

**Cultural environments and the appointment of female directors on boards:
An analysis from a global perspective**

María Consuelo Pucheta-Martínez
Universidad Jaume I
Departamento de Finanzas y Contabilidad
Campus del Riu Sec, s/n
12071-Castellón
Spain
e-mail: pucheta@uji.es

Isabel Gallego-Álvarez
University of Salamanca
Instituto Multidisciplinar de Empresa (IME)
Department of Business Administration
Campus Miguel de Unamuno, Edificio FES
37007-Salamanca
Spain
e-mail: igallego@usal.es

Inmaculada Bel-Oms
Universidad de Valencia
Departamento de Finanzas Empresariales
Avda. Tarongers, s/n.
46022- Valencia
Spain
e-mail: Inmaculada.Bel@uv.es

ACKNOWLEDGEMENTS

The authors acknowledge financial support from the Spanish Ministry of Economy, Industry and Competitiveness for the research project ECO 2017-82259-R and from the University Jaume I for the research project UJI-B2018-15.

Cultural environments and the appointment of female directors on boards: An analysis from a global perspective

Abstract

The impact of the six cultural dimensions of Hofstede (power distance, individualism, masculinity, uncertainty avoidance, long-term orientation and indulgence) on the presence of female directors on boards has not been previously examined, as far as we know. Past research has focussed on four or five of these six cultural dimensions. Thus, the aim of this research is to analyse how board gender diversity is affected by all of the Hofstede cultural dimensions in a sample of firms operating in different countries. The data for this research was collected from Thomson Reuters database. The paper is drawn on institutional theory, which suggests the idea that firms are influenced by cultural aspects, since organisations are not separated from their environment, but interact with their environment through relationships with stakeholders. The findings show that cultural dimensions such as power distance, individualism and indulgence have a positive effect on the proportion of women directors on boards. In contrast, the dimensions of masculinity and long-term orientation affect it negatively, while uncertainty avoidance does not influence it.

Keywords: Cultural dimensions, cultural contexts, women on boards, institutional theory.

1. Introduction

A board of directors is a governing body of a company whose functions are to supervise and to control the management of the company, and the board's composition is considered of the greatest importance for it to be efficient (Bhagat and Black, 2000). Within board composition, the representation of women is becoming very important. As some authors argue (Terjesen et al., 2009; Bennouri et al., 2018; Gul et al., 2011; Gull et al., 2018; Lai et al., 2017), women in management positions are more diligent than men, exhibit higher levels of independence and are more likely to worry about the interests of shareholders. Other authors such as Schubert (2006) believe that there is a consensus among academics that female directors on boards tend to be more risk-averse and are more concerned with ethical issues than men when making decisions within an organisation. All of this has resulted in an increase in the worldwide interest in regulating the participation quotas of women on boards, with Nordic countries such as Norway, Sweden and Finland having the highest representation with 44.2%, 26.9% and 25%, respectively (Catalyst, 2011).

Among the reasons that can explain the different levels of women's access to boards, the prevailing culture in each country has been recognised as a critical factor. Culture can create stereotypes¹ of roles associated with men and women that can affect women's access to boards (Carrasco et al., 2015).

Concerning past research focussed on analysing the impact that the cultural context has on the presence of women on boards, one of the first investigations was carried out by Sealy et al. (2009) in the context of four European countries. These authors show that it is crucial to consider the cultural and political contexts when board diversity is examined, particularly board gender diversity. Warner-Soderholm et al. (2016) base their study on European countries and find cultural variables that could promote the successful participation of women on boards within companies belonging to those European countries. Their evidence shows significant relationships between power distance, uncertainty avoidance, future orientation, assertiveness and higher levels of implementation of women on boards. This finding supports the idea that culture plays an important role in the decision-making process of appointing board members. Later research has focussed on international companies. In this regard,

Carrasco et al. (2015) use a sample of international companies belonging to 32 countries and Gyapong and Afrifa (2009) use a sample of microfinance institutions (MFIs) across 61 countries. Both works use the national culture framework proposed by Hofstede (1983, 2001), later improved by Hofstede et al. (2010). The empirical evidence is mixed with respect to the effect of culture on the presence of women on boards when comparing different countries. Thus, it is essential to deepen the understanding of this issue.

This research is framed within institutional theory, which allows a comparative examination of the effects of culture on the presence of women directors on boards (Ianotta et al., 2016). This approach suggests that companies are integrated into a nexus of formal and informal institutions, including culture, which directly influence their activities. Therefore, we use institutional theory to systematically expound the effects of culture on the proportion of female directors on boards (DiMaggio and Powell, 1983; Scott, 2001).

Taking into account the above arguments, the aim of this research is to provide greater evidence of the impact of different cultures on the representation of women directors on boards from the perspective of institutional theory. To do so, we follow the cultural dimensions proposed by Hofstede (1983), Hofstede and Hofstede (2005) and Hofstede, Hofstede and Minkov (2010), which are embodied in power distance, individualism, masculinity, uncertainty avoidance, long-term orientation and indulgence. In general, the main results of this research show that certain cultural dimensions such as power distance, individualism and indulgence have a positive effect on the presence of women on boards. In contrast, masculinity and long-term orientation are negatively associated with board gender diversity, while uncertainty avoidance does not impact it.

This research contributes to past literature in several ways. Firstly, our evidence expands the literature on how national culture influences the presence of women directors on boards. Specifically, we have considered an international sample of companies from 27 countries, compared to previous studies that have focussed on different countries to ours or geographical areas, and even on different sectors of activity (e.g. Gyapong and Afrifa, 2019). Secondly, in this research, we use the six cultural dimensions proposed by Hofstede in contrast to other investigations, where only four of the proposed dimensions have been considered. Thus, in this research we have also considered long-term orientation and indulgence, cultural dimensions that have hardly been analysed in preceding studies. Therefore, this contribution complements and improves past evidence. A third contribution comes from the findings provided, since all the dimensions do not equally affect the presence of women directors on boards. Some dimensions are positively associated with the presence of female directors on boards and others negatively or with no relationship. In summary, it is considered relevant for companies to analyse the cultural factors influencing the presence of women directors on their boards. In this regard, the different

levels of representation of women directors on boards, when comparing different countries, is largely explained by the culture that prevails in each country.

The paper is developed in the following sections. The theoretical framework relative to national culture and women on corporate boards is described in the following section. In section three, the hypotheses proposed in this research are presented. Section four provides the methodology and the variables used. In section five, the results are analysed and finally, in section six, the conclusions and implications of our findings are drawn.

2. National culture and women on corporate boards

According to institutional theory, organisations are influenced by cultural aspects (Scott, 2008) since they are not separated from their environment, but they interact with it through relationships with different stakeholders. Thus, the cultural norms that surround a company have a deep effect on the values and behaviour promoted within an organisation, since they are consistent with the beliefs and norms of society. This allows companies to be socially acceptable and obtain the necessary resources and legitimacy that contribute to their performance and survival.

Therefore, it is important to determine what culture is and how it affects the presence of women on boards. For Vitell et al. (2003), culture may be defined as a collective programming of the mind, highly invisible, unconscious and difficult to change, affecting the basic values of citizens and, at the same time, of business. In the same vein, Parboteeah and Cullen (2003, p. 138) consider that culture represents a historically determined set of implicit and explicit abstract notions and beliefs (that is, what it is good, correct and desirable), shared by a group of individuals who have experienced a common historical experience. These cultural values, norms, beliefs and assumptions are symbolically reinforced and transmitted through socialisation and training from generation to generation. For other authors such as Su (2006) and Tsakumis (2007), national culture has an important impact on the decision-making process's ethic and is expected to influence organisational structure, behaviour of managers and business performance (Richardson and Boyd, 2005; Aguilera and Jackson, 2003; Lubatkin et al., 2007). Along these lines, seminal papers such as by Friedland and Alford (1990), Hofstede (1991) and Hickson and Pugh (1995) conclude that the cultural characteristics of a country, such as features of its institutional environment, have a great influence on the corporate governance structure of firms.

Within this corporate governance, boards become relevant because they are responsible for supervising business management and the strategies to be carried out. Therefore, boards must be efficient for companies to succeed in the development of their activity. In this regard, board composition is precisely one of the most important aspects to consider when analysing board efficiency and effectiveness (Bhagat and Black, 2000). Specifically, the presence of female directors on boards is

becoming highly significant (Guest, 2019). As Carter et al. (2003) claim, the presence of women directors on boards provides different perspectives and alternatives by encouraging discussion and improving problem-solving, since women are considered more reflective when making decisions. Additionally, they can provide new ideas and improve communication (Milliken and Martins, 1996; Grosvold and Brammer, 2011; Brammer et al., 2009).

However, past evidence suggests that this statement is not always fulfilled, especially when analysing companies from different countries, where the presence of women on boards is different, depending on the country (Catalyst, 2008). Thus, Norway holds first place with 44.2% of women represented on boards, and Sweden holds second place with 26.9%, followed by Finland and Denmark with 25% and 18.1%, respectively. In other countries such as Spain or Italy, only 6.6% and 2.1% representation are obtained, respectively. In a later report (Catalyst, 2015), it is revealed for S&P 500 companies that only 19.9% of women held positions on boards and that 2.8% of S&P 500 companies had zero women directors; 24.6% had one woman and only 14.2% of companies had 30% or more women on their boards.

Some authors such as Li and Harrison (2008) suggest that the different levels of representation of women on boards, when comparing different countries, is largely explained by the culture that prevails in each country. In this vein, culture can create stereotypes of roles associated with men and women that can affect the presence of female directors on boards. On the other hand, Gupta et al. (2002) show groups of countries that have common cultural characteristics and identify a total of 10 different geographical groups. Moreover, these authors analyse cultural attitudes towards gender and how they can impact the opportunities and ambitions of the executive careers of women. For Parboteeah et al. (2008), gender differentiation is the degree to which men and women are viewed differently by society. When gender differentiation is lower, women are more likely to assume high positions of responsibility (Javidan and House, 2001). Thus, the Nordic countries have low levels of gender differentiation, while in Anglo-Saxon and Latin American countries, gender differentiation is greater (Gupta et al., 2002).

In this line of research based on the influence of national culture on the participation of women directors on boards, we can also refer to the paper of Carrasco et al. (2015). This research focusses on a sample of international companies belonging to 32 countries and analyses how cultural dimensions affect the presence of women on boards. Their findings show that countries with a high tolerance for the distribution of power and high rates of masculinity have low participation rates of women in senior management positions. In a further work, carried out by Gyapong and Afrifa (2019), for a sample of microfinance institutions (MFIs) across 61 countries and using the national culture framework proposed by Hofstede (1983, 2001), later improved by Hofstede et al. (2010), it is revealed that in countries with a high level of uncertainty avoidance and individualism, the number of female directors on boards is lower. On the contrary, in countries with high power distance, they appoint more women in top

management positions. Therefore, past empirical evidence shows that there are differences regarding the presence of women on boards when comparing different countries, so it is necessary to deepen the understanding of this issue.

3. Research hypotheses

The impact of culture is usually analysed using the dimensions proposed by Hofstede (1980, 2001), Hofstede and Hofstede (2005) and Hofstede et al. (2010). Although the Hofstede model initially considered four cultural dimensions (i.e., power distance, uncertainty avoidance, individualism and masculinity), later two others (i.e., long-term orientation and indulgence) were incorporated. These dimensions give an important theoretical framework, not only to analyse national culture, but also to consider the effects of cultural differences on the presence of female directors on boards. According to Hoecklin (1996), this theoretical framework is especially useful for understanding people's conception of what an organisation is, the mechanisms that are considered appropriate to control and coordinate the activities within it and the roles and relationships of its members. Considering the above, the research hypotheses are then formulated for each of the Hofstede's cultural dimensions to analyse the presence of women directors on boards in different cultural contexts.

3.1. Power distance

Power distance is one of the dimensions proposed by Hofstede (2001) and it describes the level of the hierarchy of a society. This dimension represents the degree to which members of institutions and organisations within a given culture expect and accept that power is distributed unevenly. Inequality can appear in what each individual contributes to society and what it receives from it, in the distribution of power or in the rights and duties of each individual. Authors such as Waldman et al. (2006) argue that cultures with greater power distance accept that the hierarchy between superiors and subordinates is extensive and legitimate. In this regard, Miska et al. (2018) support that in cultures with high power distance, people tend to differentiate in classes according to different criteria. The power bases tend to be stable and power is considered to provide social order, relational harmony and stability.

Regarding the relationship between power distance and the presence of women on boards, the established order of power has given rise to boards made up mainly by men, and in high-power societies, this order will not have much opposition when it is about sharing power and seats on boards (Hillman et al., 2002). Hence, considering that power is distributed unequally as something natural, members of society tend to accept their position in the social system in countries with high distances to power. Previous evidence (Singh et al., 2002) finds that women participate less than men in the power structure

in organisations and, therefore, women can consider this as an order of legitimate inequality. This may explain the women's own rejection of promotion within organisations or actively directing their careers for promotion in the company (Farrell and Hersch, 2005).

Considering the above arguments, it seems to be expected that in those societies that show greater value for the distance to power, the levels of representation of women on boards would be lower. Thus, we expect a relationship between both variables to be negative (Simmons et al., 2012). To analyse this association, the following hypothesis is proposed:

***H1:** The higher the power distance in a society is, the lower the presence of female directors on boards will be.*

3.2. Individualism

In these types of societies, people feel comfortable with having the authority to make decisions based on what the individual thinks is the best. The freedom and independence of the individual are considered of great importance, and priority is given to personal interests over the social group. According to Bradley et al. (2013), in an individualistic culture, people are more likely to make decisions independently in favour of their own goals or achievements. Therefore, an individualistic culture is supposed to encourage risk-taking and reward business behaviours.

According to Li and Harrison (2008), in highly individualistic societies people are more concerned with personal interest, and boards with more outside directors convey that boards defend the interests of different stakeholders in society. Furthermore, within a society with high individualism, the exchange of private and individual opinions is highly promoted and valued, generating the expression of thoughts, advice and counsels. Therefore, within societies characterised by individualism, a positive relationship is expected between the role of directors and firm performance. Furthermore, individualism is expected to positively affect the degree of female participation on boards, as companies try to legitimise themselves by representing a more diverse range of individual interests, and may reflect, as indicated by Carrasco et al. (2015), a commitment to individual human rights, which could include gender equality based on personal merit.

Considering the above, we propose the following hypothesis:

***H2:** The higher the individualism in a society is, the higher the presence of female directors on boards will be.*

3.3. Masculinity

The dimension of masculinity refers to gender and the role of men in society. Male oriented cultures tend to be assertive and tend towards material success, while those with a female orientation tend to be more modest and focussed on quality of life. Societies that consider themselves masculine describe men as assertive, aggressive, ambitious, competitive and materialistic (Hofstede, 2001). At the same time, in this type of society, cooperative behaviour is less appreciated.

For Orij (2010), masculinity is the opposite of the social orientation of a culture. Authors such as Peng et al. (2014) observe that in cultures with a high degree of masculinity, values such as professional career and business success are given more importance. Additionally, Gyapong and Afrifa (2019) argue that institutions in male societies are more likely to be dominated by men, since in these societies administrative decisions and performance orientation prevail and more emphasis is placed on competitive behaviour with the objective of achieving economic achievements or results (Chizema et al., 2015).

Regarding the relationship between masculinity and the presence of women on boards, it seems to be negative. In this regard, Oakley (2000) supports that the attribution of traditional values to women may bias their choices as board members, since it is precisely masculine societies that defend gender roles in a traditional way.

According to Hofstede (2001), in a masculine society the administrative decisions, the performance orientation and the emphasis on competitive behaviour are highly valued, and high values of the masculinity cultural dimension indicate that the values associated with the masculine role prevail in society. These arguments lead us to expect a negative relationship between masculinity and the degree of female directors on boards (Carrasco et al., 2015).

Therefore, considering the above, we propose the following hypothesis:

H3: The higher the masculinity in a society is, the lower the presence of female directors on boards will be.

3.4. Uncertainty avoidance

According to Sully de Luque and Javidan (2004, p. 602), uncertainty avoidance is ‘the extent to which ambiguous situations are threatening to individuals, to which rules and order are preferred, and to which uncertainty is tolerated in a society’. Societies with high uncertainty avoidance impose more rules and regulations on people and tolerate less change (De Mooij and Hofstede, 2010). Hofstede (2001) argues that people in cultures with high uncertainty avoidance feel more anxious and, therefore, tend to take immediate measures to reduce levels of ambiguity.

Gaspay et al. (2008) support that cultures with high levels of uncertainty avoidance are more risk-sensitive and perceive a higher level of uncertainty in each situation. Thus, Bilimoria and Piderit (1994) consider that companies are sometimes reluctant to hire women in managerial positions, since risk and uncertainty are perceived when they are appointed. Therefore, in countries where the level of uncertainty avoidance is high, it is expected to have fewer women on boards.

For Carrasco et al. (2015), in cultures with high levels of uncertainty avoidance, members of society base their behaviour on clear procedures, well-known strategies and well-understood norms to reduce uncertainty and deal with unknown situations. Regarding women, they provide a different perspective in the debate and the decision-making process (Zelechowski and Bilimoria, 2004), so it is likely that in new cultures with less aversion to uncertainty, new approaches and ideas will be accepted more easily within boards. In this context, there is greater tolerance towards uncertainty and different ideas, approaches and concepts and, therefore, also a greater tolerance or acceptance of a greater presence of women on boards. Considering the previous arguments, we posit the following hypothesis:

H4: *The higher the uncertainty avoidance in a society is, the lower the presence of female directors on boards will be.*

3.5. Long-term orientation

This dimension suggests that a society attaches great importance to future events. In addition, individuals who belong to this type of society believe that the truth depends a lot on the situation, context and time and have a strong propensity to save and invest, being known for their cunning and perseverance (Hofstede et al., 2010). In the same vein, authors such as Van Everdingen and Waarts (2003) argue that cultures with a long-term orientation are characterised by values such as persistence, the adaptation of traditions to new circumstances, personal adaptability and the idea that the most important events of life will occur in the future. Therefore, companies in cultures with a long-term orientation will focus more on future results, and will be more receptive to changes than companies that operate in a culture of short-term orientation. This dimension is also called the Confucian dynamic, named after Confucius, whose ideology influenced the majority of Eastern cultures (Hofstede, 2001). Although Hofstede and Bond (1988) suggested that long-term oriented countries could be in the middle range of masculinity versus femininity, long-term orientation is still present in countries with a Confucian dynamic, that is, those that do not respect traditions.

Countries with short-term orientation care about establishing absolute truth, firmness, stability and respect for tradition. In this vein, Warner-Soderholm et al. (2016) find that lower scores in future orientation will positively impact the number of women on boards. On the contrary, in countries with a long-term orientation, where there is still a Confucian heritage that opposes the respect of traditions

(Hofstede and Bond, 1988; Moulettes, 2007), the dominant roles of men in society and organisations seem to predominate, so a long-term orientation would negatively affect the presence of women on boards.

Therefore, the hypothesis proposed is the following:

H5: *The higher the long-term orientation is, the lower the presence of female directors on boards will be.*

3.6. Indulgence

This dimension is the last in the cultural framework of Hofstede (Hofstede et al. 2010) and is related to the gratification of basic human desires related to enjoying life. Indulgent societies are more permissive in relation to natural human desires with respect to enjoying life and having fun. Some of the most important characteristics of this type of society are greater importance of leisure, freedom of expression and being happy, which a large percentage of people in these societies declare themselves to be, among other aspects. In this regard, as Ismail and Lu (2014, p.45) suggest, ‘people in indulgence societies prefer happiness and tend to create a perception of freedom, health, and control over life. Its opposite pole, restraint culture, refers to a society that controls the gratification of the above-mentioned desires and feelings’.

Regarding the relationship between the cultural dimension of indulgence and the presence of women directors on boards, there are currently not too many papers exploring this association.

According to Hofstede et al. (2010), the gender roles of indulgent societies are freely prescribed, while in restraint cultures we find that gender roles are strictly prescribed. In addition, authors such as Mukazhanova (2012) argue that the principles established for male societies contradict some of the principles of indulgence and, therefore, no importance would be given to aspects such as professional career or business success, relevant objectives in cultures with a high degree of masculinity (Peng et al., 2014), although it would be important to have positive emotions in the workplace and in everyday life. Therefore, and according to previous studies (e.g. Griffith and Rubera, 2014) that predict a positive relationship between indulgence and other business aspects, we hypothesise a positive effect of indulgent cultures on the presence of women directors on boards. Thus, indulgent societies can foster the presence of women directors on boards as a way of continuously satisfying freedom of expression as well as greater permissiveness. The following hypothesis is proposed:

H6: *The higher the indulgence in a society is, the higher the presence of female directors on boards will be.*

4. Empirical Method

4.1 Data and sample

The initial sample collected from the Thomson Reuters database consists of 16,698 international firm-year observations, covering the period from 2004 to 2015. Nevertheless, from this initial sample, 4,269 firm-year observations have been excluded. Specifically, financial entities have been removed from the sample because their financial statements are incomparable with those of industrial firms. This is because financial entities prepare their financial statements with different accounting rules. Additionally, all those firms for which it was impossible to collect all necessary data for the research were also removed from the sample. Thus, the final unbalanced panel data sample is composed of 12,429 firm-year observations.

In the sample, there are 27 countries represented: Australia, Austria, Belgium, Brazil, Canada, Chile, China, Denmark, Finland, France, Germany, Hong Kong, India, Ireland, Italy, Japan, Mexico, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Thailand, the United Kingdom and the United States. Table 1 shows that 28.50% of the sample's firms operate in the United States, 14.00% in Japan, 9.50% in the United Kingdom, 9% in Canada and 6.30% in Australia. Contrary to this, the countries with the lowest representation are Portugal with 0.20%, 0.30% Austria, 0.40% New Zealand and 0.50% Norway.

[Insert Table 1]

The firms of the sample operate in nine sectors, which are provided in Table 2. The TRBC economic sector classification by Thomson Reuters is used in this research in order to categorise the industries of the firms. The sectors with the greatest representation are industrials, consumer cyclicals and basic metals with 22.00%, 19.10% and 13.70%, respectively, and the lowest representation comes from telecommunications services with 3.60% and utilities with 6.30%.

[Insert Table 2]

4.2 Dependent variable

Our dependent variable is the percentage of female directors on boards. This variable is denoted by FEMALE_DIR and is calculated as the ratio between the total number of women directors on boards and the total number of directors on boards (i.e., Thams et al., 2018; Pucheta-Martínez et al., 2019).

4.3 Independent variables

The national culture is measured by using the six Hofstede cultural dimensions (Hofstede, 1980, 2001; Hofstede et al., 2010). This national culture dimension model has been used by earlier studies (Gallego-Álvarez and Ortas, 2017; Miska et al., 2018; Gupta et al., 2018) as a proxy for capturing the different cultures among countries. The six cultural dimensions are (1) power distance, defined as POW_DIST, (2) individualism versus collectivism, defined as INDIV, (3) masculinity versus femininity, labelled as MASCUL, (4) uncertainty avoidance, defined as UNC_AVOID, (5) long-term orientation, based on Confucian thinking, defined as LONG_ORIENTATION and (6) indulgence versus restraint, defined as INDULG. The six cultural dimensions vary from 0 to 100, with 50 being the halfway point. Countries with a score under 50 show a low culture score, while 50 or above is considered a high culture score. For instance, for the cultural dimension of masculinity versus femininity, a score under 50 is categorised as a feminist culture, and above 50 as a masculinist culture. Hence, a country with a score of 20 would be a feminist context but less than a country with a score of 5, because this figure is nearer to 0. All the values associated with each culture dimension are publicly available through the website of Geert Hofstede².

4.4 Control variables

We control several likely factors impacting the percentage of female directors on boards. Firstly, firm size is controlled (e.g., Azar & Drogendijk, 2016), denoted as SIZE and measured as the log of total assets of firms; return on assets (Zhang, 2011), labelled as ROA, and calculated as operating income before interests and taxes over total assets; and board size (Chouaibi et al., 2009; Haslam, et al., 2010), denoted as B_SIZE, measured as the number of directors on boards. Furthermore, CEODUALITY is also considered and is calculated as a dummy variable that takes the value 1 if the CEO of the firm also serves as chairman of the board and 0, otherwise. The institutional system of the country where firms operate is also controlled (Fainshmidt et al., 2018). We base this on a classification provided by Fainshmidt et al. (2018), which is done according to a list of countries that past research has identified as heavily reliant on markets as the organising logic. The institutional systems provided are: (1) Market-based (LME), (2) Collaborative (CME), (3) State-Led, (4) Fragmented with Fragile State, (5) Family-Led, (6) Centralised Tribe, (7) Emergent LME, (8) Collaborative Agglomerations and (9) Hierarchically Coordinated. In this research, only five out of nine of these institutional systems have been used because the remaining are not available in our sample. Specifically, we use (1) Market-based (LME), denoted by MARKET-BASED (LME), (2) Collaborative (CME), denoted by COLLABORATIVE (CME), (3) State-Led, denoted by STATE_LED, (4) Family-Led, denoted by FAMILY_LED and (5) Emergent

LME, denoted by EMERGENT_LME. These variables are measured as a dummy variable, which will take the value 1 if the firm operates in a country with this institutional system and 0, otherwise. The rule of law of a country is denoted by RULE_LAW and ranges from 0 to 10. In this case, 5 will be the half-way point. Thus, if the rule of law of a country scores a value of 2, for instance, it shows that the level of the rule of law in a country is low, while it will be higher if the score is 9. The efficiency of the judicial system is labelled by EFFICIEN_JUDIC_SYST and is measured from 0 to 10. In this case, 5 will be the half-way point as well. Therefore, if the efficiency of the judicial system scores a value of 1, for example, it exhibits that the level of efficiency of the judicial system is low, whereas it will be higher if the score is 8. Finally, year effects (YEAR_t) are also controlled by considering a set of dummy variables. Table 3 shows a description of all variables.

[Insert Table 3]

4.5 Economic model

With the following model, we will check our hypotheses:

$$\begin{aligned} \text{FEMALE_DIR}_{it} = & \beta_0 + \beta_1 \text{POW_DIST}_{it} + \beta_2 \text{INDIV}_{it} + \beta_3 \text{MASCUL}_{it} + \beta_4 \text{UNC_AVOID}_{it} \\ & + \beta_5 \text{LONG_ORIENTATION}_{it} + \beta_6 \text{INDULG}_{it} + \beta_7 \text{SIZE}_{it} + \beta_8 \text{ROA} + \beta_9 \text{B_SIZE}_{it} \\ & + \beta_{10} \text{CEODUALITY}_{it} + \beta_{11} \text{MARKETBASED}_{it} + \beta_{12} \text{COLLABORATIVE}_{it} \\ & + \beta_{13} \text{STATE_LED}_{it} + \beta_{14} \text{FAMILY_LED}_{it} + \beta_{15} \text{EMERGENT_LME}_{it} + \beta_{16} \text{RULE_LAW}_{it} \\ & + \beta_{17} \text{EFFICIEN_JUDIC_SYST}_{it} + \sum \beta_j \text{YEAR}_t + U_i + \delta_{it} \end{aligned}$$

where U_i symbolises firm-fixed or firm-specific effects (the unobservable heterogeneity), which are controlled because they may affect the proportion of female directors on boards. By taking into account firm-fixed effects, the unobservable characteristics of companies are considered, which remain unchanged over time and vary among individuals, and δ_{it} symbolises the error term.

We use the generalised method of moments (GMM) procedure for estimating the model (Arellano & Bond, 1991, 1998). In contrast to other procedures, the GMM estimator controls unobservable heterogeneity (U_i). For this reason, the GMM estimator is more efficient and consistent than other estimators. With the GMM procedure, the endogeneity can also be controlled and the estimation bias can be mitigated.

The estimation of our model with the GMM procedure will provide the following statistics: the Wald χ^2 test, the Arellano-Bond tests AR(1) and AR(2) and the Hansen test. The fitness of our model will be assessed with the Wald χ^2 test. The Arellano-Bond test AR(2) will allow us to assess if there is a second-order serial correlation in the first difference. A second-order serial correlation will not exist if

the null hypothesis of ‘no serial correlations’ is rejected. Lastly, the Hansen test of over-identifying restrictions shows us the appropriateness of the instruments employed in the model when rejecting the null hypothesis of non-correlation between the instruments and the error term.

5. Analysis of Results

5.1 Descriptive statistics and correlation

Table 4 provides the mean, the standard deviation and the 25th, 50th and 75th percentiles of all the variables. The variable female directors (FEMALE_DIR) shows that the representation of female directors on boards is, on average, 11.74%. Regarding the six cultural dimensions, from 0 to 100, power distance (POW_DIST) is, on average, 45.17, individualism (INDIV) 72.37, masculinity (MASCUL) 61.45, uncertainty avoidance (UNC_AVOID) 56.58, long-term orientation (LONG_ORIENTATION) 48.13 and indulgence (INDULG) 59.54. Comparing the six cultural dimensions, it can be observed that there are four out of six dimensions with scores higher than 50, and two out of six with scores lower than 50. This suggests that the cultural contexts of the countries in our sample are quite individualistic and their masculinity, uncertainty avoidance and indulgence go from medium to high values. On the other hand, although power distance and long-term orientation dimensions show scores below 50, these values are near 50, showing that the levels of power distance and long-term orientation are also relevant in the cultures represented in our sample. Firm size (SIZE) is, on average, 9.83 (log of total assets), return on assets (ROA) 6.39%, board size (B_SIZE) is 10.90 board members and the firm’s CEO also serves as the chairman of the board in 34% of the sample’s firms (CEO DUALITY).

According to the institutional system where firms are domiciled, 58% of the firms in the sample operate in a market-based (MARKET-BASED [LME]) institutional system, 32% in a collaborative (COLLABORATIVE [CME]), 5% in a state-led (STATE_LED), 3% in a family-led (FAMILY_LED) and 2% in an emergent LME (EMERGENT_LME). Finally, the rule of law of the countries in our sample is, on average, 9.25 out of 10 (RULE_LAW) and the efficiency of the judicial system is 9.36 out of 10 (EFFICIEN_JUDIC_SYST).

[Insert Table 4]

Table 5 presents the bivariate correlation matrix in order to explore the existence of multicollinearity. In general, an absolute correlation coefficient >0.8 among two or more explanatory variables indicates the presence of multicollinearity (Gujarati, 2009). As shown in Table 5, all pairs show values lower than 0.8. Therefore, there is no multicollinearity concern among the predictors.

[Insert Table 5]

5.2 Multivariate analysis

The findings for checking all the hypotheses are reported in Table 6. Model 1 examines the relationship between the cultural dimension of power distance and the proportion of female directors on boards. The coefficient of the power distance variable is positive, contrary to our expectation, and it is statistically significant. This result leads us to reject the first hypothesis, which suggests that the proportion of women directors on boards will be lower in countries with high levels of power distance. Our finding supports the view that companies located in contexts with a high power distance tend to increase the proportion of females in economic and political power, such as boards, in order to equal the distribution of power in institutions and organisations. This evidence is in line with Uribe-Bohorquez et al. (2019), who documented that firms domiciled in countries with higher power distance have a stronger presence of female directors on boards than if firms are located in countries with a lower level of this dimension. Gyapong and Afrifa (2019) also support this thesis. The worldwide situation about the role of women on boards has changed over the last years. Policy-makers have established a set of good governance codes and laws recommending or imposing gender quotas on corporate boards with the purpose of promoting gender diversity on boards or on top positions in firms. Society does not accept rigid hierarchies in firms and, accordingly, although power distance exists in a culture, the proportion of female directors on boards will tend to increase because board gender diversity is a corporate governance issue and, at the same time, people make decisions cognizant of their legitimacy implications (Scott, 1995). Our evidence is in contrast with Sing et al. (2002) and Farrell and Hersch (2005), who find that the presence of female directors on boards is lower in contexts where the power distance is high.

Model 2 examines the impact of an individualistic culture on the proportion of female directors on boards. The coefficient for the individualist cultural dimension is positive, as predicted, and is statistically significant. According to this, the second hypothesis cannot be rejected. Hence, our results suggest that the proportion of women directors on corporate boards is greater in societies where high levels of individualism exist. In this regard, Carrasco et al. (2015) and Uribe-Bohorquez et al. (2019) support that in individualist cultures, companies are more likely to have female directors on boards since they are more efficient than male directors. Cultural contexts characterised by patterns of individualism will be expected to have more female directors because companies tend to value individual uniqueness and diversity (Chang et al., 2017). Diverse resources from boards of directors such as the presence of female directors might be fully recognised and utilised for companies. In individualistic cultures, the individual making-decision process prevails instead of a group process. This fact allows managers the ability to appoint female directors on corporate boards without obtaining the approval of all

stakeholders. For this reason, companies operating in individualist cultures will be more likely to include female directors on boards.

In Model 3, we analyse how the cultural dimension of masculinity affects the proportion of female directors on boards. As shown in Model 3, the masculinity variable is negative, as expected, and is statistically significant. Thus, we cannot reject the third hypothesis, which posits that societies with high levels of masculinity result in a lower proportion of female directors on boards. Our evidence is consistent with Carrasco et al. (2015) and Uribe-Bohorquez et al. (2019), who document a negative association between the cultural dimension of masculinity and the presence of women directors on boards. Cultures with high levels of masculinity will be likely to make administrative decisions, will be oriented towards performance and will have competitive behaviour (Chizema et al., 2015). In contrast, societies with high levels of femininity will tend to make cooperative decisions. Accordingly, contexts with male patterns may reduce the proportion of women directors on boards because managers will not be willing to appoint female directors with cooperative behaviour. Thus, companies located in masculine societies will prefer to have male directors on boards because they have similar abilities such as ambition, assertiveness or aggressiveness, among others, in the decision-making process, as well as having a traditional point of view about women. Masculine cultures reflect gender diversity roles in a traditional and stereotyped way. In this regard, contexts where the presence of males prevails will have a lower likelihood of increasing the percentage of female directors on boards because their behaviours, abilities and stereotypes might affect negatively their appointment on boards.

In Model 4, we explore the effect of the cultural dimension of uncertainty avoidance on the presence of female directors on boards. The variable of uncertainty avoidance is negatively associated with board gender diversity, as expected, but it is not statistically significant. This finding does not support our fourth hypothesis and it cannot be accepted. This evidence suggests that uncertainty avoidance does not impact the proportion of female directors. Our results show that that the level of uncertainty avoidance in a society is not a relevant determinant of the percentage of women directors on boards. In other words, the presence of female directors on boards is not affected by cultures where uncertainty avoidance prevails. This is in contrast to Grosvol (2011), Carrasco et al. (2015) and Nguyen et al. (2017), who document that societies characterised by uncertainty avoidance tend to incorporate more female directors on their corporate boards. This is because, in their view, this cultural dimension tends to be individualist and appreciates feminine traits as important factors in including female directors on boards. It was expected that there would be a lower proportion of female directors on boards in societies with higher uncertainty avoidance because in these societies there will be more risk-sensitivity, more rules and regulations and intolerance towards the social changes. In this regard, in these communities, the role of minority classes, such as female directors, should be lower because the members of organisations who make decisions may tend to consider their presence as increasing risk and uncertainty (Simmons et al., 2012). However, we found that uncertainty avoidance cultures do not

associate women directors as a better or worse mechanism to protect themselves from the uncertainties of society.

In Model 5, we examine the association between the long-term orientation dimension and the proportion of women directors on boards. The variable of long-term orientation reports a negative and significant effect on the proportion of female directors, as expected. This result, thus, led us to not reject the fifth hypothesis, which predicts that a culture with a high long-term orientation leads organisations to appoint a lower proportion of female directors on boards, in line with the Confucian dynamic supported by Hofstede and Bond (1988) and Moulettes (2007). Societies characterised by long-term orientation are dominated by male role models. In this case, long-term orientation culture represents the extent to which a society prioritises long-term goals instead of short-term ones, adapts their traditions to modern approaches, invests in modern education to prepare for the future and in which people have important savings and the funds available for investment with long-term results. Our findings are in line with the views of Uribe-Bohorquez et al. (2019), who show that women directors sit on firms' boards domiciled in long-term orientation contexts and tend to be less efficient in their work.

In Model 6, we check the impact of indulgent cultures on the proportion of female directors on boards. The variable of indulgence exhibits a positive sign, as predicted, and it is statistically significant. It implies that more indulgent societies have a higher probability of appointing women directors. Thus, we cannot reject the sixth hypothesis. Indulgent cultures will prefer several gratifications based on freedom, happiness and a healthy life. In contrast, restraint cultures will focus on regulations and strict social norms, which will remove the gratifications of basic needs. According to Hofstede et al. (2010) and Newton (2018), the more indulgent a society is, the higher proportion of female directors in the labour force there will be because the female roles in indulgent communities are perceived wider in contrast with restraint cultures whose female roles are stricter. Firms domiciliated in indulgent contexts seem to be more engaged with the inclusion of female directors on boards because the freedom of speech and the freedom of cultural norms will result in societies with a higher acceptance of appointing women directors on boards.

Relating to the control variables, in Models 3 and 6 the institutional systems MARKET-BASED (LME) and COLLABORATIVE (CME) have a positive impact on the proportion of female directors on corporate boards. Moreover, in Model 1, the institutional system STATE-LED negatively affects the percentage of women directors on boards, and FAMILY_LED has a positive impact in Model 6. The variable of rule of law of a country (RULE_LAW) is negatively associated with the proportion of female directors on boards in Models 2, 3, 5 and 6, and the efficiency of the judicial system (EFFICIEN_JUDIC_SYST) also impacts negatively on board gender diversity in Model 6. The rest of the control variables are not statistically significant.

[Insert Table 6]

6. Conclusions and future directions

The main goal of this study is to analyse the impact of the six Hofstede cultural dimensions (power distance, individualism, masculinity, uncertainty avoidance, long-term orientation and indulgence) on the proportion of female directors on boards. This manuscript is based on institutional theory, which suggests that companies are influenced by cultural aspects that interact with their environments throughout their relations among different stakeholders. In this regard, this approach supports our thesis that the presence of women directors on boards may be affected by the cultural context where firms operate.

Our findings show that the proportion of female directors on boards is positively influenced by the power distance, individualist and indulgence cultural dimensions, and negatively by the masculinity and long-term orientation dimensions. On the other hand, the uncertainty avoidance dimension does not affect board gender diversity. Therefore, companies located in high power distance cultures as well as in individualist and indulgent cultures will be more likely to appoint female directors on their boards, while they will be less likely to be domiciled in masculine and long-term orientation contexts. However, whether a culture has a higher or lower level of uncertainty avoidance is not relevant.

The findings of our research have several implications. Firstly, our results support the premise that the culture where a firm operates should be taken into account by policy-makers and regulators when recommending or obligating a gender quota on firms, especially on boards. This may allow society to mitigate the masculine stereotypes in firms and promote the appointment of women in top positions such as board members. Secondly, we shed new light on the impact of cultural dimensions on the appointment of female directors on boards. In line with the institutional approach, most papers show the negative effects of the power distance, individualist and uncertainty avoidance cultural dimensions on board gender diversity, while our findings provide positive or insignificant results. In this regard, power distance and individualism negatively affect the percentage of female directors on boards and uncertainty avoidance does not impact it. Additionally, this study is the first, as far as we know, which evidences that the cultural dimension of indulgence has a positive impact on female directors on boards. Thus, this paper extends knowledge about the impact of the cultural dimensions of Hofstede on board gender diversity and proposes new possibilities of research for culture and corporate governance literature. We encourage other researchers to deepen the analysis of the indulgence dimension in other board gender diversity characteristics. Thirdly, our evidence may be useful for users and stakeholders, particularly those who are engaged with social concerns such as the promotion of female directors on firms' top positions. Potential investors oriented towards issues such as the role played by women on management positions might make decisions about where to invest, depending on the culture where firms operate. Finally, companies and managers interested in signalling to society and stakeholders their

commitment to social issues related to the role of female directors on boards may benefit from our evidence. Cultures with high levels of power distance, individualism and indulgence would be more appropriate contexts where firms and managers engaged with board gender diversity may operate.

This manuscript has some limitations. Firstly, this paper has used Hofstede's cultural dimensions, which have both supporters and detractors. Thus, other constructs or proxies can be used for measuring cultural contexts as an alternative to Hofstede's cultural dimensions. Another limitation involves the control variables used. Firm size and return on assets have been used, but not the level of leverage, for instance, which may impact the presence of female directors on boards. Finally, the number of years analysed may be another limitation. An extension of the years explored may be beneficial for the research in order to validate our evidence.

These limitations lead to future lines of research. Firstly, it would be interesting to analyse if the cultural context has an impact on debt policy, particularly regarding short- and long-term debt. Secondly, it would also be interesting to explore if the cultural dimensions affect firm performance or firm profitability considering the periods before and after the worldwide financial crisis.

Notes

1. Stereotypes are constituted by ideas, prejudices, attitudes, beliefs and preconceived opinions, imposed by the social and cultural environment, which are applied in general to all persons belonging to a category, nationality, ethnicity, age, sex, sexual orientation or geographical origin, among others.

2. The cultural insights website of Geert Hofstede can be accessed at <https://www.geert-hofstede.com/>

References

- Aguilera, R. V., & Jackson, G. (2003). The cross-national diversity of corporate governance dimensions and determinants. *Academy of Management Journal*, 28(3), 447–465.
- Azar, G., & Drogendijk, R. (2016). Cultural distance, innovation and export performance. *European Business Review*, 28(2), 176-207.
- Bennouri, M., Chtioui, T., Nagati, H., & Nekhili, M. (2018). Female board directorship and firm performance: What really matters? *Journal of Banking & Finance*, 88, 41–52.
- Bhagat, S., & Black, B. (2000). *Board Independence and long-term firm performance*. Working paper. University of Colorado.
- Bilimoria, D. & Piderit, S. K. 1994. Board Committee membership: Effects of sex-based bias. *Academy of Management Journal*, 37, 1453–1477.

- Bradley, F., Gao, Y., & Sousa, C. (2013). A natural science approach to investigate cross-cultural managerial creativity. *International Business Review*, 22 (5), 839-855.
- Brammer, S., Millington, A., & Pavelin, S. (2009). Corporate Reputation and Women on the Board. *British Journal of Management*, 20 (1), 17-29.
- Carrasco, A., Francoeur, C., Labell, R., Laffarga, J., & Ruiz-Barbadillo, E. (2015), Appointing women to boards: Is there a cultural bias? *Journal of Business Ethics*, 129 (2), 429-444.
- Carter, D.A., Simkins, B.J., & Simpson, W.G. (2003). Corporate governance, board diversity, and firm value. *The Financial Review*, 38, 33-53.
- Catalyst (2008). *Catalyst Census of Women Board Directors*. New York, NY: Catalyst, www.catalystwomen.org
- Catalyst (2011). Increasing gender diversity on boards: Current index of formal approaches. Catalyst, New York, www.catalystwomen.org
- Catalyst (2015). *Catalyst Census of Women Board Directors*. New York, NY: Catalyst, www.catalystwomen.org
- Chang, Y. K., Oh, W. Y., Park, J. H., & Jang, M. G. (2017). Exploring the relationship between board characteristics and CSR: Empirical evidence from Korea. *Journal of Business Ethics*, 140(2), 225-242.
- Chizema, A., Kamuriwo, D. S., & Shinozawa, Y. (2015). Women on corporate boards around the world: Triggers and barriers. *Leadership Quarterly*, 26, 1051-1065.
- Chouaibi, J., Boujelbene, Y., & Affes, H. (2009). Characteristics of the board of directors and involvement in innovation activities: A cognitive perspective. *Corporate Board: Role, Duties and Composition*, 5(3), 34-44.
- De Mooij, M., & Hofstede, G. (2010). The Hofstede model: Applications to global branding and advertising strategy and research. *International Journal of Advertising*, 29 (1), 85-110.
- Dimaggio, P. J., & Powell, W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48, 147-160.
- Fainshmidt, S., Judge, W.Q., Aguilera, R.V., & Smith, A. (2018). Varieties of institutional systems: A contextual taxonomy of understudied countries. *Journal of World Business*, 53(3), 307-322.
- Farrell, K. A., & Hersch, P. L. (2005). Additions to corporate boards: The effect of gender. *Journal of Corporate Finance*, 11, 85-106.
- Friedland, R., & Alford, R. R. (1990). Bringing society back in Symbols, practices and institutional contradictions. In W. W. Powell and P. J. Di Maggio (eds.). *The New Institutionalism in Organization Analysis*, 232-263. Chicago, IL: University of Chicago Press.
- Gallego-Álvarez, I., & Ortas, E. (2017). Corporate environmental sustainability reporting in the context of national cultures: A quartile regression approach. *International Business Review*, 2, 337-353.

- Gaspay, A., Dardan, S., & Legorreta, L. (2008). Software of the mind—A review of applications of Hofstede's theory to IT research. *Journal of Information Technology Theory and Application*, 9, 1-37.
- Griffith, D., & Rubera, G. (2014). A cross-cultural investigation of new product strategies for technological and design innovations. *Journal of International Marketing*, 22 (1), 5-20.
- Grosvold, J., & Brammer, S. (2011). National institutional systems as antecedents of female board representation: An empirical study. *Corporate Governance: An International Review*, 19, 116–135.
- Guest, P.M. (2019). Does Board Ethnic Diversity Impact Board Monitoring Outcomes?. *British Journal of Management*, 30, 53–74.
- Gujarati, D. N. (2009). *Basic econometrics*. Tata McGraw-Hill Education, New Delhi, India.
- Gul, F. A., Srinidhi, B., & Ng, A. C. (2011). Does board gender diversity improve the informativeness of stock prices?. *Journal of Accounting and Economics*, 51, 314–338.
- Gull, A. A., Nekhili, M., Nagati, H., & Chtioui, T. (2018). Beyond gender diversity: How specific attributes of female directors affect earnings management. *The British Accounting Review*, 50, 255–274.
- Gupta, V., Hanges, P. J., & Dorfman, P. (2002). Cultural clusters: Methodology and findings. *Journal of World Business*, 37, 11–15.
- Gupta, D.R., Veliyath, R., & George, R. (2018). Influence of national culture on IPO activity. *Journal of Business Research*, 90, 226-246
- Gyapong, E., & Afrifa, G. A. (2019). National Culture and Women Managers: Evidence from Microfinance Institutions Around the World. *Business & Society*, 1-44.
- Haslam, S. A., Ryan, M. K., Kulich, C., Trojanowski, G., & Atkins, C. (2010). Investing with Prejudice: The Relationship Between Women's Presence on Company Boards and Objective and Subjective Measures of Company Performance. *British Journal of Management*, 21 (2), 484-497.
- Hickson, D. J., & Pugh, D. S. (1995). *Management Worldwide: The Impact of Societal Culture on Organizations Around the Globe*. London: Penguin.
- Hillman, A. J., Cannella, A. A., & Harris, I. C. (2002). Women and minorities in the boardroom: How do directors differ? *Journal of Management*, 28, 747-763.
- Hoecklin, L. (1996). *Managing Cultural Differences: Strategies of Competitive Advantage*, Addison-Wesley, Wokingham.
- Hofstede, G. (1980). *Culture's consequences: International differences in work-related values*. Newbury Park: Sage Publications.
- Hofstede, G.H. (1983). The Cultural Relativity of Organizational Practices and Theories. *Journal of International Business Studies*, 82, 76-88.

- Hofstede, G., & Bond, M.H. (1988). The Confucius connection: From cultural roots to economic growth. *Organizational Dynamics*, 16(4), 5-21.
- Hofstede, G. (1991). *Cultures and Organizations: Software of the Mind: Intercultural Cooperation and Its Importance for Survival*. Great Britain: McGraw-Hill. 33-42.
- Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations*. Thousand Oaks: Sage Publications.
- Hofstede, G., & Hofstede, G.J. (2005). *Cultures and Organizations: Software of the Mind (2nd Edition)*. USA: McGraw-Hill.
- Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). *Cultures and Organizations: Software of the Mind (10th Edition)*. USA: McGraw-Hill.
- Iannota, M., Gatti, M., & Use, M. (2016). Institutional Complementarities and Gender Diversity on Boards: A Configurational Approach. *Corporate Governance: An International Review*, 24 (4), 406–427.
- Ismail, M., & Lu, H.S. (2014). Cultural values and career goals of the millennial generation: An integrated conceptual framework. *The Journal of International Management Studies*, 9 (1), 38–49.
- Javidan, M. & House, R. J. (2001). Cultural acumen for the global manager: Lessons from project GLOBE. *Organizational Dynamics*, 29, 289–305.
- Lai, K. M., Srinidhi, B., Gul, F. A., & Tsui, J. (2017). Board gender diversity, auditor fees and auditor choice. *Contemporary Accounting Research*, 34, 1681–1714.
- Li, J., & Harrison, J. R. (2008). National Culture and the Composition and Leadership Structure of Boards of Directors. *Corporate Governance*, 16 (5), 375-385.
- Lubatkin, M. H., Lane, P. J., Collin, S. O., & Very, P. (2007). An embeddedness framing of governance and opportunism: Towards a cross-nationally accommodating theory of agency. *Journal of Organizational Behavior*, 28, 43–58.
- Milliken, F. J., & Martins, L.L. (1996). Searching for Common Threads: Understanding the Multiple Effects of Diversity in Organizational Groups, *Academy of Management Review*, 21(2), 402–433.
- Miska, Ch., Szócs, I., & Schiffinger, M. (2018). Culture's effects on corporate sustainability practices: A multi-domain and multi-level view. *Journal of World Business*, 53(2), 263-279.
- Moulettes, A. (2007). The absence of women's voices in Hofstede's Cultural Consequences. *Women in Management Review*, 22 (6), 443-455.
- Mukazhanova, K. (2012). A cross-cultural comparison of leadership choices: commonalities and differences among female leaders in the United States, Kazakhstan and Sweden, Tesis. Presented to the Department of International Studies and the Graduate School of the University of Oregon, June 2012.

- Newton, M. E. (2018). *Gender Diversity around the World: The Role of Country Legal Regulations and Culture*. Undergraduate Honors Theses. 26. <http://scholarworks.uark.edu/econuht/26>
- Nguyen, H. T. H., Bertsch, A., Warner-Søderholm, G., & Ondracek, J. (2017). Understanding Cultural Factors which Affect Women Serving on Boards of Directors. *International Research Journal of Human Resources and Social Sciences*, 4 (1), 278-305.
- Oakley, J. (2000). Gender-based barriers to senior management positions: understanding the scarcity of female CEOs. *Journal of Business Ethics*, 27 (4), 321-334.
- Orij, R. (2010). Corporate social disclosures in the context of national cultures and stakeholder theory. *Accounting, Auditing & Accountability Journal*, 23 (7), 868–889.
- Parboteeah, K.P., & Cullen, J.B. (2003). Social Institutions and Work Centrality: Explorations beyond National Culture. *Organization Science*, 14 (2), 137-148.
- Parboteeah, K. P., Hoegl, M., & Cullen, J. B. (2008). Managers' gender role attitude: A country institutional approach. *Journal of International Business Studies*, 39, 795–813.
- Peng, Y-S., & Lin., S-S. (2009). National culture, economic development, population growth and environmental performance: The mediating role of education. *Journal of Business Ethics*, 90, 203–219.
- Pucheta-Martínez, M. C., Bel-Oms, I., & Olcina-Sempere, G. (2019). Commitment of independent and institutional women directors to corporate social responsibility reporting. *Business Ethics: A European Review*, 28(3), 290–304.
- Richardson, P. J., & Boyd, R. (2005). *Not by genes alone: How culture transformed human evolution*. Chicago: The University of Chicago Press.
- Scott, W. R. (1995). *Institutions and organizations: Foundations for organizational science*. London, England: Sage.
- Scott, W. R. (2001). *Institutions and organizations*. London: Sage Publications.
- Scott, W.R. (2008). Approaching Adulthood: The Maturing of Institutional Theory. *Theory and Society*, 37 (5), 427-442.
- Schubert, R. (2006). Analyzing and managing risks—on the importance of gender differences in risk attitudes. *Managerial Finance*, 32, 706–715.
- Sealy, R., Doldor, E., & Vinnicombe, S. (2009). Increasing diversity on public and private sector boards. Part 1: How diverse are boards and why? Cranfield School of Management Report commissioned by the UK Government Equalities Office, October, pp. 64.
- Singh, V., Kumra, S., & Vinnicombe, S. (2002). Gender and impression management: playing the promotion game. *Journal of Business Ethics*, 37 (1), 77-89.
- Simmons, A. L., Duffy, J.A., & Alfraih, H. S. (2012). Attitudes toward women managers: The influence of social dominance orientation and power distance on men in college. *Gender in Management: An International Journal*, 27 (7), 482-498.

- Su, S. (2006). Cultural differences in determining the ethical perception and decision-making of future accounting professionals: a comparison between accounting students from Taiwan and the United States. *The Journal of American Academy of Business*, 9(1), 147–158.
- Sully de Luque, M., & Javidan, M. (2004). *Uncertainty avoidance*. In J. S. House, P. J. Hanges, M. Javidan, P. W. Dorfman, & V. Gupta (Eds.), *Culture, leadership, and organizations: The GLOBE study of 62 societies* (pp. 602-653). Thousand Oaks, CA: Sage.
- Terjesen, S., Sealy, R., & Singh, V. (2009). Women directors on corporate boards: A review and research agenda. *Corporate Governance: An International Review*, 17(3), 320–337.
- Thams, Y., Bendell, B.L., & Terjesen, S. (2018). Explaining women's presence on corporate boards: The institutionalization of progressive gender-related policies. *Journal of Business Research*, 86, 130-140.
- Tsakumis, G.T. (2007). The influence of culture on accountants' application of financial reporting rules. *Abacus*, 4, 27–48.
- Uribe-Bohorquez, M. V., Martínez-Ferrero, J., & García-Sánchez, I. M. (2019). Women on boards and efficiency in a business-orientated environment. *Corporate Social Responsibility and Environmental Management*, 26(1), 82-96.
- Van Everdingen, Y.M., & Waarts, E. (2003). The Effect of National Culture on the Adoption of Innovations. *Marketing Letters*, 14 (3), 217-232.
- Vitell, S.J. (2003). Consumer Ethics Research: Review, Synthesis and Suggestions for the Future. *Journal of Business Ethics*, 43, 33-47.
- Waldman, D., de Luque, S., Washburn, N., & House, R. (2006). Cultural and leadership predictors of corporate social responsibility values of top management: A GLOBE study of 15 countries. *Journal of International Business Studies*, 37, 823–837.
- Warner-Søderholm, G., Bertsch, A., Seierstad, C., Gabaldon, P., & Huse, M. (2016), Multiple Macro Factors Which Promote Women on Boards, Conference proceedings: EQPowerEC Women on Boards Symposium, 20th June 2016, Hosted by BI Norwegian Business School – Copenhagen Business School.
- Zelechowski, D., & Bilimoria, D. (2004). Characteristics of women and men corporate inside directors in the US. *Corporate Governance: An International Review*, 12 (3), 337-342.
- Zhang, M. (2011). Firm-level performance impact of IS support for product innovation. *European Journal of Innovation Management*, 14(1), 118-132.

Table 1

Number of observations by country

Country	Observations	Percentage	Cum.
Australia	784	6.30%	6.30%
Austria	41	0.30%	6.60%
Belgium	95	0.80%	7.40%
Brazil	250	2.00%	9.40%
Canada	1,124	9.00%	18.50%
Chile	108	0.90%	19.30%
China	335	2.70%	22.00%
Denmark	113	0.90%	22.90%
Finland	138	1.10%	24.00%

France	560	4.50%	28.50%
Germany	396	3.20%	31.70%
Hong Kong	125	1.00%	32.70%
India	168	1.40%	34.10%
Ireland	170	1.40%	35.50%
Italy	133	1.10%	36.50%
Japan	1,741	14.00%	50.50%
Mexico	121	1.00%	51.50%
Netherlands	214	1.70%	53.20%
New Zealand	52	0.40%	53.60%
Norway	67	0.50%	54.20%
Portugal	29	0.20%	54.40%
Spain	209	1.70%	56.10%
Sweden	256	2.10%	58.20%
Switzerland	384	3.10%	61.30%
Thailand	95	0.80%	62.00%
United Kingdom	1,178	9.50%	71.50%
United States	3,543	28.50%	100.00%
Total	12,429	100.00%	

Table 2
Number of firms and observations by activity sector

TRBC economic sector name	Number of observations	Percentage of observations	Cum. of observations
Basic Materials	1,704	13.70%	13.70%
Consumer Cyclicals	2,374	19.10%	32.80%
Consumer Non-cyclicals	1,244	10.00%	42.80%
Energy	1,171	9.40%	52.20%
Healthcare	983	7.90%	60.10%

Industrials	2,739	22.00%	82.20%
Technology	995	8.00%	90.20%
Telecommunications services	442	3.60%	93.70%
Utilities	777	6.30%	100.00%
Total	12,429	100.00%	

Table 3

Variables description

Variables	Description
FEMALE_DIR	Proportion of female directors on boards = Total number of female directors on boards / Total number of directors on boards
POW_DIST	Power distance is one of the six culture dimensions addressed by Hofstede et al. (2010) and ranges from 0 to 100
INDIV	Individualism is one of the six culture dimensions addressed by Hofstede et al. (2010) and ranges from 0 to 100
MASCUL	Masculinity is one of the six culture dimensions addressed by Hofstede et al. (2010) and ranges from 0 to 100
UNC_AVOID	Uncertainty avoidance is one of the six culture dimensions addressed by Hofstede et al. (2010) and ranges from 0 to 100
LONG_ORIENTATION	Long-term orientation is one of the six culture dimensions addressed by Hofstede et al. (2010) and ranges from 0 to 100
INDULG	Indulgence is one of the six culture dimensions addressed by Hofstede et al. (2010) and ranges from 0 to 100
SIZE	The log of total assets
ROA	Operating income before interests and taxes over total assets
B_SIZE	Number of directors on board
CEODUALITY	Dummy variable that takes the value 1 if the CEO of the firm also serves as chairman of the board and 0, otherwise
MARKET-BASED(LME)	Dummy variable: 1 = If firms operate in a country with a market-based (LME) institutional system; 0 = Otherwise
COLLABORATIVE (CME)	Dummy variable: 1 = If firms operate in a country with a collaborative (CME) institutional system; 0 = Otherwise
STATE_LED	Dummy variable: 1 = If firms operate in a country with a State-Led institutional system; 0 = Otherwise
FAMILY_LED	Dummy variable: 1 = If firms operate in a country with a Family-Led institutional system; 0 = Otherwise
EMERGENT_LME	Dummy variable: 1 = If firms operate in a country with an emergent LME institutional system; 0 = Otherwise
RULE_LAW	This variable measures the rule of law of a country and ranges from 0 to 10
EFFICIEN_JUDIC_SYST	This variable measures the efficiency of the judicial system of a country and ranges from 0 to 10

Table 4
Descriptive analysis

Variable	Obs.	Mean	Standard Deviation	p25	p50	p75
FEMALE_DIR	12,429	11.74	11.06	0.00	11.11	18.18
POW_DIST	12,429	45.17	13.33	38.00	40.00	54.00
INDIV	12,429	72.37	21.28	51.00	80.00	91.00
MASCUL	12,429	61.45	19.24	52.00	62.00	66.00
UNC_AVOID	12,429	56.58	20.54	46.00	48.00	76.00

LONG_ORIENTATION	12,429	48.13	24.07	25.70	38.29	67.00
INDULG	12,429	59.54	14.82	43.53	68.08	68.31
SIZE	12,429	9.83	0.61	9.42	9.82	10.25
ROA	12,429	6.39	7.83	2.75	5.51	9.47
B_SIZE	12,429	10.90	3.58	9.00	10.00	13.00
CEODUALITY	12,429	0.30	0.47	0.00	0.00	1.00
MARKET-BASED(LME)	12,429	0.58	0.49	0.00	1.00	1.00
COLLABORATIVE (CME)	12,429	0.32	0.47	0.00	0.00	1.00
STATE_LED	12,429	0.05	0.21	0.00	0.00	0.00
FAMILY_LED	12,429	0.03	0.17	0.00	0.00	0.00
EMERGENT_LME	12,429	0.02	0.13	0.00	0.00	0.00
RULE_LAW	12,429	9.25	1.12	8.98	10.00	10.00
EFFICIEN_JUDIC_SYST	12,429	9.36	1.25	9.25	10.00	10.00

Mean, standard deviation and percentile 25, 50 and 75. FEMALE_DIR is the proportion of female directors on boards = Total number of female directors on boards / Total number of directors on boards; POW_DIST is the power distance, one of the six culture dimensions addressed by Hofstede et al. (2010) and ranges from 0 to 100; INDIV is the individualism, one of the six culture dimensions addressed by Hofstede et al. (2010) and ranges from 0 to 100; MASCUL is masculinity, one of the six culture dimensions addressed by Hofstede et al. (2010) and ranges from 0 to 100; UNC_AVOID represents uncertainty avoidance, one of the six culture dimensions addressed by Hofstede et al. (2010) and ranges from 0 to 100; LONG_ORIENTATION represents long-term orientation, one of the six culture dimensions addressed by Hofstede et al. (2010) and ranges from 0 to 100; INDULG represents indulgence, one of the six culture dimensions addressed by Hofstede et al. (2010) and ranges from 0 to 100; SIZE is the log of total assets; ROA is the operating income before interests and taxes over total assets; B_SIZE is the number of directors on a board; CEODUALITY is a dummy variable that takes the value 1 if the CEO of the firm also serves as chairman of the board and 0, otherwise; MARKET-BASED (LME) is measured as a dummy variable: 1 = If firms operate in a country with a market-based (LME) institutional system; 0 = Otherwise; COLLABORATIVE (CME) is a dummy variable: 1 = If firms operate in a country with a collaborative (CME) institutional system; 0 = Otherwise; STATE_LED is a dummy variable: 1 = If firms operate in a country with a State-Led institutional system; 0 = Otherwise; FAMILY_LED is a dummy variable: 1 = If firms operate in a country with a Family-Led institutional system; 0 = Otherwise; EMERGENT_LME is a dummy variable: 1 = If firms operate in a country with an emergent LME institutional system; 0 = Otherwise; RULE_LAW is the rule of law of a country and ranges from 0 to 10 and EFFICIEN_JUDIC_SYST is the efficiency of the judicial system of a country and ranges from 0 to 10.

Table 5
Correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	
FEMALE_DIR (1)	1.00																		
POW_DIST (2)	0.26***	1.00																	
INDIV (3)	0.39* **	- 0.35* **	1.00																
MASCUL (4)	- 0.32* **	0.07* **	- 0.18* **	1.00															
UNC_AVOID (5)	- 0.31* **	0.39* **	- 0.51* **	0.14* **	1.00														
LONG_ORIENTATION (6)	- 0.34* **	0.24* **	- 0.75* **	0.40* **	0.43* **	1.00													
INDULG (7)	0.30* **	- 0.62* **	0.57* **	- 0.35* **	- 0.46* **	- 0.58* **	1.00												
SIZE (8)	0.11* **	0.23* **	- 0.06* **	0.12* **	0.07* **	0.17* **	- 0.30* **	1.00											
ROA (9)	0.11* **	- 0.09* **	0.17* **	- 0.11* **	- 0.27* **	- 0.22* **	0.15* **	- 0.22* **	1.00										
B_SIZE (10)	0.10* **	0.24* **	- 0.11* **	0.07* **	0.06* **	0.15* **	- 0.28* **	0.53* **	- 0.09* **	1.00									
CEODUALITY (11)	0.04* **	0.26* **	0.24* **	0.03* **	- 0.03* **	- 0.16* **	- 0.13* **	0.14* **	0.03* **	0.10* **	1.00								
MARKET-BASED(LME) (12)	0.27* **	- 0.51* **	0.82* **	- 0.04* **	- 0.54* **	- 0.70* **	0.66* **	- 0.20* **	0.18* **	- 0.22* **	0.11* **	1.00							
COLLABORATIVE (CME) (13)	- 0.18* **	0.21* **	- 0.56* **	0.12* **	0.63* **	0.69* **	- 0.51* **	0.18* **	- 0.25* **	0.17* **	- 0.08* **	- 0.81* **	1.00						
STATE_LED (14)	- 0.12* **	0.36* **	- 0.33* **	- 0.01* **	- 0.24* **	0.15* **	- 0.34* **	0.04* **	0.09* **	0.09* **	-0.01 **	- 0.27* **	- 0.15* **	1.00					
FAMILY_LED (15)	- 0.09* **	0.28* **	- 0.26* **	- 0.08* **	0.16* **	- 0.08* **	0.03* **	0.03* **	0.031 **	0.04* **	- 0.04* **	- 0.21* **	- 0.12* **	- 0.04* **	1.00				
EMERGENT_LME (16)	- 0.07* **	0.18* **	- 0.22* **	- 0.15* **	- 0.05* **	0.02* *	- 0.15* **	0.01 **	0.04* **	-0.00 **	- 0.06* **	- 0.16* **	- 0.10** **	- 0.03* **	-0.02* **	1.00			
RULE_LAW (17)	0.30* **	- 0.41* **	0.67* **	- 0.30* **	- 0.12* **	- 0.50* **	0.43* **	- 0.12* **	0.07* **	- 0.18* **	0.14* **	0.55* **	- 0.24* **	- 0.36* **	- 0.31* **	- 0.22* **	1.00		
EFFICIEN_JUDIC_SYST (18)	0.10* **	- 0.36* **	0.49* **	0.33* **	- 0.21* **	- 0.15* **	0.32* **	- 0.04* **	0.046 **	- 0.20* **	0.08* **	0.40* **	- 0.10* **	- 0.40* **	- 0.35* **	- 0.06* **	0.50* **	1.00	

FEMALE_DIR is the proportion of female directors on boards = Total number of female directors on boards / Total number of directors on boards; POW_DIST is the power distance, one of the six culture dimensions addressed by Hofstede et al. (2010) and ranges from 0 to 100; INDIV is the individualism, one of the six culture dimensions addressed by Hofstede et al. (2010) and ranges from 0 to 100; MASCUL is masculinity, one of the six

culture dimensions addressed by Hofstede et al. (2010) and ranges from 0 to 100; UNC_AVOID represents uncertainty avoidance, one of the six culture dimensions addressed by Hofstede et al. (2010) and ranges from 0 to 100; LONG_ORIENTATION represents long-term orientation, one of the six culture dimensions addressed by Hofstede et al. (2010) and ranges from 0 to 100; INDULG represents indulgence, one of the six culture dimensions addressed by Hofstede et al. (2010) and ranges from 0 to 100; SIZE is the log of total assets; ROA is the operating income before interests and taxes over total assets; B_SIZE is the number of directors on a board; CEODUALITY is a dummy variable that takes the value 1 if the CEO of the firm also serves as chairman of the board and 0, otherwise; MARKET-BASED (LME) is measured as a dummy variable: 1 = If firms operate in a country with a market-based (LME) institutional system; 0 = Otherwise; COLLABORATIVE (CME) is a dummy variable: 1 = If firms operate in a country with a collaborative (CME) institutional system; 0 = Otherwise; STATE_LED is a dummy variable: 1 = If firms operate in a country with a State-Led institutional system; 0 = Otherwise; FAMILY_LED is a dummy variable: 1 = If firms operate in a country with a Family-Led institutional system; 0 = Otherwise; EMERGENT_LME is a dummy variable: 1 = If firms operate in a country with an emergent LME institutional system; 0 = Otherwise; RULE_LAW is the rule of law of a country and ranges from 0 to 10 and EFFICIEN_JUDIC_SYST is the efficiency of the judicial system of a country and ranges from 0 to 10. *p-value<0.1 **p-value<0.05 ***p-value<0.01.

Table 6

Multivariate analysis results of the Generalized Method of Moments

	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6
	Coef.	Coef.	Coef.	Coef.	Coef.	Coef.
	P> t	P> t	P> t	P> t	P> t	P> t
_DIR(t-1)	0.76*** (0.000)	0.77*** (0.000)	0.71*** (0.000)	0.77*** (0.000)	0.76*** (0.000)	0.76*** (0.000)
ST	0.26* (0.090)					
		0.43*** (0.004)				
			-0.32*** (0.001)			
OID				-0.33 (0.808)		
ORIENTATION					-0.31** (0.019)	
						0.46 (0.07)
	1.04 (0.580)	-0.19 (0.921)	-2.18 (0.282)	1.20 (0.556)	-1.44 (0.455)	-1.44 (0.455)
	0.08 (0.362)	0.05 (0.519)	0.04 (0.622)	0.10 (0.247)	0.37 (0.706)	-0.01 (0.979)
	0.14 (0.618)	0.17 (0.579)	0.08 (0.734)	-0.01 (0.979)	0.21 (0.414)	-0.01 (0.979)
LITY	-0.62 (0.803)	-2.60 (0.351)	-1.59 (0.471)	1.31 (0.565)	-1.09 (0.603)	-2.60 (0.351)
T-BASED(LME)	8.65	-20.18	26.45**	8.60	1.76	34.4

	(0.463)	(0.184)	(0.021)	(0.433)	(0.882)	(0.000)
COLLABORATIVE (CME)	2.34	-9.03	23.86**	5.19	12.54	39.12***
	(0.836)	(0.418)	(0.030)	(0.636)	(0.238)	(0.000)
STATE_LED	-31.69*	5.48	12.06	-20.70	-12.40	28.12***
	(0.083)	(0.733)	(0.506)	(0.184)	(0.440)	(0.000)
EMERGENT_LME	-18.31	3.89	22.24	-13.80	-13.87	54.12***
	(0.340)	(0.803)	(0.248)	(0.424)	(0.445)	(0.000)
RULE_LAW	-0.21	-3.31*	-8.81***	-3.63	-5.26***	-5.00***
	(0.930)	(0.073)	(0.000)	(0.122)	(0.009)	(0.000)
EFFICIENCY_JUDIC_SYST	-1.60	1.01	2.89	-1.47	0.13	-2.20
	(0.178)	(0.349)	(0.102)	(0.187)	(0.927)	(0.000)
Observations	Yes	Yes	Yes	Yes	Yes	
Observations	3571.75***	4203.66***	3468.98***	3529.77***	3566.36***	3912
Wald test AR(1) (z. p> z)	-14.15 (0.000)	-15.19 (0.000)	-13.56 (0.000)	-14.08 (0.000)	-14.44(0.000)	-14.32
Wald test AR(2) (z. p> z)	0.48(0.633)	0.24 (0.813)	0.14 (0.889)	0.03 (0.979)	1.78 (0.175)	2.67
Wald test (chi-square. p> chi²)	73.12 (0.344)	62.84 (0.686)	63.31 (0.670)	72.55 (0.362)	57.88 (0.554)	65.32

FEMALE_DIR is the proportion of female directors on boards = Total number of female directors on boards / Total number of directors on boards; POW_DIST is the power distance, one of the six culture dimensions addressed by Hofstede et al. (2010) and ranges from 0 to 100; INDIV is the individualism, one of the six culture dimensions addressed by Hofstede et al. (2010) and ranges from 0 to 100; MASCUL is masculinity, one of the six culture dimensions addressed by Hofstede et al. (2010) and ranges from 0 to 100; UNC_AVOID represents uncertainty avoidance, one of the six culture dimensions addressed by Hofstede et al. (2010) and ranges from 0 to 100; LONG_ORIENTATION represents long-term orientation, one of the six culture dimensions addressed by Hofstede et al. (2010) and ranges from 0 to 100; INDULG represents indulgence, one of the six culture dimensions addressed by Hofstede et al. (2010) and ranges from 0 to 100; SIZE is the log of total assets; ROA is the operating income before interests and taxes over total assets; B_SIZE is the number of directors on a board; CEODUALITY is a dummy variable that takes the value 1 if the CEO of the firm also serves as chairman of the board and 0, otherwise; MARKET-BASED (LME) is measured as a dummy variable: 1 = If firms operate in a country with a market-based (LME) institutional system; 0 = Otherwise; COLLABORATIVE (CME) is a dummy variable: 1 = If firms operate in a country with a collaborative (CME) institutional system; 0 = Otherwise; STATE_LED is a dummy variable: 1 = If firms operate in a country with a State-Led institutional system; 0 = Otherwise; FAMILY_LED is a dummy variable: 1 = If firms operate in a country with a Family-Led institutional system; 0 = Otherwise; EMERGENT_LME is a dummy variable: 1 = If firms operate in a country with an emergent LME institutional system; 0 = Otherwise; RULE_LAW is the rule of law of a country and ranges from 0 to 10 and EFFICIENCY_JUDIC_SYST is the efficiency of the judicial system of a country and ranges from 0 to 10. *p-value<0.1 **p-value<0.05 ***p-value<0.01.