)					
INDI _j		-0.0257** (-1.96)				
CG _{it} *INDI _j		0.0246** (2.10)				
MAS _j			0.0371*** (4.67)			
CG _{it} *MAS _j			-0.0080 (-0.88)			
UA _j				-0.0519*** (-4.87)		
CG _{it} *UA _j				0.0056 (0.69)		
LTO _j					-0.0497*** (-4.86)	
CG _{it} *LTO _j					-0.0115 (-1.19)	
INDU _j						0.0562*** (4.54)
CG _{it} *INDU _j						0.0203* (1.88)
SIZ _{it}	-0.1138*** (-7.68)	-0.1187*** (-7.87)	-0.1016*** (-6.77)	-0.0956*** (-6.30)	-0.0874*** (-5.51)	-0.0919*** (-5.76)
ROA _{it-1}	-0.0221 (-0.78)	-0.0227 (-0.80)	-0.0203 (-0.71)	-0.0224 (-0.78)	-0.0253 (-0.88)	-0.0242 (-0.85)
LEV _{it}	0.0130 (0.82)	0.0127 (0.80)	0.0128 (0.81)	0.01378 (0.87)	0.0132 (0.84)	0.0136 (0.86)
SG _{it}	0.0478*** (3.02)	0.0489*** (3.08)	0.0448*** (2.84)	0.0455*** (2.88)	0.0468*** (2.96)	0.0473*** (2.98)
REM _{it}	-0.0642*** (-4.90)	-0.0637*** (-4.84)	-0.0683*** (-5.21)	-0.0644*** (-4.93)	-0.0663*** (-5.05)	-0.0667*** (-5.08)
IFRS _j	-0.1208*** (-10.52)	-0.1147*** (-10.50)	-0.1175*** (-10.20)	-0.1000*** (-7.48)	-0.1428*** (-13.06)	-0.1574*** (-12.69)
Sig.	0.0000***	0.0000***	0.0000***	0.0000***	0.0000***	0.0000***
R ²	5.53%	5.58%	5.62%	5.68%	5.68%	5.71%
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	Yes	Yes	Yes	Yes
Max VIF	1.64	1.70	1.70	1.51	1.71	1.75

Table 5

Cont.

	EM _{it}					
	β	β	β	β	β	β
DW	0.99	0.99	0.99	0.99	0.99	0.99
Observations	9,475	9,475	9,475	9,475	9,475	9,475

UA_j = uncertainty avoidance score of each country; LEV_{it} = leverage; REM_{it} = real activities-based earnings management; SG_{it} = sales growth; PD_j = power distance score of each country; DW = Durbin Watson; FE = fixed effect; CG_{it} = CG score of each company; CG_{it}*UA_j = multiplication of the standardized values of CG and UA; CG_{it}*PD_j = multiplication of the standardized values of CG and PD; CG_{it}*INDI_j = multiplication of the standardized values of CG and INDI; CG_{it}*INDU_j = multiplication of the standardized values of CG and INDU; CG_{it}*MAS_j = multiplication of the standardized values of CG and MAS; CG_{it}*LTO_j = multiplication of the standardized values of CG and LTO; EM_{it} = discretionary accruals in absolute values estimated by the Kothari et al. (2005) model; IFRS = International Accounting Standards; INDI_j = individualism score of each country; INDU_j = indulgence score of each country; MAS_j = masculinity score of each country; LTO_j = long-term orientation score of each country; ROA_{it-1} = return on assets; Sig. = model significance; SIZ_{it} = log of total assets; Max VIF = highest variance inflation factor (VIF) value; β = standardized coefficient.

Ordinary least squares (OLS) regression with robust standard errors and sector and year fixed effect controls. *t* statistic in parentheses.

***, **, * = significance at 1, 5, 10%, respectively.

Source: Elaborated by the authors.

Excluding the United States and Japan led to some changes in the results. First, the positive moderation of individualism in the relationship between CG and EM was significant at the 5% level (in Table 4 it was 10%) and the sum of the coefficients of CG_{it} and CG_{it}*INDI_j (0.0013 : 0.0246) was positive, thus giving this evidence greater reliability. Second, the positive and significant moderation, at a 10% level, of indulgence (non-significant in Table 4) indicates that this cultural dimension may imply less effectiveness of CG in mitigating EM. Third, the IFRS variable, which in Table 4 was positive in five of the six models, was negative in all of them in this analysis, which reveals that the adoption of IFRS implied a reduction in EM. Finally, the previous evidence that power distance contributes to CG mechanisms reducing EM was confirmed (at a 10% level).

To also verify the robustness of the results of the sample not considering companies from the United States and Japan, Table 6 presents the results of the propensity score matching (PSM) estimation. This method carries out pairing according to propensity scores in order to compare characteristics of control and treatment groups, based on similarity criteria. The treatment group was composed, in this analysis, of companies with better CG practices (in which 1 represents companies with a CG score above the 75 percentile of the sample, and 0 represents the rest) and the similarity criteria attributed were size, sector, and year.

Within the context of this study, the PSM seeks to verify whether the effectiveness of even the companies that show the best CG practices is impacted by the national culture with regards to their main objective of mitigating earnings management practices.

Table 6

Results of the influence of the dimensions of national culture on the relationship between corporate governance (CG) and earnings management (EM), excluding companies located in the United States and Japan, according to the propensity score matching (PSM)

	EM _{it}	EM _{it}	EM _{it}	EM _{it}	EM _{it}	EM _{it}
	β	β	β	β	β	β
Constant	(9.91)	(9.60)	(8.61)	(9.94)	(8.89)	(7.80)
CG _{it}	0.0218 (0.87)	0.0321 (1.26)	0.0103 (0.40)	0.0084 (0.35)	0.0233 (0.92)	0.02461 (0.95)
PD _j	0.0154 (0.91)					
CG _{it} *PD _j	-0.0162 (-1.11)					
INDI _j		-0.0276 (-1.41)				
CG _{it} *INDI _j		0.0346** (2.06)				

Table 6

Cont.

	EM _{it}	EM _{it}	EM _{it}	EM _{it}	EM _{it}	EM _{it}
	β	β	β	β	β	β
MAS _j			0.0394***			
			(3.20)			
CG _{it} *MAS _j			-0.0062			
			(-0.47)			
UA _j				-0.0618***		
				(-3.77)		
CG _{it} *UA _j				0.0150		
				(1.27)		
LTO _j					-0.0299*	
					(-1.95)	
CG _{it} *LTO _j					-0.0395***	
					(-2.66)	
INDU _j						0.03596**
						(2.19)
CG _{it} *INDU _j						0.0428***
						(2.63)
SIZ _{it}	-0.1048***	-0.1066***	-0.0974***	-0.0905***	-0.0834***	-0.0873***
	(-6.54)	(-6.75)	(-6.22)	(-5.68)	(-4.99)	(-5.19)
ROA _{it-1}	-0.0121	-0.0125	-0.0099	-0.0102	-0.0134	-0.0108
	(-0.25)	(-0.26)	(-0.21)	(-0.21)	(-0.28)	(-0.23)
LEV _{it}	-0.0073	-0.0075	-0.0088	-0.0072	-0.0073	-0.0068
	(-0.61)	(-0.63)	(-0.74)	(-0.60)	(-0.62)	(-0.58)
SG _{it}	0.0460*	0.0477*	0.0429*	0.0435*	0.0475*	0.0469*
	(1.88)	(1.95)	(1.76)	(1.79)	(1.93)	(1.91)
REM _{it}	-0.0573***	-0.0571***	-0.0614***	-0.0568***	-0.0604	-0.0595***
	(-3.63)	(-3.58)	(-3.86)	(-3.62)	(-3.81)	(-3.76)
IFRS _j	-0.1249***	-0.1219***	-0.1184***	-0.0982***	-0.1430***	-0.1567***
	(-7.87)	(-8.00)	(-6.97)	(-4.84)	(-8.87)	(-9.23)
TREAT	-0.0212	-0.0228	-0.0208	-0.0196	-0.0226	-0.0224
	(-0.83)	(-0.90)	(-0.82)	(-0.77)	(-0.89)	(-0.88)
Sig.	0.0000***	0.0000***	0.0000***	0.0000***	0.0000***	0.0000***
PSM Criterion	Size, Sector, and Year					
R ²	5.98%	6.04%	6.08%	6.17%	6.23%	6.26%
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	Yes	Yes	Yes	Yes
Max VIF	3.40	3.54	3.89	3.25	3.46	3.45
DW	0.46	0.46	0.46	0.46	0.46	0.46
Observations	4,738	4,738	4,738	4,738	4,738	4,738

UA_j = uncertainty avoidance score of each country; LEV_{it} = leverage; REM_{it} = real activities-based earnings management; SG_{it} = sales growth; PD_j = power distance score of each country; DW = Durbin Watson; FE = fixed effect; CG_{it} = CG score of each company; CG_{it}*UA_j = multiplication of the standardized values of CG and UA; CG_{it}*PD_j = multiplication of the standardized values of CG and PD; CG_{it}*INDI_j = multiplication of the standardized values of CG and INDI; CG_{it}*INDU_j = multiplication of the standardized values of CG and INDU; CG_{it}*MAS_j = multiplication of the standardized values of CG and MAS; CG_{it}*LTO_j = multiplication of the standardized values of CG and LTO; EM_{it} = discretionary accruals in absolute values estimated by the Kothari et al. (2005) model; IFRS = International Accounting Standards; INDI_j = individualism score of each country; INDU_j = indulgence score of each country; MAS_j = masculinity score of each country; LTO_j = long-term orientation score of each country; ROA_{it-1} = return on assets; Sig. = model significance; SIZ_{it} = log of total assets; Max VIF = highest variance inflation factor (VIF) value; β = standardized coefficient.

Ordinary least squares (OLS) regression with robust standard errors and sector and year fixed effect controls. *t* statistic in parentheses.

***, **, * = significance at 1, 5, 10%, respectively.

Source: Elaborated by the authors.

The results of the PSM confirm the findings of Table 5 (without the United States and Japan) regarding the moderating effect of individualism and indulgence on the relationship between CG and EM, both for the separate analysis of the coefficient and for the joint analysis (0.0321 : 0.0346; individualism/0.02461 : 0.0428; indulgence). With relation to the other dimensions, divergent results are observed for the interaction between power distance and CG, which was not significant in this analysis, and for the interaction between long-term orientation and CG, which was statistically related to EM.

Of the six hypotheses of this research, the results enable the non-rejection of H_2 and H_6 . H_2 predicted that the capacity of CG to mitigate EM practices would be reduced in countries with characteristics of individualism, which was revealed by the results, which even showed a positive and significant relationship between the topics. Similarly, H_6 predicted that the capacity of CG to mitigate EM practices would be reduced in indulgent countries, which was empirically revealed, with the results showing a positive relationship between CG and EM. The non-rejection of both hypotheses suggests that CG mechanisms are inefficient in mitigating EM in individualistic and indulgent cultural contexts.

According to Hofstede (2011), the cultural tendency for individualism or collectivism is a fundamental dimension when investigating societies and primarily differs where the “I” or “we” are concerned. At the individualistic extreme, societies are focused on privacy, on the “I” as a consciousness, and place more value on tasks rather than relationships. The cultural tendency for indulgence, in turn, characterizes more permissive and tolerant societies that support leisure activities and the idea of enjoying life and having fun. At the indulgent extreme, societies usually value the use of controls and social rules.

Valuing the “I” as a consciousness and the non-propensity to use rules and rigid controls are empirically related in this research to the ineffectiveness of CG mechanisms, which aim to control behaviors (something that is avoided in indulgent societies) and align interests in organizations (something that is challenging in individualistic societies). The ineffectiveness of these controls is what results in the greater EM in individualistic and indulgent contexts.

6. CONCLUSION

It is concluded that the dimensions of national culture can help explain previous results that have revealed the ineffectiveness of CG mechanisms in mitigating opportunistic EM practices. The cultural

With relation to the other dimensions of national culture, indications can be observed that power distance may be an aspect that boosts the negative relationship between CG and EM (Tables 4 and 5), as well as the long-term orientation dimension (Table 6). However, we chose not to confirm the hypotheses regarding the moderating role of these dimensions, given that these relationships were not robustly proven; that is, both in the analysis without the most populous countries (Table 5) and in the analysis using the PSM method (Table 6). Future studies could delve deeper into that analysis.

In general, the results revealed contribute to the literature by showing that the cultural tendencies of individualism and indulgence influence the relationship between CG and EM, which suggests that future studies should consider these cultural aspects in their analyses. Moreover, this research contributes by analyzing the relationship between CG and EM using the cultural influence approach, a theoretical lens that predicts the influence of culture in social sciences.

This research also contributes to the CG theme by using a comprehensive measure as a proxy. This is important, as there are different agency problems, such as between managers and shareholders or between minority and majority shareholders. All these mechanisms are covered using the CG pillar; for this reason, even if in a particular context the agents and principals are different, the metric employed can capture the different mechanisms used to monitor each type of agency relationship.

In practical terms, these results contribute to organizations exposed to individualistic and indulgent cultures by revealing that in these contexts CG mechanisms are likely to be ineffective in minimizing EM, which suggests the organizations should seek solutions and improve their control processes. For investors and shareholders, these findings may be useful in terms of alerting them to the need for greater caution when analyzing these cultural contexts in which CG mechanisms tend to be less effective in achieving their objectives. Shareholders could require the inclusion of more sophisticated CG mechanisms or control the ability of these to align interests and monitor behaviors, given that the cultural tendency instigates ineffectiveness in them.

tendencies of countries, more specifically individualism and indulgence, can instigate a positive relationship between CG mechanisms and EM practices, which means that in such contexts CG mechanisms do not

achieve their objectives of aligning interests and monitoring behaviors to minimize the opportunistic behavior of managers.

It is worth highlighting, however, that the influence of national culture on the relationship between CG and EM is a topic that is still in its infancy, given that the

present research uses analogies to previous concepts and assumes a number of relationships, only two of which were robustly confirmed. For that reason, we suggest new investigations into the topic, which could consider other national culture models and other proxies for accounting information quality.

REFERENCES

- Ali Shah, S. Z., Butt, S. A., & Hassan, A. (2009). Corporate governance and earnings management: An empirical evidence from Pakistani listed companies. *European Journal of Scientific Research*, 26(4), 624-638. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1732510
- Bajra, U., & Cadez, S. (2018). The impact of corporate governance quality on earnings management: Evidence from European companies cross-listed in the U.S. *Australian Accounting Review*, 28(2), 152-166.
- Bao, S. R., & Lewellyn, K. B. (2017). Ownership structure and earnings management in emerging markets – An institutionalized agency perspective. *International Business Review*, 26(5), 828-838.
- Berle, A. A., & Means, G. G. C. (1932). *The modern corporation and private property*. Mac-Millan.
- Beuren, I. M., & Klann, R. C. (2015). Effects of the convergence to International Financial Reporting Standards in earnings management. *International Journal of Finance and Accounting*, 4(1), 8-20.
- Cohen, D. A., & Zarowin, P. (2008). Economic consequences of real and accrual-based earnings management activities. *The Accounting Review*, 83, 758-787.
- Daniel, S. J., Cieslewicz, J. K., & Pourjalali, H. (2012). The impact of national economic culture and country-level institutional environment on corporate governance practices. *Management International Review*, 52(3), 365-394.
- Dawson, J. F. (2014). Moderation in management research: What, why, when, and how. *Journal of Business and Psychology*, 29(1), 1-19.
- Dechow, P. M., & Dichev, I. D. (2002). The quality of accruals and earnings: The role of accrual estimation errors. *The Accounting Review*, 77(S.1), 35-59.
- Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1995). Detecting earnings management. *Accounting Review*, 70(2), 193-225.
- Doupnik, T. S. (2008). Influence of culture on earnings management: A note. *Abacus*, 44(3), 317-340.
- Fields, T. D., Lys, T. Z., & Vicent, L. (2001). Empirical research on accounting choice. *Journal of Accounting and Economics*, 31(1-3), 255-307.
- Filatotchev, I., Jackson, G., & Nakajima, C. (2013). Corporate governance and national institutions: A review and emerging research agenda. *Asia Pacific Journal of Management*, 30(4), 965-986.
- Gray, S. J. (1988). Towards a theory of cultural influence on the development of accounting systems internationally. *Abacus*, 24(1), 1-15.
- Gray, S. J., Kang, T., Lin, Z., & Tang, Q. (2015). Earnings management in Europe post IFRS: Do cultural influences persist? *Management International Review*, 55(6), 827-856.
- Gunny, K. A. (2010). The relation between earnings management using real activities manipulation and future performance: Evidence from meeting earnings benchmarks. *Contemporary Accounting Research*, 27(3), 855-888.
- Haga, J., Huhtamäki, F., & Sundvik, D. (2019). Long-term orientation and earnings management strategies. *Journal of International Accounting Research*, 18(3), 97-119.
- Haga, J., Ittonen, K., Tronnes, P. C., & Wong, L. (2018). Is earnings management sensitive to discount rates? *Journal of Accounting Literature*, 41(1), 75-88.
- Han, S., Kang, T., Salter, S., & Yoo, Y. K. (2010). A cross-country study on the effects of national culture on earnings management. *Journal of International Business Studies*, 41(1), 123-141.
- Healy, P. M., & Wahlen, J. M. (1999). A review of the earnings management literature and its implications for standard setting. *Accounting Horizons*, 13(4), 365-383. <https://doi.org/10.2308/acch.1999.13.4.365>
- Hofstede, G. (1980). Motivation, leadership, and organization: Do American theories apply abroad? *Organizational Dynamics*, 9(1), 42-63.
- Hofstede, G. (1991). *Cultures and organizations: Software of the mind*. McGraw-Hill.
- Hofstede, G. (2011). Dimensionalizing cultures: The Hofstede model in context. *Online Readings in Psychology and Culture*, 2(1), 8.
- Hofstede, G. (August 24, 2018). The 6-D model of national culture [Blog]. Retrieved from <https://geert-hofstede.com>.
- Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). *Cultures and organizations: Software of the mind* (3rd ed.). McGraw-Hill.
- Humphries, S. A., & Whelan, C. (2017). National culture and corporate governance codes. *Corporate Governance: The International Journal of Business in Society*, 17(1), 152-163.
- Hutchinson, M. R., Percy, M., & Erkurtoglu, L. (2008). An investigation of the association between corporate governance, earnings management and the effect of governance reforms. *Accounting Research Journal*, 21(3), 239-262.

- Isidro, H., Nanda, D., & Wysocki, P. D. (2020). On the relation between financial reporting quality and country attributes: Research challenges and opportunities. *The Accounting Review*, 95(3), 279-314.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial economics*, 3(4), 305-360.
- Jiraporn, P., Miller, G. A., Yoon, S. S., & Kim, Y. S. (2008). Is earnings management opportunistic or beneficial? An agency theory perspective. *International Review of Financial Analysis*, 17(3), 622-634. <https://doi.org/10.1016/J.IRFA.2006.10.005>
- Kothari, S. P., Leone, A. J., & Wasley, C. E. (2005). Performance matched discretionary accrual measures. *Journal of Accounting and Economics*, 39(1), 163-197.
- Leuz, C., Nanda, D., & Wysocki, P. D. (2003). Earnings management and investor protection: An international comparison. *Journal of Financial Economics*, 69(3), 505-527. [https://doi.org/10.1016/S0304-405X\(03\)00121-1](https://doi.org/10.1016/S0304-405X(03)00121-1)
- Li, J., & Harrison, J. R. (2008). Corporate governance and national culture: A multi-country study. *Corporate Governance: The International Journal of Business in Society*, 8(5), 607-621.
- Lin, F. C., Lin, Y. C., & Chen, C. S. (2016). Accrual reversals and audit fees: The role of abnormal audit fees. *Asia-Pacific Journal of Accounting & Economics*, 25(1-2), 276-294.
- Matteo, P., & Francesco, P. (2018). Earnings management in developing countries. The case of Brazilian real estate industry. *Academy of Accounting and Financial Studies Journal*, 22(1), 1-12.
- Paredes, A. A. P., & Wheatley, C. (2017). The influence of culture on real earnings management. *International Journal of Emerging Markets*, 12(1), 38-57.
- Peasnell, K. V., Pope, P. F., & Young, S. (2005). Board monitoring and earnings management: Do outside directors influence abnormal accruals? *Journal of Business Finance & Accounting*, 32(7-8), 1311-1346.
- Rahman, R. A., & Ali, F. H. M. (2006). Board, audit committee, culture and earnings management: Malaysian evidence. *Managerial Auditing Journal*, 21(7), 783-804.
- Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of accounting and economics*, 42(3), 335-370.
- Ugrin, J. C., Mason, T. W., & Emley, A. (2017). Culture's consequence: The relationship between income-increasing earnings management and IAS/IFRS adoption across cultures. *Advances in Accounting*, 37, 140-151.
- Waweru, N. M., & Prot, N. P. (2018). Corporate governance compliance and accrual earnings management in Eastern Africa. *Managerial Auditing Journal*, 33(2), 171-191.
- Zang, A. Y. (2012). Evidence on the trade-off between real activities manipulation and accrual-based earnings management. *The Accounting Review*, 87(2), 675-703.