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The effects of national culture on corporate social responsibility disclosure: a cross-country comparison

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Abstract

This paper presents a cross-country analysis of the influence of national culture on corporate social responsibility (CSR) disclosure. We analyse the relationship between the Hofstede's cultural dimensions and the sustainability disclosure with the Gross Domestic Product (GDP) per capita of 44 countries, using panel data with information based on the Global Reporting Initiative (GRI) guidelines. The governance effectiveness and the foreign direct investment are also included in the analysis. The results show that in countries with higher GDP per capita, the CSR disclosure is negatively related to individualism and masculinity, and positively related to uncertainty avoidance and indulgence. When focusing in countries with lower GDP per capita, the results suggest that CSR disclosure is negatively related to power distance, and positively related to uncertainty avoidance. Moreover, five of the six Hofstede's cultural dimensions negatively affect sustainability disclosure in countries with middle GDP per capita.

Keywords

Corporate social responsibility; national culture; sustainability report; institutional factors

Jel Classification

M14; M21; C23

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I. Introduction

The commitment to corporate social responsibility (CSR) has transparency as a basic principle, so the sustainability reports made using accepted standards are an important instrument of measurement, communication and accountability for stakeholders. The most exhaustive framework to CSR reporting is the Global Reporting Initiative (GRI) guidelines (Daizy and Das 2014). The GRI is an internationally standardised way to disclosure sustainability information and organisations have adopted it as an explicit framework to CSR reporting.

In connection with the growth of CSR reports, an area of economic research has focused on examining the factors that motivate the sustainability disclosure. Most of the studies have been carried out at a firm level, and only a few papers on CSR disclosure analyse the external factors that affect firms. The corporate characteristics and internal organisational factors such as size, industry, and composition of the board of directors have an influence on CSR reporting, but a number of external factors such as culture, political environment and the economic context also influence CSR disclosure (Adams 2002). In this context, the institutional theory allows us to understand the differences in CSR disclosures across countries with different culture, governance and economic factors.

The motivation of this article is to understand how national cultural dimensions affect CSR disclosure. When we consider the size of the country and compare the GRI reports per million inhabitants, we observe that developed countries like Germany and United States have fewer GRI reports than other countries with similar levels of wealth, such as Canada. It is known that Germany and United States are countries with listed domestic companies with large market capitalization. Therefore, companies' internal factors and the country's wealth are not the only factors that influence CSR disclosure. The institutional factors in each country also have an influence on sustainability information disclosure, and among these institutional factors, we have focused in the countries' cultural variables.

This article analyses the influence of the six cultural variables of Hofstede, Hofstede, and Minkov (2010) on CSR practices at the country level. The six cultural dimensions analysed are power distance, individualism, masculinity, uncertainty avoidance, long-term orientation, and indulgence. We have also included as control variables in our regressions government effectiveness, as an indicator of good national governance, and foreign direct investment, as an indicator of the economic context of the countries. We have classified the samples of countries into three categories according to their level of Gross Domestic Product per capita (GDPPC) and our results show that the effects of national cultural variables on CSR disclosure are in turn affected by the countries' level of GDPPC.

The sample used in our analysis includes 9,869 GRI reports from 44 countries during the period 2007-2012. The dependent variable is the GRI reports per million of inhabitants. We

have used a balanced panel data and estimated the models with Feasible Generalized Least Squares (FGLS) and Panel-Corrected Standard Errors (PCSE).

The main contributions of this article are the following. Most of the research on disclosure of information on CSR has focused on internal factors of organisations and only a few works have incorporated external institutional factors. The studies on the effects of institutional factors on CSR have used microeconomic data samples with different number of companies in each country. However, in contrast to previous research, a first contribution of this paper is that the study is realised at the macroeconomic level and every country has the same weight in the sample.

The previous research on the effects of cultural factors on CSR has not analysed the effects of differences in the wealth of countries. This paper focuses on the analysis of the effects of these differences and confirms that the importance of cultural variables on CSR reporting is strongly influenced by the level of GDPPC of the countries. For example, the results indicate that the national culture has more influence on CSR disclosure in countries with middle GDPPC compared to countries with higher and lower GDPPC. A second contribution of this paper is that it helps explain the contradictory evidence that other works present about the influence of the cultural dimensions on CSR disclosure.

The effects of the cultural dimensions more recently incorporated by Hofstede, Hofstede, and Minkov (2010), such as long-term orientation and indulgence, have been scarcely analysed in the literature on CSR. A third contribution of this article is that it presents evidence on the effects of these two cultural variables and shows that the effect of the indulgence on CSR reporting in countries with higher GDPPC level is the opposite of that in countries with middle GDPPC level.

This article has used the level of GDPPC of the countries in the empirical analysis because studies traditionally assume that economic development promotes CSR practices. The idea is that developed countries have large multinational corporations that are generally more concerned about their social and environmental policies because they have high political visibility. Some studies show that a high level of GDPPC in a country leads to a high level of CSR disclosure (Baughn and McIntosh 2007; Li et al. 2010). Thus, this article has used the level of GDPPC of the countries to analyse the different influence of Hofstede's cultural variables on CSR disclosure.

The remainder of the article is organised as follows: Section II discusses the literature and presents our hypotheses, Section III describes the data and presents the variables used in the study, Section IV presents the estimations and their results and Section V presents the conclusions and implications.

II. Literature review and hypotheses

The new institutionalism constitutes the framework to explain the differences among countries on CSR disclosure practices. This theoretical approach turns the attention to institutional environments and argues that organisations in the same environment will become structurally similar as they respond to similar pressures, that is, to isomorphic pressures

(DiMaggio and Powell 1983). The economic conditions affect the CSR activities of organisations, but institutional conditions also affect the probability that organisations behave in socially responsible ways. Therefore, the institutions or rules of the game in a society vary across countries and have an influence on CSR disclosure (Campbell 2006). Further, the new institutionalism distinguishes between informal and formal institutions (North 1990). Formal institutions are rules such as laws, constitutions and regulations, whereas informal institutions are socially shared rules such as culture, religion and customs.

The new institutionalism has developed two approaches to analyse CSR disclosure decisions: the legitimacy theory and the stakeholder theory. The legitimacy theory considers that there is an implicit contract between organisations and society, by which organisations seek legitimacy and use sustainability reporting as a behaviour strategy to report real changes, to change stakeholders' perceptions and to divert attention from other issues (Guthrie and Parker 1990; Lindblom 1994). Therefore, the level of CSR disclosure depends on institutional pressures because organisations use the CSR reports as parts of their legitimising strategies (Deegan 2002). The stakeholder theory (Freeman 1984) emphasises the importance of the relationships between companies and shareholders, creditors, employees, customers, suppliers and governments, that is, with those agents who have an interest in the company. This approach predicts that organisations decide to disclose information in order to meet the information demands of stakeholders. Therefore, CSR disclosure is a part of the dialogue between organisations and their stakeholders (Roberts 1992).

As Deegan (2002) has argued, both theories are overlapping and perceive CSR disclosure as a strategy tool for management. The legitimacy theory focuses on strategies that managers can choose to maintain their legitimacy, in such a way that the choice of what information to reveal is related to attempts to win, maintain and repair the legitimacy. The stakeholder theory focuses on the direct effect of stakeholders on the managers' decisions about the activities of their companies.

On the one hand, the literature results enhance the explanatory power of the stakeholder theory approach to analyse corporate social actions when the models are designed to predict or to explain CSR disclosure by providing insights into the corporate internal factors. On the other one hand, the existing literature shows that the theory of legitimacy offers a powerful mechanism for understanding why companies are likely to disclose more CSR information for legitimization purposes when models examine external factors to the organisations in an institutional context. This article presents a cross-country analysis of the effects of national culture on CSR practices and, therefore, the models adopt the postulates of the theory of legitimation since they allow us to understand the differences in the levels of CSR disclosure between countries better.

In this article, we considered that the analysis of the relationship between CSR and institutions is fundamental in order to understand the adoption of CSR disclosure practices among countries, and we have focused on cultural factors when analysing the institutional factors that influence the CSR disclosure. Hofstede (1980) characterised the national culture with four dimensions, which have been widely used in academic research: (1) power distance, (2) individualism versus collectivism, (3) masculinity versus femininity and (4) uncertainty

avoidance. Subsequently, two dimensions were added, which have been less used than the previous four: (5) long-term versus short-term orientation (Hofstede 2001) and (6) indulgence versus restraint (Hofstede, Hofstede, and Minkov 2010). Therefore, we analyse the national culture of the countries with these six cultural dimensions.

Power distance

Power distance is the extent to which the less powerful members of institutions and organisations (that is, the lower ranking individuals of a society) within a country expect and accept that power is distributed unequally. Countries with high power distance tolerate more obedience, inequality and hierarchy (Hofstede, Hofstede, and Minkov 2010). The individuals in societies with high values of distance to power, such as many countries in Asia and Latin America, recognise their place and accept the existence of formal hierarchies. Conversely, in countries with low values of power distance, such as Austria, Israel and New Zealand, individuals assume that people are equal and they expect democratic relations. The values of the index for the power distance range between 11 and 104 (visit <https://geert-hofstede.com> for information on the values of Hofstede's indexes).

Literature usually presents evidence of a negative association between CSR disclosure and power distance. Ringov and Zollo (2007), Peng, Dashdeleg, and Chih (2014), Thanetsunthorn (2015) and Halkos and Skouloudis (2017) show that companies in higher power distance countries exhibit lower levels of social and environmental performance. Park, Russell, and Lee (2007), Vachon (2010) and Disli, Ng, and Askari (2016) find a significant and negative relationship between power distance and environmental practices. However, Ho, Wang, and Vitell (2012) show a positive coefficient between power distance and CSR, contrary to their predictions. For the sustainability disclosure, Gallego-Álvarez and Ortas (2016) and Garcia-Sanchez, Cuadrado-Ballesteros, and Frias-Aceituno (2016) find that companies from countries with lower power distance have higher CSR disclosure practices. Thus, our hypothesis is the following:

Hypothesis 1: The level of power distance in a country is negatively related to corporate social responsibility disclosure.

Individualism

Individualism is the degree to which people in a society are integrated into groups. In individualistic societies, individuals are expected to take care of only themselves and their immediate families, so a high degree of individualism indicates that individual objectives prevail over collective interests (Hofstede, Hofstede, and Minkov 2010). In countries with high individualism, such as United States, Australia and United Kingdom, people have an orientation toward oneself. However, people in countries with lower individualism (collectivist countries, as in Latin America) have a strong desire to belong to groups. The values of the index for the individualism range between 6 and 91.

Research on CSR predicts a negative association between CSR disclosure and individualism because it is expected that collectivist cultures will be more sensitive to the

impact of business on society and to the stakeholders' interests (Ho, Wang, and Vitell 2012; Thanetsunthorn 2015; Halkos and Skouloudis 2017). However, there are studies that predict a positive correlation between CSR disclosure and individualism because it is expected that collectivist cultures will favour some groups and disadvantage others, giving rise to corruption and ethical insensitivity (Disli, Ng, and Askari 2016; Vachon 2010). Finally, the studies of Ringov and Zollo (2007), Park, Russell, and Lee (2007) and Gallego-Álvarez and Ortas (2016) suggest that individualism does not have a significant impact on sustainability. Although the above studies show opposite results, we argue that the stakeholders' pressures affect CSR disclosure, and that these pressures are greater in more collectivist societies. Therefore, we hypothesize:

Hypothesis 2: The level of individualism in a country is negatively related to corporate social responsibility disclosure.

Masculinity

Masculinity (versus femininity) is the degree to which a society differentiates and emphasises traditional roles between genders. A high degree of masculinity means that the society value more male characteristics such as assertiveness, competitiveness, success and status (Hofstede, Hofstede, and Minkov 2010). Traditionally, the countries with a high masculinity value include the Slovak Republic, Japan and Hungary. The values of the index for the masculinity range between 5 and 104.

Literature confirms that masculinity dimension has a negative influence on CSR disclosure. Williams (1999) considered that there were only two relevant cultural dimensions in sustainability information: masculinity and uncertainty aversion. His study found that firms that were operating in countries with a higher degree of masculinity provided lower levels of environmental and social information. Ringov and Zollo (2007), Orij (2010), Peng, Dashdeleg, and Chih (2014), Thanetsunthorn (2015), Disli, Ng, and Askari (2016) and Halkos and Skouloudis (2017) find that the countries with the highest degree of masculinity have lower levels of social and environmental performance. The study of Gallego-Álvarez and Ortas (2016) shows a negative association between masculinity and sustainability disclosure. Therefore, we state the following hypothesis:

Hypothesis 3: The level of masculinity in a country is negatively related to corporate social responsibility disclosure.

Uncertainty avoidance

Uncertainty avoidance measures the level to which the members of a society accept ambiguous situations and tolerate uncertainty. The people of countries with a national culture that has a high level of uncertainty avoidance feel uncomfortable with unstructured situations and attempt to reduce or manage uncertainty through rules, regulations, laws, and controls (Hofstede, Hofstede, and Minkov 2010). That is, in countries with high uncertainty avoidance, such as Greece, Portugal and Belgium, people tend to avoid risks and unexpected situations; the security is an important element. On the other side, in countries with low uncertainty avoidance, such as Singapore, Denmark, and Hong Kong, people are comfortable

with ambiguity and possible changes are not important because they maintain a relaxed attitude. The values of the index for the uncertainty avoidance range between 8 and 112.

Predictions and evidence on the relationship between uncertainty avoidance and CSR disclosure are contradictory. Williams (1999) found that uncertainty avoidance had a negative influence on CSR disclosure of companies in the Asia-Pacific region. The author argued that management might be more inclined to limiting the voluntary information in situations where uncertainty is high since the cost may exceed the benefit. In the same way, the studies of Vachon (2010), Garcia-Sanchez, Cuadrado-Ballesteros, and Frias-Aceituno (2016) and Halkos and Skouloudis (2017) find evidence of a negative effect of uncertainty avoidance on CSR disclosure.

However, some studies argue in the opposite direction. Thus, Scholtens and Dam (2007) find that uncertainty avoidance is positively associated with the ethical policies of companies in industrialised countries, which will result in more attention to CSR disclosure. Disli, Ng, and Askari (2016) argue that cultures that avoid uncertainty tend to maintain or even improve environmental quality. Similarly, the studies of Ho, Wang, and Vitell (2012), Peng, Dashdeleg, and Chih (2014) and Thanetsunthorn (2015) present evidence of a positive impact of uncertainty avoidance on CSR disclosure. This study is in line with the approaches that predict a positive relationship between uncertainty avoidance and CSR disclosure, because the stakeholders' pressures influence CSR practices in countries with a high uncertainty avoidance index. Thus, we hypothesize:

Hypothesis 4: The level of uncertainty avoidance in a country is positively related to corporate social responsibility disclosure.

Long-term orientation

The long-term orientation dimension measures the level to which members of a society orient their efforts towards the future versus the past and the present. A high score of a country in long-term orientation means that its society focuses on future goals (Hofstede, Hofstede, and Minkov 2010). For example, Korea South, Taiwan and Japan have high values for the long-term orientation, and their societies encourage perseverance, effort, and tenacity in goals and their individuals do not expect immediate gratification. Similarly, many societies in Latin America and Africa have low values for the long-term orientation. The values of the index for the long-term orientation range between 0 and 100.

Long-term oriented cultures give more weight to the future effects of their decisions and prefer to make sacrifices now for future benefits (Disli, Ng, and Askari 2016). Orij (2010) predicted a positive relationship between long-term orientation and CSR disclosure, but his study did not present conclusive evidence. However, the empirical results obtained by Disli, Ng, and Askari (2016), Garcia-Sanchez, Cuadrado-Ballesteros, and Frias-Aceituno (2016) and Halkos and Skouloudis (2017) reveal that CSR practices are positively related to long-term orientation. For this reason, we conclude that:

Hypothesis 5: The level of long-term orientation in a country is positively related to corporate social responsibility disclosure.

Indulgence

Indulgence is the degree to which a society allows the gratification of natural human desires related to enjoying life and having fun. Indulgent societies give more importance to freedom of speech and personal life control (Hofstede, Hofstede, and Minko 2010). Countries with higher values in indulgence (such as Venezuela, Mexico and Puerto Rico) have a tendency towards optimism, and tend to give more importance to leisure and to spending money. On the other side, individuals in societies with lower indulgence, such as in most of the post-communist countries, try to control their desires and impulses. The values of the index for the indulgence range between 0 and 100.

Until now, few studies empirically analyze the effects of this sixth cultural dimension. Gallego-Álvarez and Ortas (2016) predict a negative relationship between indulgence and CSR practices. Disli, Ng, and Askari (2016) argue that indulgent societies are characterized by a more wasteful and extravagant lifestyle which, in turn, increases environmental pollution. In contrast, Halkos and Skouloudis (2017) find a positive relationship between indulgence and CSR disclosure. According to the theoretical approach, we hypothesize:

Hypothesis 6: The level of indulgence in a country is negatively related to corporate social responsibility disclosure.

In addition to the previous articles, some studies show that a high level of GDPPC in a country leads to a high level of CSR disclosure. Thus, Li et al. (2010) confirm that GDPPC explains the intensity in CSR communications. Fernandez-Feijoo, Romero, and Ruiz-Blanco (2014) suggest that GDPPC has a positive association with the level of transparency in CSR reporting. There are also studies that show the relationship between some national cultural characteristics and the countries' wealth. Thus, Hofstede (1983) noted that GDPPC is negatively related with individualism. Franke, Hofstede and Bond (2012) suggest that people in richer nations tend to accept less inequality and present lower power distance, because they have higher individualism. Tang and Koveos (2008) argue that GDPPC has a curvilinear relationship with individualism, long-term orientation and power distance.

III. Sample and data

In order to test our different hypotheses, we use the GRI reports elaborated in the frameworks of G3 and G3.1 guidelines covering the period 2007-2012. Launched in 2006, the G3 Guidelines feature sustainability disclosures that organisations can adopt flexibly and incrementally, enabling them to be transparent about their performance in key sustainability areas. The GRI G3 does not include overall indicators and specific guidance on well-being, although it does cover indicators on social and human rights, labor practices and environmental protection that can promote well-being. In 2011, GRI launched the G3.1, which provides more guidance on some aspects of the social dimension such as human rights, community impacts and gender issues. For the full details, the reader can visit <https://www.globalreporting.org/resourcelibrary/G3.1-Comparison-Sheet.pdf>. We have selected all countries whose organisations have submitted at least one GRI G3/G3.1 report in each analysed year, and which were quantified in every one of the six cultural dimensions of

Hofstede's model. Thus, our sample includes 9,869 GRI reports for 44 countries in the period 2007-2012.

[Table 1 near here]

Table 1 presents the number of GRI reports in the 44 countries analysed, the percentage of GRI reports, and the average GDPPC for the period 2007-2012 in current US\$. The GDPPC data comes from the World Bank database (<https://data.worldbank.org>). Countries with the highest percentage of GRI reports out of the total are United States (10.41%), Spain (9.70%) and Brazil (7.22%). Conversely, countries with the lowest weight in the percentage distribution of GRI reports are Venezuela (0.08%), Czech Republic (0.11%) and Romania (0.15%). The countries with the highest average GDPPC are Luxembourg (106,392.2 US\$), Norway (91,968.7 US\$) and Switzerland (75,098.3 US\$). The countries with the lowest average GDPPC are India (1,251.1 US\$), Philippines (2,094.7 US\$) and Indonesia (2,794.1 US\$).

Dependent, independent and control variables

The dependent variable, GRI, measures the GRI reports per million inhabitants by country and year. We collected the GRI information from the GRI database (<https://database.globalreporting.org/>) and the dates of population from the World Bank. Our models include the six Hofstede's cultural dimensions as independent variables: power distance (PDI), individualism (IDV), masculinity (MAS), uncertainty avoidance (UAI), long-term orientation (LTO) and indulgence (IND). The scores of these six cultural variables remain constant over time, and come from <https://geert-hofstede.com>.

In addition, we include two control variables: government effectiveness (GOVEFF), which reflects the quality of domestic institutions, and foreign direct investment net outflows (FDI) as a GDP percentage that measures the economy's degree of openness. The values of control variables come from the World Bank database (<https://data.worldbank.org>). This study includes only these two control variables because we have few observations when the total sample of countries is sub-divided into three samples. However, the variables GOVEFF and FDI are two of the institutional variables that have a greater association with CSR practices of countries.

Kaufmann, Kraay, and Mastruzzi (2011) confirm that government effectiveness, like other governance dimensions, allow many meaningful cross-country and over-time comparisons. The governance indicators are highly correlated across countries and, for example, countries that have better mechanisms of government effectiveness have better controls against corruption or greater respect for the law. It would have been appropriate to include other variables that affect the disclosure of sustainability such as the number of NGOs (Lim and Tsutsui, 2012), but unfortunately we do not have available data for this variable for all the countries in the sample.

We measure governance in a country using government effectiveness (GOVEFF), an index of government capacity to formulate and implement policies with a range from -2.5 to 2.5. Government effectiveness is a measure of the quality of public services, the competence of

civil servants and their degree of independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies (Kaufmann, Kraay, and Mastruzzi 2011). Robertson (2009) suggests that government effectiveness has a decisive impact on CSR practices in Singapore, Turkey, and Ethiopia. Husted-Corregan and Saffar (2016) show that political uncertainty across countries can influence CSR activities. De Villiers and Marques (2016) find that firms disclose higher levels of GRI information in countries with better government effectiveness.

The foreign direct investment (FDI) is a measure of the level of a country's exposure to globalisation. In this sense, the study of Chapple and Moon (2005) used the FDI as an indicator of globalisation and its results confirmed that globalisation enhanced the adoption of CSR practices in Asia. Knudsen (2011) finds that companies from countries with a high share of outward FDI over GDP have become very active in the adoption of CSR initiatives. Marano and Kostova (2016) show that FDI has a positive influence in the adoption of CSR practices. Lucke and Eichler (2016) argue that FDI is influenced by common culture, common language and economic freedom. In addition, Kandogan (2016) suggests that cultural differences within a country may affect the FDI.

[Table 2 near here]

Table 2 reports descriptive statistics of the dependent, independent and control variables. In order to analyse the differences in the effects of national culture on CSR disclosure according to countries' level of GDPPC, we have divided the sample into three subsamples of countries according to their mean GDPPC in the period 2007-2012. The four panels in Table 2 present the descriptive statistics of variables used in our analysis. Panel A of Table 2 shows the results of the full sample (44 countries). Panel B of Table 2 shows the results of the 15 countries with the higher GDPPC (more than US\$ 43,432); Panel C shows the results in the 15 countries with the middle GDPPC (between US\$ 12,357 and US\$ 42,334); and Panel D shows the results in the 14 countries with the lower GDPPC (less than US\$ 11,365). The GRI variable has its highest mean in Panel B of Table 2, corresponding to the countries with higher GDPPC. Countries with higher GDPPC have the highest mean values of individualism (IDV), indulgence (IND), government effectiveness (GOVEFF) and foreign direct investment (FDI). Countries with middle GDPPC have higher mean values of long-term orientation (LTO), masculinity (MAS) and uncertainty avoidance (UAI). Finally, countries with lower GDPPC have the higher mean values of power distance (PDI).

IV. Empirical results

Table 3 contains the correlation matrix. In the sample with all countries, the dependent variable GRI has a significant correlation with all independent variables, with the exception of the variable LTO. However, in the samples of countries with middle and lower GDPPC, the variable GRI has a negative and statistically significant correlation with LTO. In the sample with all countries, GRI has a negative and significant correlation with PDI, IDV, MAS and UAI, and a positive and significant correlation with IND, GOVEFF and FDI. In the subsample of countries with higher GDPPC, GRI has a negative and significant correlation

with MAS, and a positive and significant correlation with IND, GOVEFF and FDI. In the subsample of countries with middle GDPPC, GRI has a negative and significant correlation with IDV, MAS and LTO. In the subsample of countries with lower GDPPC, GRI has a negative and significant correlation with PDI, LTO and FDI, and a positive and significant correlation with UAI and IND. The highest correlation coefficient (-0.76) is between LTO and IND in the subsample of countries with lower GDPPC.

[Table 3 near here]

We have used a balanced panel data and we have estimated all models for pooled ordinary least squares and for random effects. To check for multicollinearity, we have calculated the variance inflation factor (VIF), which takes a value lower than 3.5 for all independent variables in all subsamples of countries, with the exception of the variable IND (VIF value of 6.8) in the subsample of countries with lower GDPPC. For this reason, it has been removed from that subsample. In a model with heteroscedasticity and serial correlation, the estimation with ordinary least squares (OLS) is statistically inefficient because it is not assured that the estimators are optimal in the sense of minimum variance. The data used in our study is characterised by repeated observations over time on some countries and therefore shows correlations across countries and heteroscedasticity. In this case, the regression using Feasible Generalized Least Squares (FGLS) offers potential efficiency gains over OLS. However, Beck and Katz (1995) demonstrated that FGLS produces coefficient standard errors that are underestimated. In the presence of these problems, the estimates with Panel-Corrected Standard Errors (PCSE) have been very accurate for finite samples. Further, there are many studies with panel data characterized by heteroscedasticity and serial correlation that, with the intention of showing that the results of the estimations do not differ depending on the chosen method, present the results with both estimates with methods FGLS and PCSE (Philippe and Durand 2011; Hossain 2016).

Table 4 presents the empirical results obtained in the sample with all countries and in each of the three country subsamples established according to their level of GDPPC. The results of the FGLS and PCSE regressions in the sample with all countries, and in the subsamples of countries with middle and lower GDPPC, are consistent with the hypothesis 1 that the levels of power distance (PDI) in a country are negatively related to CSR disclosure. However, the PDI does not have a significant effect on GRI in the subsample of countries with the highest GDPPC.

The results of the FGLS and PCSE regressions also confirm the hypothesis 2 that the level of individualism (IDV) in a country is negatively related to CSR disclosure in the subsamples of countries with middle and higher GDPPC. However, the individualism does not have a significant effect on GRI in the sample with all countries nor in the subsample of countries with lower GDPPC.

The estimations of FGLS and PCSE models in the samples with all countries and in the ones with countries with higher and middle GDPPC confirm the hypothesis 3 that the level of masculinity (MAS) in a country is negatively related to CSR disclosure, although in countries with lower GDPPC the masculinity has no effect on CSR disclosure.

We find that our results of both FGLS and PCSE estimations confirm the hypothesis 4 that the level of uncertainty avoidance (UAI) is positively related to CSR disclosure in countries with higher and lower GDPPC. However, the uncertainty avoidance has no robust association with CSR disclosure (there is a positive relationship at 10% significance level only in FGLS estimations) in the subsample of countries with middle GDPPC.

The results do not confirm the hypothesis 5 that the level of long-term orientation (LTO) in a country is positively related with CSR disclosure. The regression coefficients of the variable LTO are positive and statistically significant only in the FGLS estimation for the sample of all countries (at 10% significance level). The results of FGLS and PCSE estimations for the subsample of countries with middle GDPPC show a negative and significant effect of LTO on CSR practices, which is contrary to our prediction.

The hypothesis 6 that predicts a negative relationship between the level of indulgence (IND) in a country and CSR disclosure is confirmed only in the subsample of countries with middle GDPPC. On the contrary, the results of FGLS and PCSE estimations show a positive relationship between IND and CSR practices in the sample with all countries and in the subsample of countries with higher GDPPC.

In addition, the results of our estimates for the control variables indicate that government effectiveness (GOVEFF) has a positive and significant effect on CSR disclosure in all the samples of countries analysed, except for the subsample of countries with lower GDPPC. The foreign direct investment net flows (FDI) has a positive and significant effect on CSR disclosure in the sample with all countries and in the subsample of countries with higher GDPPC, but has no significant effect in the subsamples of countries with middle and lower GDPPC.¹

[Table 4 near here]

The results of the analysis show that the influence of the cultural variables on CSR disclosure is different when taking into account the level of GDPPC of the countries. For example, in countries with higher GDPPC, the CSR reporting is negatively related to individualism and masculinity, although it is positively related to uncertainty avoidance, which is consistent with our predictions. However, in countries with higher GDPPC, the relationship between CSR reporting and indulgence is positive, and power distance and long-term orientation do not have a significant effect on CSR disclosure. In the group of countries with middle GDPPC, the CSR reporting is negatively related to power distance, individualism, masculinity and indulgence, which is consistent with our predictions. Similarly, the relationship of CSR with uncertainty avoidance is positive, and the association

¹ In order to assess the sensitivity of the results, we have performed a variety of tests for robustness. Firstly, we have deleted the control variables in our estimations. Secondly, we have removed in each one of the three subsamples the country with the highest number of GRI reports. Further, we have removed government effectiveness as a control variable and we have included in the models the variable ‘rule of law’, incorporated into the CSR studies by authors such as De Villiers and Marques (2016). In all cases, the results are similar to those presented in Table 4.

with long-term orientation is negative. In countries with lower GDPPC only two of the six cultural variables have effects on CSR disclosure CSR: power distance (negatively) and uncertainty avoidance (positively).

V. Conclusions and implications

The research on CSR has recently incorporated the analysis of informal institutional factors to explain the differences between countries in CSR practices. Among the most analysed factors in literature, we find the four traditional dimensions of Hofstede (1980): power distance, individualism, masculinity and uncertainty avoidance. Only a few studies on the effect of differences in cultural dimensions between countries on their CSR practices have examined factors such as long-term orientation and indulgence. Furthermore, the evidence about the effect of differences in national culture on the CSR disclosure of companies around the world is not conclusive because the results are opposite in some cultural dimensions according to the studies carried out to date.

This article investigates the relationship between CSR disclosure in a country, measured by the GRI reports per million inhabitants, and its institutional and economic context. The analysis incorporates the six cultural variables of Hofstede's model, government effectiveness and foreign direct investment. We have used panel data to investigate if the association between GRI disclosure and institutional factors is different based on countries' levels of economic development. We have assumed that national dimensions are associated with countries' wealth, and we have divided the sample with all countries into three subsamples according to their level of GDPPC.

According to the results of this work, the effects of institutional and economic factors on CSR disclosure in different countries are affected by their level of GDPPC. In the 44 countries surveyed, we have found that CSR disclosure is negatively associated to cultural variables such as power distance and masculinity, and positively related to indulgence. Additionally, the relationship of CSR disclosure with government effectiveness and foreign direct investment is also positive in all subsamples of countries analysed.

The results are different when we estimate our models in the three subsamples of countries according to their level of GDPPC. In the subsample of countries with higher GDPPC, CSR disclosure is negatively related to individualism and masculinity and positively related to uncertainty avoidance and indulgence. In the subsample of countries with middle GDPPC, the only cultural variable that does not have a significant positive effect on sustainability disclosure is uncertainty avoidance, but indulgence has the opposite association. In the subsample of countries with lower GDPPC, CSR disclosure is negatively related to power distance and positively related to uncertainty avoidance. Government effectiveness has a positive effect on CSR disclosure in the subsamples of countries with higher and middle GDPPC. However, the level of foreign direct investment in a country only has a positive and significant effect on sustainability disclosure in the subsample of countries with higher GDPPC.

In summary, the results of this article show that the relationships of cultural dimensions with CSR disclosure are not homogeneous between countries. On the contrary, they are strongly influenced by the level of wealth of the countries.

This article may have implications for future research and for managers. We have shown that institutional factors are associated with CSR disclosure but their influence depends on the level of GDPPC of each country. In addition, the studies on sustainability reporting should be carried out with samples of countries with similar levels of economic development. Managers should take into account in domestic and international operations that the pressure of stakeholders is associated with economic and institutional levels. In countries with middle GDPPC level, a greater number of cultural dimensions has a positive influence on CSR practices, which may suggest that these countries are institutionally more heterogeneous. It would be interesting to research the opposite effect of indulgence on the CSR disclosure in the previous group of countries compared to the group of countries with the highest GDPPC.

However, the present study has some limitations. The first one is that our models focus on the countries' cultural variables, but there are other external and internal economic variables that influence the CSR disclosure and that have not been considered in this analysis. The second one is that the institutional and economic factors are interrelated and it is difficult to include them in small samples of countries. Finally, we have measured CSR disclosure by the GRI reports per million inhabitants in a country, and therefore our results may not be extendable to other sustainability disclosure measures or other CSR activities.

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Table 1. Sample distribution: GRI reports and GDP per capita. Period 2007-2012.

Countries	No. of reports	Percent of total	Average GDP per capita for the period (current US\$)
Argentina	130	1.32	11,114.4
Australia	457	4.63	52,462.6
Austria	182	1.84	48,616.6
Belgium	118	1.20	45,831.8
Brazil	712	7.22	10,082.2
Canada	319	3.23	47,296.1
Chile	214	2.17	12,357.1
China	346	3.51	4,378.1
Colombia	193	1.96	6,103.3
Croatia	27	0.27	14,142.5
Czech Republic	11	0.11	20,295.4
Denmark	72	0.73	59,527.8
Finland	183	1.85	48,867.6
France	165	1.67	42,334.7
Germany	370	3.75	43,432.1
Greece	138	1.40	27,509.0
Hong Kong	104	1.05	32,867.9
Hungary	125	1.27	13,668.7
India	174	1.76	1,251.1
Indonesia	72	0.73	2,794.1
Ireland	19	0.19	53,654.6
Italy	312	3.16	37,411.4
Japan	410	4.15	41,169.0
Korea South	496	5.03	22,112.7
Luxembourg	21	0.21	106,392.2
Mexico	160	1.62	9,129.3
Netherlands	380	3.85	52,067.7
New Zealand	72	0.73	33,703.0
Norway	82	0.83	91,968.7
Peru	125	1.27	4,868.5
Philippines	55	0.56	2,094.7
Poland	48	0.49	12,656.2
Portugal	206	2.09	22,828.6
Romania	15	0.15	8,639.4
Russia	146	1.48	11,229.5
Singapore	52	0.53	45,298.8
Spain	957	9.70	32,053.0
Sweden	428	4.34	54,013.8
Switzerland	277	2.81	75,098.3
Thailand	36	0.36	4,530.7
Turkey	67	0.68	9,942.9
United Kingdom	357	3.62	41,825.3
United States	1027	10.41	48,846.1
Venezuela	8	0.08	11,365.4
Total	9,868	100.00	31,314.4

Table 2. Descriptive statistics of the variables.

Variable	Mean	Std. dev.	Min.	Max.
<i>Panel A. All countries (N=264, countries=44)</i>				
GRI	1.74	2.26	0.01	12.71
PDI	55.68	20.69	11.00	94.00
IDV	49.98	24.31	12.00	91.00
MAS	51.27	19.58	5.00	95.00
UAI	66.13	24.19	8.00	112.00
LTO	49.61	21.86	13.00	100.00
IND	51.50	20.22	17.00	100.00
GOVEFF	0.91	0.91	-1.40	2.37
FDI	16.43	79.81	-19.12	772.22
<i>Panel B. Higher GDPPC countries (more than US\$ 43,432) (N= 90, countries=15)</i>				
GRI	3.07	3.02	0.18	12.71
PDI	36.67	15.13	11.00	74.00
IDV	69.47	16.88	20.00	91.00
MAS	48.73	23.02	5.00	79.00
UAI	49.40	20.94	8.00	94.00
LTO	50.27	20.71	21.00	83.00
IND	61.93	9.79	40.00	78.00
GOVEFF	1.80	0.25	1.34	2.37
FDI	40.00	133.26	-3.68	772.22
<i>Panel C. Middle GDPPC countries (between US\$ 12,357 and US\$ 42,334) (N= 90, countries=15)</i>				
GRI	1.60	1.29	0.03	4.56
PDI	56.37	13.21	22.00	73.00
IDV	51.40	23.15	18.00	89.00
MAS	55.67	18.77	28.00	95.00
UAI	77.87	22.68	29.00	112.00
LTO	55.53	19.66	28.00	100.00
IND	41.80	16.74	17.00	75.00
GOVEFF	1.07	0.46	0.21	1.88
FDI	5.21	10.86	-19.12	49.17
<i>Panel D. Lower GDPPC countries (less than US\$ 11,365) (N= 84, countries=14)</i>				
GRI	0.25	0.34	0.01	1.71
PDI	75.21	12.37	49.00	94.00
IDV	28.21	12.02	12.00	48.00
MAS	53.00	12.34	34.00	73.00
UAI	70.21	20.49	30.00	95.00
LTO	41.43	22.63	13.00	87.00
IND	50.79	25.95	20.00	100.00
GOVEFF	-0.20	0.44	-1.40	0.40
FDI	1.03	0.98	-0.33	3.89

Variable definitions:

PDI is power distance (Hofstede's cultural dimension). IDV is individualism (Hofstede's cultural dimension). MAS is masculinity (Hofstede's cultural dimension). UAI is uncertainty avoidance (Hofstede's cultural dimension). LTO is long-term orientation (Hofstede's cultural dimension). IND is indulgence (Hofstede's cultural dimension). GOVEFF is governance effectiveness (World Governance Indicator, World Bank) FDI is foreign direct investment (World Bank). GDPPC is Gross Domestic Product per capita (World Bank). The Hofstede's cultural dimensions are available at <http://geerthofstede.com/research-and-vsm/dimension-data-matrix>

Table 3. Correlation coefficients of the variables.*Panel A. All countries*

	1	2	3	4	5	6	7	8	9
1. GRI	1.00								
2. PDI	-0.49***	1.00							
3. IDV	-0.28***	-0.71***	1.00						
4. MAS	-0.30***	0.07	0.04	1.00					
5. UAI	-0.15**	0.31***	-0.24***	0.13**	1.00				
6. LTO	0.07	0.07	0.03	0.08	0.01	1.00			
7. IND	0.22***	-0.40***	0.22***	-0.02	-0.16**	-0.54***	1.00		
8. GOVEFF	0.53***	-0.73***	0.61***	-0.20***	-0.39***	0.21***	0.19***	0.00	
9. FDI	0.38***	-0.13**	0.08	-0.02	-0.00	0.12*	0.03	-0.16***	1.00

Panel B. Higher GDPPC countries (more than US\$ 43,432)

1. GRI	1.00								
2. PDI	-0.14	1.00							
3. IDV	-0.13	-0.36***	1.00						
4. MAS	-0.29***	0.06	0.07	1.00					
5. UAI	0.12	-0.02	0.23**	0.32***	1.00				
6. LTO	0.12	0.41***	-0.49***	0.23**	0.37***	1.00			
7. IND	0.18*	-0.43***	0.60***	-0.13	-0.24**	-0.56***	1.00		
8. GOVEFF	0.28***	-0.03	-0.35***	-0.51***	-0.44***	-0.02	0.07	1.00	
9. FDI	0.36***	0.07	-0.15	0.02	0.26**	0.18*	-0.16	-0.13	1.00

Panel C. Middle GDPPC countries (between US\$ 12,357 and US\$ 42,334)

1. GRI	1.00								
2. PDI	-0.15	1.00							
3. IDV	-0.25**	-0.66***	1.00						
4. MAS	-0.31***	-0.41***	0.55***	1.00					
5. UAI	0.01	0.44***	-0.33***	-0.16	1.00				
6. LTO	-0.36***	0.13	-0.12	0.33***	-0.04	1.00			
7. IND	0.13	-0.60***	0.32***	-0.12	-0.15	-0.43***	1.00		
8. GOVEFF	0.16	-0.33***	0.01	-0.05	-0.60***	0.08	0.40***	1.00	
9. FDI	0.05	0.11	-0.12	0.11	-0.43***	0.05	-0.29***	0.27***	1.00

Panel D. Lower GDPPC countries (less than US\$ 11,365)

1. GRI	1.00								
2. PDI	-0.42***	1.00							
3. IDV	-0.03	-0.04	1.00						
4. MAS	-0.04	0.12	-0.16	1.00					
5. UAI	0.36***	-0.21*	0.10	-0.32***	1.00				
6. LTO	-0.34***	0.43***	0.18*	-0.34***	-0.33***	1.00			
7. IND	0.24**	-0.29***	-0.31***	0.61***	0.31***	-0.76***	1.00		
8. GOVEFF	0.12	-0.18	0.27**	-0.12	-0.08	0.10	-0.12	1.00	
9. FDI	-0.21*	0.36***	0.06	-0.19*	-0.11	0.35***	-0.26**	0.01	1.00

*** Significant at 1% confidence level (p<0.01); ** Significant at 5% confidence level (p<0.05);

* Significant at 10% confidence level (p<0.10)

Variable definitions:

PDI is power distance (Hofstede's cultural dimension). IDV is individualism (Hofstede's cultural dimension). MAS is masculinity (Hofstede's cultural dimension). UAI is uncertainty avoidance (Hofstede's cultural dimension). LTO is long-term orientation (Hofstede's cultural dimension). IND is indulgence (Hofstede's cultural dimension). GOVEFF is governance effectiveness (World Governance Indicator, World Bank) FDI is foreign direct investment (World Bank). GDPPC is Gross Domestic Product per capita (World Bank). The Hofstede's cultural dimensions are available at <http://geerthofstede.com/research-and-vsm/dimension-data-matrix>

Table 4. The impact of culture on GRI reporting.

	All countries		Higher GDPPC countries		Middle GDPPC countries		Lower GDPPC countries	
	FGLS	PCSE	FGLS	PCSE	FGLS	PCSE	FGLS	PCSE
PDI	-0.026*** (0.006)	-0.036*** (0.008)	-0.020 (0.015)	-0.022 (0.015)	-0.068*** (0.010)	-0.076*** (0.012)	-0.007** (0.003)	-0.009*** (0.003)
IDV	-0.005 (0.004)	-0.009 (0.005)	-0.053** (0.021)	-0.067*** (0.022)	-0.023*** (0.005)	-0.027*** (0.006)	0.001 (0.003)	-0.002 (0.003)
MAS	-0.022*** (0.005)	-0.027*** (0.009)	-0.022*** (0.008)	-0.026** (0.012)	-0.018*** (0.006)	-0.018*** (0.007)	0.003 (0.003)	0.002 (0.003)
UAI	0.005 (0.003)	0.005 (0.004)	0.041*** (0.015)	0.050*** (0.018)	0.008* (0.005)	0.009 (0.007)	0.004*** (0.001)	0.005*** (0.001)
LTO	0.008* (0.004)	0.012 (0.008)	0.010 (0.012)	0.017 (0.018)	-0.024*** (0.006)	-0.027*** (0.006)	0.000 (0.001)	-0.001 (0.001)
IND	0.009** (0.004)	0.016** (0.008)	0.109*** (0.029)	0.152*** (0.039)	-0.028*** (0.009)	-0.033*** (0.010)	Omitted	Omitted
GOVEFF	0.365*** (0.106)	0.475*** (0.146)	1.531** (0.680)	2.002*** (0.779)	0.434* (0.235)	0.486* (0.271)	-0.070 (0.042)	0.035 (0.055)
FDI	0.006*** (0.002)	0.006*** (0.002)	0.006*** (0.001)	0.005*** (0.001)	0.006 (0.010)	0.003 (0.013)	0.003 (0.021)	-0.024 (0.032)
Intercept	1.696*** (0.576)	2.157** (0.970)	-6.040** (2.483)	-9.150*** (3.001)	8.012*** (1.102)	8.883*** (1.118)	0.070 (0.257)	0.364 (0.291)
Year dummies	YES	YES	YES	YES	YES	YES	YES	YES
Wald Chi2	252.71***	175.39***	166.49***	146.38***	158.18***	137.48***	44.09***	63.51***
R-squared	-	0.389	-	0.525	-	0.498	-	0.360
No. observations	264	264	90	90	90	90	84	84
No. countries	44	44	15	15	15	15	14	14

All models have corrections for heteroscedasticity, autocorrelation, and contemporaneous correlation.

Statistical significance: ***<0.01, **<0.05, *<0.10. Standard errors are reported in parentheses.

Variable definitions:

PDI is power distance (Hofstede's cultural dimension). IDV is individualism (Hofstede's cultural dimension). MAS is masculinity (Hofstede's cultural dimension). UAI is uncertainty avoidance (Hofstede's cultural dimension). LTO is long-term orientation (Hofstede's cultural dimension). IND is indulgence (Hofstede's cultural dimension). GOVEFF is governance effectiveness (World Governance Indicator, World Bank) FDI is foreign direct investment (World Bank). GDPPC is Gross Domestic Product per capita (World Bank). The Hofstede's cultural dimensions are available at <http://geerthofstede.com/research-and-vsm/dimension-data-matrix>