


EFFECT OF COUNTRY GOVERNANCE ON FIRM PERFORMANCE: THE MODERATING ROLE OF CULTURE

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ABSTRACT

This study examines the effect of country-level governance quality, moderated by culture, on firm performance. The sample included data from 2,511 publicly-traded companies from nine countries from 2009 to 2018, totaling 15,981 firm-year observations. The data to estimate firm performance were collected from the Refinitiv database, while metrics for country governance and cultural dimensions were obtained from the World Bank and Hofstede Insights, respectively. Multiple linear regression models were used to analyze the relationship between country-level governance indicators and firm performance, including the moderating role of culture. The main results showed that governance indicators have a positive and statistically significant relationship with the performance of the analyzed firms. In most of the estimated models, culture has shown to have a positive moderating effect on the relationship between country governance and performance. This research provides evidence that the governance environment in which firms operate influences their performance, suggesting that managers' knowledge about the specific organizational environment of regions or countries is vital in the corporate decision-making process.

Keywords: Governance. Country-level. Firm performance.

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1 INTRODUCTION

One can say there is a consensus in the literature regarding the effects of the environment in which the organization is inserted on its activities. This is because, from the contingency theory perspective, the specific environmental context in which the firm is inserted influences management (Gunarathne & Lee, 2021). This influence occurs in such a way that, according to Oliveira et al. (2020), the results of the replication of the same management practice will not be the same if firms operate in different environments due to the particularities resulting from contingency factors, such as institutional governance and culture, elements this research addresses.

The relevance of the environment to organizations can also be understood from the general systems theory. Bertalanffy (1972) argues that firms are subject to external events arising from the environment because they constitute an open system in which the reciprocal exchanges of elements with the environment occur as in a living system. Besides, Aldrich and Pfeffer (1976) highlight the importance of the environment to understand organizational decisions and structures, regardless of the different theoretical perspectives in explaining the environment.

Among the elements that make up the organizational environment, Meinhardt et al. (2018) highlight the regional context, including mentioning that knowledge about the specific organizational environment of regions or countries is of interest to several corporate decisions, such as those involving the internationalization process. The regional context refers to all specific elements of the organizational environment of a given geographic region, such as economic development, level of competitiveness, managerial behavior, and innovation, among others (Meinhardt et al., 2018). Meinhardt et al. (2018) argue that different countries tend to present different levels of uncertainty, with reflections in terms of variation in the elements of the organizational environment (e.g., complexity, dynamism, and munificence).

Despite the regional context's relevance to understanding organizations, the topic is still little explored (Piekkari et al., 2010). When evaluating the economic performance of firms, characteristics such as size (Ibhagui & Olokoyo, 2018; Corvino et al., 2019; Borges Júnior, 2019), indebtedness (Pham & Nguyen, 2020; Pereira et al., 2021), sales growth (Kalil & Benedicto, 2018; Na & Kang, 2019), among others referring to it, are extensively explored. In contrast, the effects arising from regional variables are hardly considered. Even cross-country studies, i.e., those involving analyses in different countries, sometimes do not consider country-specific factors (Gordon et al., 2013).

Previous research, concerned with exploring the effects of governance on firm performance, to a large extent, is devoted to internal aspects of corporate governance, such as gender diversity on the board (Amin et al., 2022), ownership structure (Bhagat & Bolton, 2019), and CEO duality (Arora & Sharma, 2016). Therefore, there is a gap in the literature regarding the study of regional elements, such as governance at the national level, and their impact on the economic performance of firms. Thus, to provide evidence about the effect of governance in this context, moderated by culture, on the performance of firms, this research is guided by the following problem: what is the effect of the governance quality at the national level, moderated by culture, on firm performance? As a general objective, we intend to examine the effect of governance quality at the national level, moderated by culture, on firm performance.

Some factors justify the governance quality as a characteristic to examine the effect of country-specific elements on firm performance. Initially, there is evidence that the governance indicators of countries positively relate to financial development, including the capital market (Sayilir et al., 2018), leading to the assumption that there may also be some influence on firm performance. Another relevant point is that the quality of the country's governance is deeply linked to its systematic risk (Anastasiou et al., 2019). As a result, it is understood that the country's risk is reflected in the risk of the firms that conduct their activities in it, and, therefore, it is conjectured that it may affect the expected return and the market value.

The study of the relationship between the governance quality at the national level, moderated by culture, and the firm performance is motivated by the potential contribution to the literature. Previous relevant research has demonstrated that good governance practices in the country make the environment favorable to business development. For example, La Porta et al. (1998) understand that effective investor protection laws contribute to economic development. Similarly, Demirgüç-Kunt and Maksimovic (1998) have documented that legal and financial systems can restrict companies' ability to grow. Thus, as culture is admittedly an element that shapes how firms act (Hofstede, 1980), it is understood that exploring these variables together constitutes a promising theme, thus justifying the investigation proposed in this research.

In seeking to highlight the existence of a positive relationship between the governance quality of the country and the firm performance, including the moderating effect of culture, it is understood that this research contributes to the literature to emphasize the need to consider the regional context; in this case, the governance of the country and culture, in the evaluation of the firm economic performance. This is especially relevant because researchers in the management areas are increasingly required to develop analyses that include regional aspects (Gil et al., 2013).

2 THEORETICAL FRAMEWORK AND HYPOTHESES PREPARATION

2.1 National governance and performance

The environment where the firm is inserted can be classified into a general environment, which concerns sources of general socio-cultural, political, and economic resources, not being related to a specific sector or a focal company, and organizational, which directly affects the achievement of organizational objectives (Dess & Beard, 1984; Meinhardt et al., 2018). In this study, the characteristics of the general environment are analyzed through indicators of governance quality at the national level and their effects on firm performance.

Meinhardt et al. (2018), in a broad review of the literature on the firm environment, identified studies recommending the measurement of the dimensions of the environment subjectively, based on the perceptions of individuals about the environment where they are inserted and also studies advocating the measurement of the environment objectively, using a database. To that end, the country governance indicators addressed in this research are all based on individuals' perceptions of the environment. These indicators were used due to the robustness and credibility of the source consulted, that is, the World Bank.

Kaufman et al. (1999) define governance as the traditions and institutions by which authority in a country is exercised, including the process by which governments are selected, monitored, and replaced, the ability of government to effectively formulate and implement sound policies, and the respect of citizens and the state for the institutions that govern the economy and social interactions between them.

Some governance quality measures were created based on individuals' perceptions of the governance quality in different countries (Kaufman et al., 1999). Among them are the global governance indicators that classify countries according to six aspects of good governance, namely: voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and corruption control (Thomas, 2010). All these variables measure the quality of a country's institutional environment and, consequently, impact the external environment of firms (Gugler et al., 2013).

Table 1 presents the definitions of the six indicators of governance quality in the country context, according to Kaufmann et al. (2008).

Table 1
Definitions of governance quality indicators

Indicator	Definition
Voice and accountability	Measures perceptions of the extent to which citizens of a given country can participate in selecting their government, as well as freedom of expression, freedom of association, and free media.
Political stability and absence of violence	Measures perceptions of the likelihood of the government being destabilized or overthrown by violent or unconstitutional means, including political violence and terrorism.
Government effectiveness	Measures the quality of public services, the quality of public servants, and the degree of their independence from political pressures, the quality of the formulation and implementation of public policies, and the credibility of the government with such policies.
Regulatory quality	Measures perceptions of the government's ability to formulate and implement sound policies and regulations that enable and promote private sector development.
Rule of Law	Measures perceptions of the extent to which agents trust and comply with society's rules, particularly the quality of contract, police, and enforcement, as well as the likelihood of crime and violence.
Corruption control	Measures perceptions of the extent to which public power is exercised for private gain, including forms of corruption, whether insignificant or large, as well as the capture of the state by elites and private interests.

Source: Adapted from Kaufmann et al. (2008).

In recent years, research has been interested in the role of institutions in determining firm and country performance (Gugler et al., 2013; Sayilir et al., 2018). According to Acemoglu (2003), a country's institutional environment partly determines its economic development, as well as firm's behavior and performance. The state of the business environment, defined more broadly as characteristics of the legal, regulatory, financial, and institutional system, is a determining factor in the firm's performance (Commander & Svejnar, 2011).

According to Commander and Svejnar (2011), the business environment plays an important role in the strength of a given economy through its impact on firm performance. Commander and Svejnar (2011) further point out that bad business environments, usually characterized as those in which, for example, corruption and regulation are high and there is widespread uncertainty regarding taxation, business licensing, or even macroeconomic policy, are widely considered to cause low economic performance. Therefore, in theory, they would harm firm performance.

On the other hand, companies perform better in countries with strong enforcement of property rights, an independent judiciary, strong enforcement of contracts, and others, as institutions with high-quality governance reduce the transaction costs of enforcing contracts, obtaining licenses and authorizations and, more generally, conforming to the laws and regulations of the country (Gugler et al., 2013).

Empirical studies point to this. Mueller and Yurtoglu (2000) tested the occurrence of differences in the performance of companies from 38 countries depending on the type of legal system in each country. The authors found significant differences in firm performance. Firms from countries of English origin, where the legal system is common law, performed better, on average, than those from countries with civil law.

In turn, Gugler et al. (2013) analyzed the determinants of the performance of 23,000 listed and unlisted subsidiaries worldwide from 1994 to 2005. The results indicated that good institutions, measured by global governance indicators, are associated with better performance for the companies' subsidiaries.

Mardnly et al. (2018) investigated the effect of corporate governance on the performance of Syrian companies and combined governance indicators at the company level with the indicator of political stability and absence of governance violence at the national level. The results showed a positive relationship between the indicator of political stability and the absence of violence and the performance of the companies analyzed.

Given the above, there is evidence that the governance indicators of countries are positively related to financial development, including the capital market (Sayilir et al., 2018), which leads to the assumption that there may also be some influence on firm performance (Gugler et al., 2013; Mardnly et al., 2018). Thus, it is suggested that business environments with better indicators of governance quality at the national level have positive effects on firm performance, leading us to the following hypothesis:

H₁: Indicators of governance quality at the national level positively impact firm performance.

2.2 Contingency Theory

According to Terry and Cherns (1973), contingency theory assumes that successful organizations adapt their structure to meet the specific demands of their environment. Therefore, the theory moves away from an ideal organization and instead emphasizes the importance of aligning organizational structure and behavior to the environment (Terry & Cherns, 1976). Organizations with structures congruent to the context where they operate are those most likely to obtain better performance (Terry & Cherns, 1976).

Previous research in accounting has used contingency theory to inform discussions at the managerial level. Gunarathne and Lee (2021) employed contingency theory to understand how the use of environmental management accounting varies according to the development stage of the clean production strategy. This is because, according to arguments by Gunarathne and Lee (2021), contingency theory suggests that the effectiveness of management practices depends on the specific environmental circumstances in which they are applied. Such understanding aligns with Oliveira et al. (2020) when they state that management practices cannot simply be replicated between companies due to the specificities arising from contingency factors.

The functioning of mechanisms related to the firm's governance is also supported by contingency theory. Ghofar and Islam (2015) state that the structure and effectiveness of a company's corporate governance are subject to various factors that can respond to internal and external circumstances. For example, companies can design the governance structure considering environmental and organizational variables such as competition and business strategy. Moreover, Ghofar and Islam (2015) argue that many other elements, such as the development phase, the nature of the sector, and the level of innovation, can affect the effectiveness of corporate governance.

Based on the association between corporate governance and contingency theory discussed by Ghofar and Islam (2015), this research understands that companies can stand out more than others in the governance aspect, with reflections on performance, as they are present in some countries with specific characteristics. As such, as one of the main contingent elements in the context of contingency theory is culture (Sims et al., 2012), the next section of this theoretical foundation addresses culture as a moderator of the relationship between governance at the national level and firm performance.

2.3 Moderating effect of culture on the relationship between governance and firm performance

Based on data analysis on employee attitudes in forty countries, Hofstede (1980) examined how people behave relative to the organizations where they operate. Given the findings, Hofstede (1980) argues that individuals have a mental programming developed since childhood, which is a central component of national cultures and, therefore, affects the perceptions and behaviors of individuals, both inside and outside organizations. Hofstede (1980) presents four dimensions of national culture, as shown in Table 2.

Table 2
Dimensions of national culture exposed by Hofstede (1980)

Dimension	Definition
Power Distance	Measures the extent to which a culture accepts that power in institutions and organizations is unevenly distributed.
Uncertainty avoidance	Measures the lack of tolerance for uncertainty and ambiguity in a culture.
Individualism	Measures the extent to which a culture believes people should care for themselves and remain emotionally independent of groups and organizations.
Masculinity	Measures the extent to which masculine values of assertiveness, money, and attachment to material things prevail in a culture compared to feminine values of care, quality of life, and people.

Source: Adapted from Hofstede (1980).

One should mention several other typologies considered in the culture analysis. For example, in accounting, Gray (1988) proposed a framework to examine the influence of culture on the international development of accounting systems. In this case, dimensions were identified at the level of the accounting subculture, such as professionalism, uniformity, conservatism, and secrecy, which were connected to dimensions of cultural value at the national level. Gray (1988) advocates the framework because environmental factors significantly influence the formation of national financial reporting systems. Hence the importance of culture for analyzing the topic.

Cultural aspects at the national level even affected how Covid-19 was handled worldwide. Yan et al. (2020) showed there is no universal solution to face the pandemic caused by the new coronavirus since each country has specificities in population, institutional structure, and cultural values. Specifically concerning culture, Yan et al. (2020) observed that the interaction between institutions and culture played a relevant role in forming government policies in response to the crisis.

Culture represents a variable that can affect firm performance (Parente et al., 2018). Parente et al. (2018) also highlight that organizational culture must be addressed as a strategic asset by company stakeholders due to its potential to affect performance. Parente et al. (2018) reached this conclusion after investigating the relationship between organizational culture and foreign companies' performance on the NYSE. The research results found that certain cultural typologies are associated with variations in firm performance (Parente et al., 2018).

Also, with data from foreign companies listed on the NYSE, Baldoino and Borba (2015) identified characteristics of contingent liabilities affecting their significance. The main results showed that Brazil is the country that showed the most contingent liabilities. Baldoino and Borba (2015) indicate the cultural factor of Gray's theory to justify the finding. This is because Brazilian companies operate in an institutional environment marked by the complexity of tax rules (Baldoino & Borba, 2015). Thus, the importance of the cultural factor is perceived, which is why we incorporated it into this research according to the following hypothesis:

H₂: Culture positively moderates the relationship between the indicators of governance quality at the national level and firm performance.

3 METHODOLOGICAL PROCEDURES

3.1 Sample

It was based on a population of 4,406 listed companies from nine different American countries, with data from 2009 to 2018. For the sake of study delimitation, the ten American countries with the largest population were selected. However, due to the lack of information available for Canada, Venezuela, and Guatemala, Ecuador and Bolivia (11th and 12th American countries in terms of population, respectively) were included. Other factors that justify the choice of countries were the legal system and stage of economic development in the region of the Americas. This is because the sample includes both the USA, a country whose legal system is common law and with a high level of development, as well as countries emerging from the code law system, such as Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, and Peru.

Regarding the sampling period, 2018 was chosen as the base year with the most recent information available for the countries' governance during data collection. In turn, 2009 was considered the initial period, as the global financial crisis strongly influenced firm performance data from 2007 and 2008. As missing values were verified for some variables, as a way to maintain the number of isonomic observations for all measures considered in the different models, the missing values were excluded.

Thus, the final sample of this study is composed of 2,511 companies listed on the stock exchange, from Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, the United States, Mexico, and Peru, with data for the period from 2009 to 2018, totaling 15,981 company-year observations. Table 3 presents additional information on the definition of the research sample.

Table 3

Sample description

Panel A: Sample Definition											
Database (4406 companies x 10 years)	44,060 firm-year observations										
(-) Observations with missing value	(28,079) firm-year observations										
(=) Final sample	15,981 firm-year observations										
Panel B: Sample observations by country and year											
Country / Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
Argentina	58	58	58	57	57	57	55	54	55	52	561
Bolivia	16	16	13	9	8	10	14	15	15	14	130
Brazil	225	221	218	214	206	197	188	180	169	158	1,976
Chile	133	131	126	121	118	117	116	114	111	109	1,196
Colombia	31	29	26	25	17	14	11	9	8	8	178
Ecuador	3	1	1	1	1	1	1	2	5	0	16
USA	561	578	599	616	619	639	1,586	1,645	1,711	1,843	10,397
Mexico	88	88	85	80	78	76	72	72	70	68	777
Peru	81	80	79	78	76	75	72	70	70	69	750
Total	1,196	1,202	1,205	1,201	1,180	1,186	2,115	2,161	2,214	2,321	15,981
Panel C: Sample observations by sector and year											
Sector / Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
Agro and Fishing	40	39	37	37	34	33	35	34	33	31	353
Food and Beverage	94	93	93	91	88	90	101	100	100	95	945

Trade	78	79	81	80	76	74	121	124	127	127	967
Construction	61	59	59	54	52	51	65	65	64	66	596
Electronics	65	68	69	68	69	70	195	202	203	209	1,218
Electricity	119	118	112	109	108	107	115	112	111	105	1,116
Funds	55	55	56	57	57	57	109	112	116	134	808
Ind. Machinery	44	45	45	46	46	47	88	91	93	95	640
Mining	41	40	40	41	41	41	50	50	50	50	444
Non-met. mining	2	2	3	3	3	3	5	5	5	5	36
Other	195	199	205	208	203	206	462	474	492	526	3,170
Pulp and Paper	13	13	14	14	14	14	19	18	18	19	156
Oil and Gas	67	68	65	66	64	63	98	102	105	107	805
Chemistry	83	81	79	80	79	80	211	218	237	274	1,422
Steelmaking and metallurgy	47	47	47	47	47	47	88	90	89	91	640
Software and Data	31	31	31	32	32	35	81	89	90	101	553
Telecommunications	19	19	20	21	21	21	34	34	36	38	263
Textile	26	27	28	28	28	27	36	36	37	37	310
Transport	66	67	67	65	64	62	79	79	79	79	707
Vehicles and parts	25	26	27	27	27	30	62	63	63	66	416
Finance and Insurance	25	26	27	27	27	28	61	63	66	66	416
Total	1,196	1,202	1,205	1,201	1,180	1,186	2,115	2,161	2,214	2,321	15,981

Source: Research data (2023).

In addition to the countries and period, the sample included 20 specific sectors of activity and a group called “Others”, in which the observations of companies whose field of activity did not fit into any of the specific sector groups were allocated. Among the specific sectors, the ones with the highest number of observations were: Chemistry (1,422); Electronics (1,218); Electricity (1,116); Trade (967), and Food and Beverage (945). On the other hand, the lowest number of observations was verified in the sectors of: Non-metal mining (36), Paper and Pulp (156), Telecommunications (263), Textile (310), and Agro and Fishing (353).

3.2 Definition of variables

To achieve the general objective of examining the relationship between the quality of governance in the country context, moderated by culture, and the economic firm performance, measures for performance were attributed as dependent variables based on profitability and market value. Profitability was measured by return on asset, as recommended by Araújo and Leite Filho (2018). Based on Ousama et al. (2020), the market value was obtained through the natural logarithm of the firm’s market capitalization. Concerning governance quality at the national level, the World Bank’s global governance indicators (2021) were used. The World Bank’s governance indicators range from -2.5 to 2.5, with -2.5 corresponding to the worst possible conditions, while 2.5 suggests the best situation in terms of governance (Mardnly et al., 2018). The moderating effect of culture was estimated from the four dimensions proposed by Hofstede (1980).

Variables that previous research has indicated maintain some significant relationship with the profitability and firm value were also included as a control, such as: firm size (Aggarwal & Padhan, 2017), sales growth rate (Aggarwal & Padhan, 2017), market-to-book ratio (Che et al., 2018), and profitability volatility (Konchitchki et al., 2016). Dummy variable vectors were also inserted for the sector (21 sector groups) and year (10 years, from 2009 to 2018). All study variables are detailed in Table 4.

Table 4
Variable description

Variable	Acronym	Description	Base	Rationale
Performance variables				
Return on Asset	ROA	Ratio between operating profit and total assets.	Refinitiv	Araújo and Leite Filho (2018)
Market value	FMV	Natural logarithm of market capitalization.	Refinitiv	Ousama et al. (2020)
Governance variables at national level				
Voice and accountability	VA	Measures perceptions of the extent to which citizens of a given country can participate in selecting their government, as well as freedom of expression, freedom of association, and free media.	World Bank	Thomas (2010)
Political stability	PVI	Measures perceptions of the likelihood of the government being destabilized or overthrown by violent or unconstitutional means, including political violence and terrorism.	World Bank	Thomas (2010)
Government effectiveness	GE	Measures the quality of public services, the quality of public servants, and the degree of their independence from political pressures, the quality of the formulation and implementation of public policies, and the credibility of the government with such policies.	World Bank	Thomas (2010)
Regulatory quality	RQ	Measures perceptions of the government's ability to formulate and implement sound policies and regulations that enable and promote private sector development.	World Bank	Thomas (2010)
Rule of Law	RL	Measures perceptions of the extent to which agents trust and comply with society's rules, particularly the quality of contract, police, and enforcement, as well as the likelihood of crime and violence.	World Bank	Thomas (2010)
Corruption control	CC	Measures perceptions of the extent to which public power is exercised for private gain, including forms of corruption, whether insignificant or large, as well as the capture of the state by elites and private interests.	World Bank	Thomas (2010)
Culture variables				
Power Distance	PDI	Measures the extent to which a culture accepts that power	Hofstede Insights	Hofstede (1980)

		in institutions and organizations is unevenly distributed.		
Uncertainty avoidance	UAI	Measures the lack of tolerance for uncertainty and ambiguity in a culture.	Hofstede Insights	Hofstede (1980)
Individualism	IDV	Measures the extent to which a culture believes people should care for themselves and remain emotionally independent of groups and organizations.	Hofstede Insights	Hofstede (1980)
Masculinity	MAS	Measures the extent to which masculine values of assertiveness, money, and attachment to material things prevail in a culture compared to feminine values of care, quality of life, and people.	Hofstede Insights	Hofstede (1980)
Control Variables				
Firm size	FSZ	Measured by the natural logarithm of the total asset.	Refinitiv	Aggarwal and Padhan (2017)
Growth rate	GWT	Measured by dividing the current year's sales revenue by the previous year's sales revenue, subtracted from value 1.	Refinitiv	Aggarwal and Padhan (2017)
Market-to-book ratio	MB	Measured by dividing the market value of the firm by its equity value.	Refinitiv	Che et al. (2018)
Volatility of return	PV	Measured from the standard deviation of return on assets in the previous three years.	Refinitiv	Konchitchki et al. (2016)

Source: Prepared by the authors based on the authors (2023).

3.3 Analysis procedures

Descriptive statistics and linear regression models estimated by the ordinary least squares method were used to analyze the variables. The generic econometric model is given by:

$$Performance_{it} = \alpha + \beta_n Governance_{it} + \gamma Control_{it} + \varepsilon_{it}$$

Where $Performance_{it}$ refers to the variables of profitability performance (ROA) and market value (FMV) of firm i in year t ; $Governance_{it}$ refers to the variables of governance at the national level, namely: voice and accountability (VA), political stability and absence of violence (PVI), government effectiveness (GE), regulatory quality (RQ), rule of law (RL), and corruption control (CC) of firm i in year t ; $Control_{it}$ refers to the control variables firm size (FSZ), sales growth rate (GWT), market-to-book ratio (MB), and profitability volatility (PV) of firm i in year t ; α , β and γ are the coefficients; the term of idiosyncratic error is given by ε_{it} .

To examine the moderating effect of culture on the relationship between governance in the country context and firm performance, models were estimated whose independent variable of interest is a moderating variable based on the interaction between country governance metrics and the cultural dimensions of Hofstede (1980). In this case, the generic econometric model is given by:

$$Performance_{it} = \alpha + \beta_n Governance_{it} \times Culture_{it} + \gamma Control_{it} + \varepsilon_{it}$$

Where $Performance_{it}$ refers to the performance variables of profitability (ROA) and market value (FMV) of firm i in year t ; $Governance_{it}$ refers to the governance variables at the country level, namely: voice and accountability (VA), political stability and absence of violence (PVI), governmental effectiveness (GE), regulatory quality (RQ), rule of law (RL), and corruption control (CC) of firm i in year t ; $Culture_{it}$ refers to the dimensions of culture proposed by Hofstede (1980), namely: power distance (PDI), uncertainty avoidance (UAI), individualism (IDV), and masculinity (MAS); $Control_{it}$ refers to the control variables firm size (FSZ), sales growth rate (GWT), market-to-book ratio (MB), and profitability volatility (PV) of firm i in year t ; α , β , and γ are the coefficients; the term of idiosyncratic error is given by ε_{it} .

Although the data were organized in a panel format, the models were estimated using the ordinary least squares method with stacked data. Due to the existence of variables of interest invariant over time, such as the cultural dimensions of Hofstede (1980), estimation by fixed effects becomes impractical. Similarly, as the variables of governance and culture do not change for companies in the same country, the estimation by random effects does not show adherence to the data characteristics.

The models were estimated with robust standard errors to meet the assumptions inherent to the application of ordinary least squares. That is, an estimator less sensitive to violations of the assumptions of homoscedasticity and normality of the residues was used. The variance inflation factor (VIF) was also applied to the models to verify the existence of multicollinearity, and the mean VIF was less than or equal to 1.20 in the estimated models, as indicated in Tables 6 and 7. The winsorize procedure handled outliers at a maximum level of 0.025.

4 RESULTS

This section presents results referring to descriptive statistics, summarized as the mean for the variables broken down by country and hypothesis tests. Hypothesis **H₁** was tested through linear regression models with panel data, through which we seek to examine the effect of governance variables at the country level on firms' performance metrics. In the **H₂** test, the moderating effect of culture was added to the estimated models.

Notably, this research measured performance by profitability (return on asset) and market value (market capitalization). Although these are usual performance metrics, they involve different concepts. Profitability refers to the return generated by the investment made, that is, the wealth the investments in the asset could generate. In contrast, the market value refers to the current market price of the firm's equity, measured in this study by the natural logarithm of the stock price multiplied by the number of stocks in circulation.

Initially, Table 5 presents the means observed for each variable, broken down by country. The last column presents the overall mean of the total 15,981 company-year observations.

Table 5 shows that the companies analyzed had positive overall mean profitability, with a ROA of 0.75. The total mean for the natural logarithm of the market value was 20.72. The companies with the highest mean profitability are in Ecuador, while the lowest mean profitability was verified in Brazil. As for the market value, the highest mean verified comes from the United States and the lowest from Peru. Regarding the indicators of governance quality at the national level, the total mean was positive for all six variables contemplated, namely: voice and accountability (0.87), political stability and absence of violence (0.28), government effectiveness (1.04), regulatory quality (1.01), rule of law (1.03), and corruption control (0.89).

Table 5
Mean of variables broken down by country

	ARG	BOL	BRA	CHI	COL	ECU	USA	MEX	PER	Total
Performance variables										
ROA	0.0840	0.0697	0.0539	0.0554	0.0550	0.2145	0.0781	0.0872	0.1097	0.0753
FMV	18.1533	18.6399	19.4502	19.2412	19.9806	20.2919	21.5156	20.5687	18.0597	20.7220
Governance variables at national level										
VA	0.3867	-0.0280	0.4776	1.0489	-0.0147	-0.0433	1.0902	0.0674	0.1678	0.8711
PVI	-0.0419	-0.5866	-0.1946	-0.0639	-0.1460	-0.5458	0.4954	-0.1700	-0.0268	0.2755
GE	0.1029	-0.2046	0.0546	0.3036	0.0574	-0.2122	1.5193	0.1291	0.1723	1.0347
RQ	0.1787	0.4554	-0.0104	0.4673	0.1498	0.4466	1.4553	0.2567	0.0988	1.0097
RL	0.0933	-0.5410	-0.2076	0.2738	-0.0756	-0.5374	1.5960	0.0310	0.0171	1.0330
CC	0.0856	-0.4024	-0.0966	0.2786	-0.0256	-0.4042	1.3532	0.0371	0.0797	0.8939
Culture variables										
PDI	49.0000	78.0000	69.0000	63.0000	67.0000	78.0000	40.0000	81.0000	64.0000	49.3907
UAI	86.0000	87.0000	76.0000	86.0000	80.0000	67.0000	46.0000	82.0000	87.0000	58.5149
IDV	46.0000	10.0000	38.0000	23.0000	13.0000	8.0000	91.0000	30.0000	16.0000	69.6816
MAS	56.0000	42.0000	49.0000	28.0000	64.0000	63.0000	62.0000	69.0000	42.0000	56.8998
Control Variables										
FSZ	19.0192	18.4875	20.2439	19.6809	20.7627	19.2970	21.4776	20.8327	19.0123	20.9228
GWT	-0.0219	-0.0579	-0.1328	-0.1101	-0.0211	-0.1520	0.0747	-0.0384	-0.1010	0.0157
MB	1.7348	2.5638	3.0260	2.6768	1.4271	5.6595	3.4362	2.9831	2.0588	3.1550
PV	0.0627	0.0280	0.1159	0.0501	0.0810	0.0210	5.2461	0.0471	0.0437	3.4388

Note. ARG represents Argentina; BOL represents Bolivia; BRA represents Brazil; CHI represents Chile; COL represents Colombia; ECU represents Ecuador; USA represents the United States; MEX represents Mexico; PER represents Peru; ROA represents the return on assets; FMV represents market value; VA represents voice and accountability; PVI represents political stability and absence of violence; GE represents governmental effectiveness; RQ represents regulatory quality; RL represents rule of law; CC represents corruption control; PDI represents power distance; UAI represents uncertainty avoidance; IDV represents individualism; MAS represents masculinity; FSZ represents firm size; GWT represents sales growth rate; MB represents market-to-book ratio; PV represents profitability volatility.

Source: Research data (2023).

As country governance indicators, estimated by the World Bank, range from -2.5 to 2.5 (Mardnly et al., 2018), the results suggest that, on average, companies in the sample are in environments with good institutional governance quality. However, it is worth mentioning that when means are observed by country, certain companies appear in places of low institutional governance in some aspects. Similarly, a significant difference can be seen for some dimensions between countries when observing the means for cultural variables. For example, the individualism dimension has a significantly higher mean in the United States than in Latin American countries.

As for the variables for the firms' characteristics, the overall mean for the natural logarithm of the total asset, used as a proxy for size, was 20.92. In turn, the overall mean of the observed sales growth rate was 1.57%. The firms in the sample, in total, had a market value higher than the book value, as there was a positive mean of 3.16 of the market-to-book ratio. Finally, despite the positive profitability, results indicated an overall mean for profitability volatility of 3.44.

To test the research hypotheses, linear regression models were estimated. The models in Table 6 indicate the effect of institutional governance at the national level on firms' profitability.

Table 6
Effect of country governance on firm profitability

ROA	1	2	3	4	5	6
Governance variables at the national level						
VA	0.0065**					
PVI		0.0175***				
GE			0.0113***			
RQ				0.0078***		
RL					0.0096***	
CC						0.0079***
Control Variables						
FSZ	0.0181***	0.0174***	0.0169***	0.0175***	0.0169***	0.0175***
GWT	0.0159***	0.0155***	0.0154***	0.0156***	0.0154***	0.0156***
MB	0.0043***	0.0044***	0.0043***	0.0043***	0.0044***	0.0043***
PV	-0.0081***	-0.0083***	-0.0084***	-0.0083***	-0.0084***	-0.0083***
Constant	-0.3215***	-0.3006***	-0.2968***	-0.3086***	-0.2950***	-0.3059***
Sector	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes
Observ.	15,981	15,981	15,981	15,981	15,981	15,981
R ²	0.3142	0.3157	0.3160	0.3152	0.3161	0.3152
Average VIF	1.16	1.13	1.20	1.15	1.18	1.16

Note. ROA represents return on asset; VA represents voice and accountability; PVI represents political stability and absence of violence; GE represents governmental effectiveness; RQ represents regulatory quality; RL represents rule of law; CC represents corruption control; FSZ represents firm size; GWT represents sales growth rate; MB represents market-to-book ratio; PV represents profitability volatility; ***, **, and * represent statistical significance at levels of 1%, 5%, and 10%, respectively.

Source: Research data (2023).

Table 6 shows that all six national governance quality measures maintained a positive and statistically significant relationship with the firm's profitability. The level of statistical significance for the positive relationship was 1% for all governance variables except voice and accountability (VA), whose percentage was 5%. From this, one can say that companies from countries with higher indicators of voice and accountability (VA), political stability and absence of violence (PVI), government effectiveness (GE), regulatory quality (RQ), rule of law (RL), and corruption control (CC) tend to present higher profitability (ROA). These findings therefore support the **H₁** hypothesis.

For the control variables, which comprised measures related to firms' characteristics, there was a positive and significant relationship with profitability for size (FSZ), sales growth rate (GWT), and market-to-book ratio (MB). On the other hand, profitability volatility (PV) showed an inverse relationship with profitability (ROA). It is understood from this that the largest companies, with high sales and market-to-book ratios and with low volatility of return on assets over time, are those that, on average, have the highest profitability.

The additional tests performed for **H₁** to examine the relationship between country governance indicators and the firm's market value are shown in Table 7.

Table 7
Effect of country governance on firm value

FMV	1	2	3	4	5	6
Governance variables at the national level						
VA	0.4440***					
PVI		0.2228***				
GE			0.2590***			
RQ				0.2606***		
RL					0.2199***	
CC						0.2088***
Control Variables						
FSZ	0.9900***	1.0038***	0.9822***	0.9862***	0.9824***	0.9911***
GWT	0.0579**	0.0602***	0.0521**	0.0515**	0.0514**	0.0543***
MB	0.1527***	0.1533***	0.1526***	0.1527***	0.1531***	0.1530***
PV	0.0042**	0.0080***	0.0023*	0.0030**	0.0025*	0.0045***
Constant	-1.6497***	-1.6112***	-1.2681***	-1.3609***	-1.2240***	-1.4103***
Sector	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes
Observ.	15,981	15,981	15,981	15,981	15,981	15,981
R ²	0.8687	0.8668	0.8694	0.8702	0.8697	0.8685
Average VIF	1.16	1.13	1.20	1.15	1.18	1.16

Note. FMV represents market value; VA represents voice and accountability; PVI represents political stability and absence of violence; GE represents governmental effectiveness; RQ represents regulatory quality; RL represents rule of law; CC represents corruption control; FSZ represents firm size; GWT represents sales growth rate; MB represents market-to-book ratio; PV represents profitability volatility; ***, **, and * represent statistical significance at levels of 1%, 5%, and 10%, respectively.

Source: Research data (2023).

It is observed in Table 7 that the results in the models whose dependent variable was the market value were equivalent to the findings of the profitability models (Table 6). Thus, all the governance measures of the countries were positively related to market value, with a statistical significance level of 1%, thus reinforcing the confirmation of hypothesis **H₁**. As for the characteristics of the firms in Table 7, only the profitability volatility presented a result different from that observed in the models indicated in Table 6 since its relationship with the market value was positive.

The results evidenced in this research corroborate the predominant arguments in the literature on the topic that the environment where firms are inserted, including institutional governance indicators, affects their performance (Commander & Svejnar, 2011; Gugler et al., 2013; Mardnly et al., 2018). It is also concluded that countries with high governance indicators have better conditions for companies with activities developed on-site to obtain superior profitability and market value performance.

Findings that indicate a significant effect of country-level governance indicators on firm performance may have implications for different audiences, such as governments and companies. Based on the assumption that good governance practices in the country improve its general business environment, it is recommended, therefore, that governments invest in aspects such as regulatory quality, corruption control, political stability, and other metrics addressed in this study to create conditions favorable to foreign investment and general competitiveness of national companies.

In turn, companies can benefit from understanding the relationship between governance at the national level and performance in corporate decisions regarding their locations. This is because, according to the results presented, firms with operations in countries whose governance practices are favorable can develop a competitive advantage over others since good governance practices can reduce transaction costs, improve the execution of contracts and increase the protection of property rights (La Porta et al., 1998, Demirgüç-Kunt & Maksimovic, 1998).

To examine the moderating effect of culture on the relationship between governance at the national level and firm performance and subsidize the tests related to **H₂**, the models presented above were re-evaluated with an interaction between the variables used as metrics for country governance and the variables for the cultural dimensions of Hofstede (1980). There are six national governance variables, four cultural dimensions, and two performance measures, so the number of estimated models was forty-eight (6 x 4 x 2 = 48).

Given the impossibility of presenting tables for the forty-eight models, Table 8 shows the estimated coefficients for the interaction variable between governance and culture in each of them. Notably, in all models, control variables were included for firm characteristics and dummy vectors to identify sectors and the year in accordance with the tests indicated in Tables 6 and 7.

Table 8

Moderating effect of culture on the relationship between governance at the national level and firm performance

Panel A: Moderating effect of culture on the relationship between country governance and profitability				
ROA	PDI	UAI	IDV	MAS
Governance variables at the national level				
VA	-0.00031***	-0.00019***	0.00027***	0.00034***
PVI	0.00024***	0.00018***	0.00043***	0.00037***
GE	0.00016***	0.00011***	0.00019***	0.00023***
RQ	0.00008***	0.00005**	0.00018***	0.00018***
RL	0.00014***	0.00010***	0.00018***	0.00020***
CC	0.00010***	0.00006***	0.00018***	0.00018***
Panel B: moderating effect of culture on the relationship between country governance and firm value				
FMV	PDI	UAI	IDV	MAS
Governance variables at the national level				
VA	0.00486***	0.00329***	0.00580***	0.00866***
PVI	0.00218***	0.00168***	0.00732***	0.00515***
GE	0.00431***	0.00331***	0.00373***	0.00479***
RQ	0.00418***	0.00319***	0.00395***	0.00500***
RL	0.00354***	0.00278***	0.00349***	0.00417***
CC	0.00300***	0.00227***	0.00385***	0.00419***

Note. The models indicated in Tables 6 and 7 were re-evaluated with the independent variable of interest moderated by each of the four variables for culture. All models were estimated with control variables for size, sales growth rate, market-to-book ratio, profitability volatility, and dummy vector for sector and year. Table 8 presents each model's estimated coefficients for the interaction variable between the country's governance and cultural context. ROA represents return on asset; FMV represents market value; VA represents voice and accountability; PVI represents political stability and absence of violence; GE represents governmental effectiveness; RQ represents regulatory quality; RL represents the rule of law; CC represents corruption control; PDI represents power distance; UAI represents uncertainty avoidance; IDV represents individualism; MAS represents masculinity; ***, **, and * represent statistical significance at levels of 1%, 5%, and 10%, respectively.

Source: Research data (2023).

The results shown in Table 8 suggest that culture has a positive moderating effect on the relationship between governance at the national level and firm performance, in line with hypothesis **H₂**. This is because the estimated models indicated positive and statistically significant coefficients at the level of 1% for the variables of interest, except in two profitability models with the variable of interaction between voice and accountability (VA) and the cultural dimensions for power distance (PDI) and uncertainty avoidance (UAI) since in them the relationship was negative.

The positive relationship between the indicators at the national level, moderated by the cultural dimensions, and firm performance, identified in forty-six of the forty-eight estimated models, is supported in the literature. Based on contingency theory, it is understood that the cultural factor enables some countries to adjust better to governance indicators than others, with positive reflections on firm performance. From the perspective of contingency theory, Gunarathne and Lee (2021) and Oliveira et al. (2020) highlight that organizational effectiveness depends on environmental circumstances. Specifically concerning the culture-contingent factor, Parente et al. (2018) demonstrated the potential of culture to explain variations in firm performance and, therefore, constitute a source of competitive advantage.

The divergent results expected for the interaction between voice and accountability (VA) and the cultural dimensions for power distance (PDI) and uncertainty avoidance (UAI) with a negative effect on profitability may result from the specificities of these two culture elements. For example, intolerance of uncertainty and collusion with the unequal distribution of power in organizations and institutions can compromise aspects involving the voice and accountability (VA) indicator, such as government selection, freedom of expression, freedom of association, and free media, with negative reflections on the operational performance of firms and, consequently, on the measure of return on asset (ROA).

5 CONCLUSION

This study aimed to examine the effect of governance quality at the national level, moderated by culture, on firm performance. The sample included 2,511 companies, with stocks traded on stock exchanges from Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, the United States, Mexico, and Peru, with data from 2009 to 2018, totaling 15,981 company-year observations. The research hypotheses were tested using multiple linear regression models, estimated using the ordinary least squares method.

As an innovation proposed in this work, the combination of regional elements was conducted, namely, indicators of governance quality at the national level (voice and accountability, political stability and absence of violence, governmental effectiveness, regulatory quality, rule of law, and corruption control) and the cultural dimensions proposed by Hofstede (1980) (power distance, uncertainty avoidance, individualism, and masculinity), in the investigation of firm performance, which is based on profitability and market value. Thus, this study differs from the others in incorporating regionality, institutional governance, and culture in analyzing factors determining firm performance.

The main results showed that all governance indicators at the national level are positively and statistically related to the performance of the analyzed firms. Likewise, in most estimated models, culture has been shown to moderate the relationship between country governance and corporate performance positively. These findings suggest that companies in environments with good institutional governance conditions are prone to better performance. A possible justification for this is that bad business environments, such as high corruption and regulation, widespread uncertainty regarding taxation, business licensing, or even macroeconomic policy, compromise the economic performance and, consequently, firm performance.

As a research limitation, one can highlight that governance quality measures are general for a given country, and it is impossible to capture the effect of governance quality relative to the

different regions where firms are inserted in the intra-country context. For future research, it is proposed to study the relationship between firm performance and the environmental factors of countries based on objective measures of the environment to deepen the results presented by this study.

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