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The influence of board social capital on corporate social responsibility reporting

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Abstract:	

MANUSCRIPT DETAILS

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The influence of multiple board directorships on corporate social responsibility reporting

Abstract

Purpose: The main objective of this paper is to analyze the influence of multiple directorships, as a critical component of intellectual capital of boards of directors, on CSR reporting. This study also explores the moderating effect of certain board attributes on multiple directorships.

Design/methodology/approach: Our sample is composed of Spanish listed firms in the Madrid Stock Exchange for the period 2011-2017. A dynamic panel data model based on the Generalized Method of Moments (GMM) is employed.

Findings: Relying on a resource dependence view, our results highlight an ambiguously positive association between multiple directorships and the level of CSR reporting. In particular, this relationship is positively moderated by both board size and gender diversity.

Research limitations/implications: These findings contribute to academic debates concerning the value of board members intellectual capital. In particular, we emphasize the importance of board social capital, as well as the need to consider the context in which directors make decisions.

Practical implications: This evidence may prove helpful to firms when configuring the board of directors, and for regulators and professionals when refining their legislations and recommendations.

Originality: To the best of the authors` knowledge, this is the first study that empirically analyzes the impact of an important element of board intellectual capital, such as multiple directorships, on CSR reporting, which has become crucial in financial markets.

Key Words: board intellectual capital, board social capital, multiple directorships, CSR reporting, board size, gender diversity.

Research Paper

1. Introduction

This paper aims to provide an in-depth analysis of the influence of a particular element of intellectual capital of boards of directors, such as multiple board directorships, on CSR reporting. Multiple directorships remain an important component of board social capital that may improves the relations between a firm and its stakeholders, and take place when a board member of a firm sits on the board of directors of another firm (Berezinets et al., 2016)[1]. Specifically, the objective of this study is twofold. First, we examine the effect of the number of external board directorships on the level of CSR reporting. Second, we analyze how certain board characteristics moderate the influence of multiple board directorships on CSR reporting. The topic is timely and relevant for a number of reasons.

On the one hand, over the last few years, firms have been coming under ever-increasing pressure to report information on corporate social responsibility (CSR) practices, which have become crucial for stakeholders when taking their decisions (Arvidsson, 2011; Arayssi et al., 2016). CSR information may even affect firm valuation (Ioannou and Serafeim, 2015), investments decisions (Ioannou and Serafeim, 2019), corporate reputation (Odriozola and Baraibar-Díez, 2017), and the cost of finance (Cheng et al., 2014). CSR reporting has thus become a key business strategy in financial markets and has been included in the agenda of regulators and professional bodies alike (Directive 2014/95; KPMG, 2017). As a result, academics are taking an ever-closer look at the potential determinants of CSR reporting. Boards of directors prove particularly decisive when it comes to developing sustainable business strategies, and examining the association between boards of directors and CSR reporting has become a pivotal topic in recent research, especially when bearing in mind recent governance failures as well as social and environmental excesses (Jain and Jamali, 2016; Arayssi et al., 2020). Nonetheless, although intellectual capital is likely to be a strategic resource for improving sustainable development of firms (Alvino et al., 2020), empirical evidence on the influence of multiple directorships, as a source of intellectual capital, on CSR reporting is lacking.

On the other hand, the influence of board intellectual capital on corporate strategy remains relevant for academics, policy-makers, and professionals alike. In particular, interlocking directorates have been the subject of intense debate for regulators (European Commission, 2011) and practitioners (Institutional Shareholder Services, 2020), who suggest that an excessive number of directorships enhances the busyness of boards, which might prove detrimental to corporate decision quality. Furthermore, the issue concerning boards' busyness has recently been addressed by national codes of corporate governance in a number of countries (i.e. Australia, Canada, France,

[1] In addition to multiple directorships, the literature has also employed the term "interlocking directorates" to refer to this issue.

Germany, Italy, Japan, Spain, the United Kingdom, and the United States, among others). In addition, academics have also suggested that multiple directorships may make boards busy and reduce their effectiveness (Fich and Shivdasani, 2012; Bravo and Reguera-Alvarado, 2018), although empirical evidence concerning what effect multiple directorships might have on specific corporate decisions remains quite limited and, in the context of CSR, research is still very scarce. Finally, despite being theoretically evident, there is minimal empirical evidence concerning whether, and how, certain board attributes might interact with one another in their links to CSR (Endrikat et al., 2020). Indeed, recent studies have emphasized the need to consider the board of directors as a group rather than as a piecemeal, and have called for further research on the interactions between board attributes in an effort to provide more conclusive evidence on how boards influence CSR so that policy-makers and practitioners can make their legislations and recommendations more effective (Jain and Jamali, 2016).

As regards CSR decisions, the board's cognitive and behavioral dimensions are likely to prevail over its monitoring abilities (Barka and Dardour, 2015), which has led to the resource dependence theory receiving much attention in the CSR field (Chan et al., 2017; Al-Dah, 2019). Under this perspective, which assumes that multiple directorships may bring valuable intellectual capital to the board so as to successfully implement CSR policies, recent research has suggested that interlocking directorates can have positive effects on CSR performance (Ortiz de Mandojana and Aragon-Correa, 2015). Nevertheless, despite the importance of CSR reporting, the literature regarding the impact of multiple directorships on CSR reporting remains extremely scarce. Two closely related papers (Zou et al., 2019; Sun et al., 2020) focus on the Chinese context and explore whether a firm is more likely to publish a stand-alone CSR report when it has an interlink to another firm that publishes such a report.

Our paper differs in motivation from previous literature in three ways. First, our study extends this research by focusing on the total number of outside directorships (not only specific links between firms) in order to respond to the aforementioned regulatory, professional, and academic debates on the issue. Second, our paper also fills the research gap by analyzing the effect of multiple directorships on a more global measure for CSR reporting strategy, considering not only the publication of CSR reports but also compliance and adherence to GRI guidelines and the external assurance of CSR information. This is important, since CSR reports have become common practice in many countries, and both GRI guidelines and external assurance have become a key attribute of CSR reporting (García-Sánchez et al.,2019). Third, we provide a more in-depth analysis of the influence of multiple directorships on CSR reporting by examining the moderating effect of board size, board independence, and board gender diversity. In summary, we aim to answer two questions that have been overlooked in the literature on CSR reporting: 1) do the number of interlocks matter? 2) how are the CSR reporting decisions made by boards with multiple directorships influenced by the characteristics of the board they sit on?

Our sample is composed of Spanish listed firms in the Madrid Stock Exchange for the period 2011-2017. A unique set of data is used, since the information on board members is hand-collected by examining 1,252 directors' biographies. Individual analysis of each biography enables us to reliably identify any type of board member directorship, which offers an advantage vis-à-vis the data generally provided by global databases. Our results point to a positive association between multiple directorships and the level of CSR reporting. In particular, this relation remains positive when board members hold two or more outside directorships, and therefore the presence of a negative busyness effect is ruled out. In addition, this relationship between multiple directorships and CSR reporting is positively moderated by both board size and gender diversity.

Our study thus offers several key contributions. First, our findings contribute to intellectual capital literature and corporate governance literature by highlighting that board members who hold multiple directorships provide crucial intangible resources to a firm for strengthening CSR reporting practices. Thus, we extend the evidence concerning the effects of interlocking directorates, as our paper confirms that multiple directorships exert a significant influence on non-financial outcomes. Our evidence suggests that interlocking directorates make boards more aware of the importance of CSR information and encourage them to promote CSR reporting, regardless of the number of board directorships. Our findings therefore complement previous evidence by highlighting that the provision of resources prevails over the busyness effect in decisions related to CSR reporting. Second, given the relevance of CSR reporting, our evidence stimulates the professional and regulatory debates concerning multiple directorships and its value as providers of valuable intellectual capital, which would help to fine tune legal proposals or endorsements on the matter. Third, we complement previous studies by indicating that the interaction between board attributes remains crucial in terms of gaining a clearer insight into what influence directors have on CSR reporting. Our results highlight the fact that the board context plays an important moderating role in the relation between multiple directorships and CSR reporting. In particular, our evidence implies a step forward in the literature by highlighting that board size and gender diversity may stimulate the discussion and inclination towards CSR reporting practices within the board, and intensify the effect of multiple directorships.

The structure of the paper is as follows. In the next section, the theoretical framework is reviewed and the main hypotheses are formulated. Section 3 explains the sample, the variables, and the method employed in the empirical analysis. Section 4 reports the main results, while section 5 summarizes the main conclusions of our study.

2. Theoretical framework and hypothesis development

Boards of directors are the central decision-making authority in a firm, and stand particularly responsible for sustainable challenges demanded by stakeholders (Barakat et al., 2015; Tejedo-Romero and Araujo, 2020). For this reason, a number of papers have explored the relationship between board characteristics and CSR reporting. In particular, prior research emphasizes that board social capital is an important element of intellectual capital of boards of directors and may prove vital in decision-making processes (Johnson et al., 2013; Berezinets et al., 2016) and, among the different characteristics related to social capital, analyzing the effects of interlocking directorates has lain at the core of recent studies (Caiazza and Simoni, 2019). Indeed, directors' personal ties may affect the behavior and functioning of directors and boards as a whole, and are likely to prove crucial to firms' CSR engagement (Jain and Jamali, 2016; Ramon-Llorens et al., 2019).

Although empirical evidence is still far from definitive, several studies have reported a positive association between multiple directorships and certain CSR activities (Walls and Hoffman, 2013; Ortiz de Mandojana and Aragon-Correa 2015; Glass et al., 2016; Al-Dah, 2019). As regards CSR reporting, empirical evidence is limited to the impact of specific connections between firms on the disclosure of CSR reports (Zou et al., 2019; Sun et al., 2020). However, by examining multiple directorships we are able to offer a broader view of the issue. Regardless of any specific connections, regulators and professionals have expressed their concern about the number of directorships held by board members. Moreover, since CSR reports have become widespread but may be insufficient for distinguishing CSR reporting practices among firms (KPMG, 2017; Axjonow et al., 2018), considering additional CSR reporting initiatives may prove necessary in order to gain a broader picture of the effect of interlocking directorates on CSR reporting. In this sense, financial markets are increasingly pressuring for superior reporting practices to be implemented. In addition to CSR reports, this also requires adopting Global Reporting Initiative (GRI)[2] guidelines (García-Sánchez et al., 2019), a high degree of adherence to these guidelines (Miras-Rodríguez et al., 2020), and the external assurance of CSR information (Axjonow et al., 2018). Yet despite the aforementioned debates on multiple directorships, and the expectations concerning CSR reporting practices, the impact of multiple directorships on CSR reporting remains unexplored. Our paper fills this research gap by analyzing how the level of CSR reporting (publication of stand-alone CSR reports, compliance with GRI guidelines, level of adherence with GRI guidelines, and external assurance of information) is influenced by the number of outside directorships held by board members.

[2] The GRI are the most widely used CSR reporting standards (García-Sánchez, et al., 2019).

From a theoretical point of view, the board's influence on CSR decisions has generally been explained by two main groups of theories (Barka and Dardour, 2015; Frynas and Yamahaki, 2016): on the one hand, theories related to internal drivers of CSR, which are based on the controlling role played by boards and which mainly focus on an agency perspective; and on the other hand, theories related to external drivers of CSR, which emphasize directors' relationships with external agents and rely on the board's cognitive and behavioral dimensions. The latter, and particularly the resource dependence theory, has proven better for investigating board behavior and decisions (Lamb and Roundy, 2016), especially those related to CSR (Frynas and Yamahaki, 2016).

With regard to interlocking directorates, arguments derived from the resource dependence theory have come very much to the fore (Al-Dah, 2019). This theory considers that a firm is an open system conditioned by its connections with the external environment, and the theory suggests that directors' interactions with other firms may bring key resources to boards (Pfeffer and Salancik, 1978). Boards of directors are therefore crucial to the creation of a firm's links with its business environment (Adams et al., 2010), which may improve advising and legitimacy (Hillman and Dalziel, 2003). Through external connections, directors may become a source of competitive advantage, thereby providing better strategic reasoning and vision (Ortiz de Mandojana and Aragon-Correa, 2015). In the context of CSR, resource dependence theory finds some connection with stakeholder arguments, and boards are felt to play a vital role as providers of resources for stakeholder management, since successful implementation of CSR practices involves a broad understanding of various stakeholders' concerns and needs (Chan et al., 2017). In this line, multiple directorships may help the board to establish the necessary links with the firm's environment so as to understand and respond to its demands regarding CSR practices (Guerrero-Villegas et al. 2018).

Specifically, CSR reporting has become key to mitigating environmental uncertainty and, as such, is in great demand in financial markets. In this sense, the literature suggests that connections between firms facilitate the imitation of corporate policies, and in particular those which are subject to greater scrutiny and demand (Chan et al. 2017). Hence, multiple directorships can help firms to secure critical resources to imitate and adopt superior CSR corporate practices (Lamb and Roundy, 2016; Al-Dah, 2019), including those related to CSR reporting. Board member connections are likely to provide a unique opportunity for directors to observe the CSR strategies of other firms and to exchange information regarding trends in CSR reporting (Zou et al., 2019; Sun et al. 2020). Directors who sit on more than one board obtain greater access to CSR issues (Jain, Kenely, and Thomson, 2015). In addition, multiple directorships also enable board members to gain experience about environmental and social challenges (Ramon-Llorens et al., 2019) and to manage information regarding environmental and social standards, regulations and stakeholders' expectations (Ortiz de Mandojana and

Aragon-Correa, 2015). Interlocking directorates therefore become an effective way for directors to acquire important knowledge and skills for strengthening discussions concerning CSR policies and for promoting CSR reporting strategies (Simoni and Caiazza, 2013). To sum up, multiple directorships are likely to increase boards' awareness and capacity to enhance the level of CSR reporting to respond to society's expectations. In line with the above discussion, the arguments from the resource dependence theory unambiguously emphasize that multiple directorships lead to board members accumulating valuable resources to manage CSR reporting policies. Therefore, we assume that an increased number of directorships will lead to greater encouragement to enhance the level of CSR reporting. We thus formulate the following hypothesis:

H1: The number of outside directorships positively influences CSR reporting.

Directors, however, do not work alone. The board acts as a team and, therefore, analyzing board interactions can prove vital vis-à-vis enhancing our knowledge of boards (Pugliese et al., 2014). Specifically, board attributes may significantly moderate the way in which individual director characteristics affect CSR decisions (Jain and Jamali, 2016; Oh et al., 2018; Bravo and Reguera-Alvarado, 2019). In particular, previous research has highlighted that certain factors, such as board size, board gender, and board independence, play an important role in CSR reporting practices (Guerrero-Villegas et al., 2018; Endrikat et al., 2020). These board attributes are thus expected to condition the way in which multiple directorships influence CSR reporting. The relationship between these three board characteristics and CSR is explained below.

Board size and CSR reporting

Previous literature has traditionally considered board size as a stimulating factor of CSR reporting (Jizi, 2017; Husted and Sousa-Filho, 2019). Boards need to establish CSR agendas and CSR reporting in order to respond to society's demands, and paying sufficient attention to CSR decisions may require the involvement of a large number of directors (Halme and Huse, 1997). In this sense, large boards are better able to organize and divide tasks among directors, including monitoring CSR policies (Barakat et al., 2015). Furthermore, a greater number of directors can overcome the limitation of smaller boards regarding the workload of individual members, since a small board might have more difficulties in dealing with CSR challenges, which can be considered as extra work (Jizi, 2017). The advantages of larger boards when implementing CSR reporting policies may also be explained because these boards bring a broader range of resources (Abeysekera, 2010), such as different backgrounds, knowledge, and links with the external environment, which are likely to improve the quality of the advice offered by directors (Guest, 2009). In this regard, larger boards are expected to be in a better position to connect the firm to its environment and to be more aware of society's information needs (Jizi, 2017). In particular, this may result in more productive discussions on CSR issues (Haji, 2013) and more orientation towards CSR practices (Giannarakis, 2014).

However, from a theoretical point of view, an excessive number of directors may complicate promoting CSR practices within the boardroom for several reasons (Arayssi et al., 2016). Large boards tend to display a more disperse power structure, whereas boards containing a smaller number of members are more likely to exhibit a more cohesive framework (Yoshikawa and Phan, 2003). This argument suggests that small boards lead to better director coordination and greater engagement. In this regard, smaller boards can create a suitable atmosphere that helps to make board members more responsible and dedicated, which would increase accountability towards social and environmental issues (Arayssi et al., 2016). In addition, smaller boards are likely to take less time over discussions and decisions, thereby reducing conflicts and achieving a consensus, which favors the implementation of CSR initiatives (Guerrero-Villegas et al., 2018). Consequently, we assume that the effect of multiple directorships is moderated by board size, which leads us to formulate the following hypothesis:

H2: The association between multiple directorships and CSR reporting is moderated by board size.

Board independence and CSR reporting

Prior research has also suggested that board independence may have a positive effect on CSR reporting (Khan, 2010; Liao et al., 2015), assuming that independent board members can improve board effectiveness by maximizing stakeholder interest (De Andrés and Vallelado, 2008). Independent directors can encourage the board to engage in ethical behavior (Ibrahim et al., 2003) and adopt regulations and societal trends related to reporting practices (Rao and Tilt, 2016). In particular, independent directors may act as accountability mechanisms for the various stakeholders and are therefore likely to be more aware of the importance of CSR reporting for promoting transparency (Cheng and Courtenay, 2006). These directors can be better connected with the firm's environment and bring fresh insights to the board concerning environmental and social issues (Galbreath, 2010). They may also display a greater ability to manage external contingencies, which puts the board in a better position to provide a higher degree of transparency and CSR reporting initiatives (Fernández-Gago et al., 2016).

In contrast, the association between board independence and CSR may well be neutral or even negative (Haniffa and Cooke, 2002; Cuadrado-Ballesteros et al., 2015). In particular, independent directors may be reluctant to increase CSR reporting levels due to reputational concerns (Haniffa and Cooke, 2002). Independent directors, who might lack an in-depth knowledge of the CSR measures taken by a firm, may therefore avoid playing a proactive role in promoting CSR reporting practices in order to minimize reputational risks (Guerrero-Villegas et al., 2018). In addition, board independence may not have a positive impact on CSR reporting if large shareholders take control over independent directors and hinder the latter's ability to oversee reporting practices (Gallego-Álvarez and Pucheta-Martínez, 2020). As a result, we assume that the effect of multiple directorships is moderated by board independence, leading us to formulate the following hypothesis:

H3: The association between multiple directorships and CSR reporting is moderated by board independence.

Board gender diversity and CSR reporting

Researchers have generally supported the notion that women directors positively influence CSR reporting (Rao and Tilt, 2016; Bravo and Reguera-Alvarado, 2019). In this sense, there is consensus vis-à-vis women's greater orientation towards environmental and social issues (Kaijser and Kronsell, 2014), and different perspectives suggest that gender board diversity may be an important driver of CSR reporting. In this regard, women are likely to provide the board with a wide set of resources, such as skills, access to key constituents, and different leadership experiences (Quintana-García and Benavides-Velasco, 2016). This enables boards to better understand the concerns and demands from the environment. In particular, women tend to be more empathic and socially sensitive (Nielsen and Huse, 2010), as well as closer to market information needs (Larrieta-Rubín de Celis et al., 2015). Therefore, female directors are more likely to focus on issues and policies related to social responsibility (Harjoto and Rossi, 2019), and gender-diverse boards may display a greater inclination towards CSR initiatives (Katmon et al., 2019). Moreover, female directors have a more communal style of leadership and tend to be more participative and proactive (Tejedo-Romero et al., 2017), which stimulates discussions concerning CSR issues and which may encourage the board to promote CSR reporting practices.

Nevertheless, some studies have questioned the effect of female directors on CSR reporting (Giannarakis, 2014; Husted and Sousa-Filho, 2019). In particular, gender diversity might not have a positive effect on CSR when women are considered as tokens and face important minority problems that could significantly hinder their ability to participate in discussions within the board (Elstad and Ladegard, 2012). In this case, women can have difficulty in playing an active role in the board to promote CSR practices (Konrad et al., 2008). In addition, gender diversity can also increase heterogeneity within the board, thereby creating significant subgroups and reducing team cohesion (Zhu et al., 2014). In this regard, female directors might be seen as hindering the board's ability to make decisions (Mensi, 2014), thus minimizing the implementation of increased CSR reporting initiatives. Accordingly, we assume that the effect of multiple directorships is moderated by board gender diversity, and we formulate the following hypothesis:

H4: The association between multiple directorships and CSR reporting is moderated by board gender diversity.

3. Empirical design

3.1. Sample

Our final sample is composed of 530 observations from firms listed on the Madrid Stock Exchange for the period 2011-2017. This sample provides an interesting scenario because of the particular characteristics of Spanish firms, which have a unitary board system and voluntary good governance practices (Manzaneque et al., 2016), and which are subject to intense pressure to enhance CSR reporting (Odriozola and Baraibar-Diez, 2017). Data on board members was manually gathered from the biography of each director, which was extracted from the firms' annual reports or from corporate governance reports and, if necessary, by examining other public sources such as Bloomberg Business Week and the official websites of other companies where these directors served. Specifically, we researched the biographies of 1,252 board members. The information for designing our CSR reporting variable was obtained from the GRI database or by analyzing firms' websites, if necessary. Finally, financial data and other corporate governance information were extracted from Datastream.

3.2. Variables

Dependent variable: CSR reporting

The dependent variable of our study captures the level of CSR reporting (CSR reporting) by creating an index, which is calculated by aggregating several items (Moneva et al., 2007; Miras-Rodríguez et al., 2020): (1) disclosure of CSR information in a stand-alone report; (2) compliance with GRI guidelines; (3) presentation of "in accordance" level, and (4) presence of external assurance. These items are dummy variables and, therefore, the reporting index ranges from 0 to 4.

Explanatory variables and control variables

Our main explanatory variable, multiple directorships (DIRECTORSHIPS), is measured by the average number of outside boards on which directors sit in the same year (Hillman et al., 2011; Bravo and Reguera-Alvarado, 2018).

Moreover, our three moderating variables are also designed in line with previous research. Board size (BSIZE) is calculated by the total number of board members (Arayssi et al., 2020; Gallego-Álvarez and Pucheta-Martínez, 2020). Board independence (BINDEP) is measured by the proportion of independent directors within the board (Cuadrado-Ballesteros et al., 2015; Husted and Sousa-Filho, 2019). Gender diversity (BGENDER) is computed as the proportion of female directors on the board (Arayssi et al., 2016; Katmon et al., 2019).

Consistent with prior literature (Bravo and Reguera-Alvarado, 2019), a set of control variables is also considered due to their potential influence on CSR reporting. As regards board-related variables, board tenure and board activity are included in the empirical analysis. Board tenure (BTENURE) is computed as the average number of years board members spent on a particular board. Finally, board activity (BMEETINGS) refers to yearly board meeting frequency. In addition, several firm-level variables are also considered: firm size, profitability, and leverage. Firm size (ASSET) is calculated as the logarithm of total assets; profitability (ROA) is computed as the return on total assets; and leverage (LEV) is measured as the ratio of total debt to total assets. Finally, we use a set of year and sector dummies to control for time and industry effects, respectively.

Table 1 provides a summary of the variables and their definitions.

[Insert table 1 about here]

3.3. Empirical model

The two-step dynamic panel data model Generalized Method of Moments (GMM) proposed by Arellano and Bond (1991) is employed to test the hypotheses formulated. One common concern in research into boards of directors and CSR reporting practices relates to potential endogeneity between the two variables, which can result in reverse causality relations or unobserved variables (Jain and Jamali, 2016; Guerrero-Villegas et al., 2018). The GMM procedure allows us to address potential endogeneity problems by using the lagged right-hand-side variables as instruments (Blundell and Bond, 1998). Although there are several methodological options for addressing endogeneity problems, GMM is considered to be consistent and efficient since it also allows unobservable heterogeneity to be controlled for (Ramon-Llorens, et al., 2019). The consistency of GMM estimates depends on both the absence of second-order serial correlation in the first-difference residuals and on the validity of the instruments, which have been confirmed by both the m2 statistic and the Sargan test.

The general model used to test our hypotheses is presented in Equation 1:

$$\text{CSR reporting}_{i,t} = \beta_0 + \beta_1 \text{CSR reporting}_{i,t-1} + \beta_2 \text{DIRECTORSHIPS}_{i,t} + \beta_3 \text{BSIZE}_{i,t} + \beta_4 \text{BINDEP}_{i,t} + \beta_5 \text{BGENDER}_{i,t} + \beta_6 \text{BTENURE}_{i,t} + \beta_7 \text{BMEETINGS}_{i,t} + \beta_8 \text{ASSET}_{i,t} + \beta_9 \text{ROA}_{i,t} + \beta_{10} \text{LEV}_{i,t} + \sum_{J=1}^{6} \beta_{11} \text{YEAR}_{i,t} + \sum_{J=1}^{6} \beta_{12} \text{SECTOR}_{i,t} + \varepsilon_{it}$$

Equation [1]

where β0 is the intercept and βi is the coefficient of each independent variable. The sub-index i identifies the individual, and the sub-index t identifies the time, and εit, the error term.

4. Empirical results

4.1. Descriptive statistics and bivariate correlations

Table 2 provides the descriptive statistics of all the variables. The average value for the CSR reporting index is 1.231. Many firms in our sample opt to disclose CSR information in the annual reports, and only the largest firms in the Madrid Stock Exchange publish a stand-alone CSR report (Miras-Rodríguez et al., 2020). As regards multiple directorships, the mean number of outside directorships of board members is around 1.42. These findings are very similar to those reported by other previous studies (Hillman et al., 2011; Bravo and Reguera-Alvarado, 2018). Moreover, the board is composed of nearly eleven members on average, the vast majority of whom are independent directors (around 82%). Women are clearly underrepresented, since female directors only average 13.1% of total board membership. In addition, the board meets around ten times a year and the average value for board tenure is only 6.4 years.

[Insert table 2 about here]

Table 3 reports the correlation matrix among the variables. In particular, the results show a positive association between CSR reporting and directorships. Furthermore, and as expected, several independent variables are also correlated with CSR practices. The literature generally considers multicollinearity to be a problem if the correlation between the independent variables is above 0.7 (Cooper and Schindler, 2003). Although the correlation coefficients are below 0.7, we compute the variance inflation factor (VIF) to test for the lack of multicollinearity in our estimates, and we find that VIF values are all below 2. Given that lack of multicollinearity is broadly accepted when VIF values are below 5 (Studenmund, 1997), we deem that multicollinearity is not an issue in our sample.

[Insert table 3 about here]

4.2. Main analysis

With regard to hypothesis H1, the results of the multivariate analysis are presented in Table 4. Specifically, columns 1-7 reflect the association between CSR reporting and several variables to capture multiple directorships: the average number of outside directorships (column 1), the quadratic value of the average number of outside directorships (column 2), and individual measures to test the effect on CSR reporting of a specific number of outside directorships (columns 3-7). In line with the theoretical arguments, results show a positive and statistically significant association between multiple directorships and CSR reporting (Column 1). This positive association is also confirmed when the quadratic measure of multiple directorships is included (column 2). Results suggest that higher values of directorships positively influence the level of CSR reporting, and rule out the presence of a negative busyness effect for higher levels of interlocking directorates.

By way of an in-depth analysis of the previous results, we considered the association between CSR reporting and the percentage of directors who sit on one, two, three, and four or more outside boards (columns 3-7). In this regard, there is no significant association between multiple directorships and the level of CSR reporting if the number of outside directorships is only one. However, when directors sit on an average of two or more outside boards, multiple directorships have a clear positive and significant effect on CSR reporting. Overall, these findings lead us to accept hypothesis H1.

In addition, our results are also consistent with theoretical predictions about the moderating variables, which determine the level of CSR reporting. Specifically, our results tend to indicate that the level of CSR reporting is positively influenced by board size and gender board diversity, and negatively conditioned by board independence. As for the control variables, our results generally reveal that CSR reporting is negatively related to board tenure and positively associated to firm size and leverage.

[Insert table 4 about here]

In order to test hypotheses H2, H3, and H4, Table 5 presents the results for the moderating effect of board characteristics (size, independence, and gender) in the relationship between CSR reporting and multiple directorships. First, our findings show that board size positively moderates the association between multiple directorships and CSR reporting. Therefore, the impact of interlocking directorates on CSR reporting is strengthened in larger boards, thus providing support for hypothesis H2. However, our results fail to find a significant moderating effect of board independence on the relation between multiple directorships and CSR reporting: hence hypothesis H3 cannot be accepted. Finally, gender diversity also appears to be an important moderating factor in the relationship between multiple directorships and CSR reporting. Female directors lead to a more intense influence of interlocking directorates on CSR reporting, as suggested in hypothesis H3.

[Insert table 5 about here]

4.3. Discussion

The effect of the board of directors on CSR practices has become a controversial issue in recent research. This paper seeks to explore the relationship between multiple directorships, as a key component of boards intellectual capital, and the level of CSR reporting. In particular, the advantages and disadvantages of multiple directorships have been increasingly discussed by regulators, professionals, and academics alike. Our results extend previous evidence on the effects of intellectual capital of boards and also contribute to the literature on corporate governance and environmental studies.

On the one hand, and consistent with previous research (Barka and Dardour, 2015; Ortiz de Mandojana and Aragon-Correa, 2015; Glass et al., 2016; Al-Dah, 2019), our evidence reinforces the idea regarding the impact of interlocking directorates on CSR decisions. In particular, our findings herald a step forward vis-à-vis other studies which suggested that specific director links may have an effect on the publication of CSR reports (Zou et al., 2019; Sun et al., 2020). Unlike these studies, we focus on the total number of outside directorships and on a more comprehensive measure of CSR reporting. Specifically, we highlight that boards with multiple directorships play an active role in enhancing CSR reporting initiatives, including the disclosure of CSR reports, as well as the adoption of and adherence to GRI guidelines, and the external assurance of CSR information. Compliance with GRI guidelines and CSR assurance can have an important effect on corporate reputation, firms' access to finance, or analyst coverage (Casey and Grenier, 2015; Odriozola and Bariabar-Díez, 2017; García-Sánchez et al., 2019). Therefore, our evidence is particularly relevant given the repercussion that these CSR reporting initiatives have on financial markets.

We therefore complement previous evidence concerning the relation between multiple directorships and reporting policies (Baatour et al., 2017; Bravo and Reguera-Alvarado, 2018). As predicted, multiple directorships help boards to deal with the environmental and social challenges facing firms (Ramon-Llorens et al., 2019), and lead to an enhanced level of CSR reporting, which can be explained for several reasons. First, directors with multiple appointments are better connected and hence are more likely to be aware of CSR reporting trends and stakeholders' demands (Zou et al., 2019). Second, in line with our theoretical expectations, interlocking directorates make boards better prepared for CSR reporting decisions since they provide valuable resources for exchanging information in order to adopt superior CSR reporting initiatives (Lamb, 2016; Al-Dah, 2019). Third, implementing CSR reporting practices is an immediate and inexpensive way to follow disclosure trends in the markets (Miras-Rodríguez et al., 2020), and hence directors with multiple appointments can more easily encourage and convince boards to improve these reporting initiatives.

Furthermore, our results emphasize that the effect of multiple directorships on CSR reporting remains significant when the number of outside directorships is two or more. Some previous evidence has suggested that multiple directorships can eventually lead to a deterioration in board financial decisions, which require greater internal control by the board (Fich and Shivdasani, 2012; Lei and Deng, 2014; Bravo and Reguera-Alvarado, 2018). Even policy-makers and professional bodies (European Commission, 2011; Institutional Shareholder Services, 2020) have expressed their concern about an increased number of directorships potentially worsening certain decision-making processes within a board. Nonetheless, our research demonstrates that the effect of multiple directorships on CSR reporting decisions is unambiguously positive. This evidence confirms that an increased number of directorships does not necessarily lead to harmful busyness effects within boards. Consequently, the term "busyness" should not be generalized, since in some cases, the benefits of multiple directorships can outweigh the disadvantages. Therefore, our paper extends the academic debate about whether multiple directorships add value to firms (Ferris et al., 2020), and may help to complement the thus far controversial results by highlighting that interlocking directorates may prove to be especially beneficial for CSR specific strategies.

Our findings are also consistent with the recent stream of research which supports the idea that contextual approaches are required to better comprehend the influence of boards of directors. In the CSR field, a few articles have studied whether the association between interlocking directorates and CSR activities may be moderated by firm characteristics (Ortiz de Mandojana and Aragon-Correa, 2015; Zou et al., 2019) and the institutional context (Sun et al., 2020). In particular, we extend previous literature by analyzing how certain board characteristics (board size, board independence, and gender diversity) moderate the relation between multiple directorships and CSR reporting. Our findings are generally consistent with theoretical expectations and reinforce the evidence concerning the importance of examining the interaction between board attributes (Oh et al., 2018; Bravo and Reguera-Alvarado, 2019; Endrikat et al., 2020). Specifically, our results show that board size and board gender diversity strengthen the influence of multiple directorships on CSR reporting. First, in addition to other studies which document a positive relationship between board size and CSR reporting (Jizi, 2017; Husted and Sousa-Filho, 2019), our evidence suggests that larger boards enable directors with multiple appointments to exert a greater influence on CSR reporting. Larger boards are likely to pay closer attention to CSR stakeholders' demands and to organize the implementation of CSR initiatives (Barakat, Pérez, and Ariza, 2015). Moreover, having a greater number of directors tends to bring more resources to the board and more links to its environment (Abeysekera, 2010). Therefore, board members with multiple directorships might have more time to discuss and promote CSR issues in larger boards, which will also become more receptive to intensifying CSR policies. Second, our findings complement previous research on the positive effect of board gender diversity on CSR reporting (Arayssi et al., 2016; Rao and Tilt, 2016; Bravo and Reguera-Alvarado, 2019), by underpinning the notion that the influence of multiple directorships on CSR reporting is stronger in gender-diverse boards. Female directors have a greater orientation towards CSR issues (Nielsen and Huse, 2010; Harjoto and Rossi, 2019) and are likely to create a more participative and proactive atmosphere to discuss corporate decisions (Tejedo-Romero et al., 2017). Therefore, gender diversity will stimulate board members with multiple directorships, who will find great support when seeking to encourage boards to enhance CSR reporting initiatives.

5. Conclusions

This paper provides new empirical evidence concerning the effect of boards intellectual capital on CSR reporting. We find that CSR reporting is enhanced when the number of interlocking directorates increases. Directors with multiple appointments are likely to bring valuable intellectual capital to boards since they may have a broader perspective about emerging trends as well as the strengths offered by different business strategies. In addition, the positive influence of multiple directorships is boosted by board size and gender diversity. Given the importance of both corporate governance mechanisms and CSR reporting in financial markets, our paper has direct implications for firms, regulators, professionals, and researchers.

First, our findings enable firms to understand how directors' social capital, particularly interlocking directorates, provides unique skills for improving CSR reporting. In addition, both gender and board size play an important role in strengthening the influence of multiple directorships on CSR reporting. Therefore, our evidence would help firms when selecting board members and in the development of certain organizational strategies, such as board size.

Second, international regulatory bodies and practitioners have expressed their concern about limiting the number of director appointments on other boards in order to improve board effectiveness. Our findings demonstrate that the impact of multiple directorships on board effectiveness depends on the nature of the decisions in question, since the level of CSR reporting has been shown to rise when the number of directorships increases. In addition, the interaction between multiple directorships and other board attributes, such as gender diversity and board size, remains crucial in our analysis. These characteristics have also been widely debated by professionals and policy-makers, and discussed in codes of corporate governance. In this regard, our evidence presents an important business case in terms of refining legislation and recommendations from regulators and practitioners.

Third, our evidence highlights that the resource dependence theory may be key in explaining the influence of interlocking directorates. In the context of CSR decisions, the provision of resources by board members who hold multiple directorships seems to prevail over what is known as the "busyness effect". Researchers are thus encouraged to examine the effect of multiple directorships on different corporate decisions in order to provide more evidence on the pros and cons of this board characteristic. Furthermore, our findings contribute to the academic debate concerning the need to consider the context in which directors make decisions. As a result, contextual research may be required for researchers to hone their theoretical frameworks, since directors do not work in isolation, and the one-size-fits-all perspective may be inappropriate when examining the effects of boards of directors.

This paper evidences certain limitations that may be considered with a view to pursuing future research opportunities. First, while Spain provides a relevant context for analyzing corporate governance mechanisms and CSR reporting, future studies could explore different legal and/or institutional contexts, since the influence of boards might vary depending on the environment. In addition, other moderating factors could be studied, and academics might also explore specific characteristics of board members who hold multiple directorships.

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Tables

Table 1. Description of variables

Variable	Definition
CSR reporting	Level of CSR reporting
DIRECTORSHIPS	Average number of outside directorships of board members
BSIZE	Number of board members
BINDEP	Percentage of independent directors within the board
BGENDER	Proportion of women directors in the board
BTENURE	Average tenure of board members
BMEETINGS	Number of board meetings by year
ASSET	Total assets (logarithm)
ROA	Return on assets
LEVERAGE	Ratio total debt to total assets
Sector dummies	Dummy variables (two-digit SIC codes)

Table 2. Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Q1	Median	Q3
CSR reporting	629	1.231	1.748	0.000	0.000	3.000
DIRECTORSHIPS	629	1.420	0.951	0.667	1.333	2.000
BSIZE	629	10.7	3.664	8.000	10.000	13.000
BINDEP	629	0.818	0.128	0,767	0.833	0.909
BGENDER	629	0.131	0.117	0.000	0.111	0.200
BTENURE	629	6.443	4.528	3.286	6.300	9.138
BMEETINGS	629	10.410	4.038	8.000	11.000	12.000
ASSET	629	14.094	2.550	12.270	13.872	15.664
ROA	629	0.077	1.133	0.007	0.043	0.083
LEVERAGE	629	0.648	0.781	0.356	0.602	0.826

Table 3. Correlation matrix

	Variable	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)	CSR reporting	0.290***	0.500***	0.045	0.169***	-0.092**	0.159***	0.628***	-0.015	0.006
(2)	DIRECTORSHIPS		0.274***	-0.123***	0.189***	0.088**	0.135***	0.460***	-0.038	-0.131***
(3)	BSIZE			0.243***	0.097***	0.053	0.116***	0.644***	-0.035	-0.061
(4)	BINDEP				0.049	-0.113***	0.158***	0.007	-0.035	-0.063
(5)	BGENDER					-0.016	0.114***	0.226***	0.070*	0.010
(6)	BTENURE						-0.146***	-0.054	-0.045	-0.126***
(7)	BMEETINGS							0.340***	-0.025	-0.096**
(8)	ASSET								-0.086**	-0.037
(9)	ROA									0.502***
(10)	LEVERAGE									
	VIF	1.36	2.04	1.23	1.09	1.08	1.24	2.49	1.37	1.42

Table 4. Effect of directorships on CSR

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CSR_{t-1} reporting	0.459***	0.448***	0.477***	0.744***	0.510***	0.465***	0.466***
	(0.023)	(0.029)	(0.026)	(0.044)	(0.025)	(0.024)	(0.025)
DIRECTORSHIPS	0.092***	-0.046					
	(0.023)	(0.066)					
$DIRECTORSHIPS^2$		0.035*					
		(0.018)					
1 ADDITIONAL DIRECTORSHIPS			-0.109				
			(0.130)				
2 ADDITIONAL DIRECTORSHIPS				0.574**			
				(0.257)			
3 ADDITIONAL DIRECTORSHIPS					0.951***		
					(0.245)		
4 ADDITIONAL DIRECTORSHIPS						0.869***	
						(0.173)	
MORE 4 ADDITIONAL DIRECTORSHIPS							0.598***
							(0.190)
BSIZE	0.040***	0.043***	0.047***	0.015*	0.045***	0.038***	0.050***
	(0.009)	(0.009)	(0.008)	(0.009)	(0.009)	(0.008)	(0.009)
BINDEP	-0.310*	-0.337*	-0.367**	-0.119	-0.375**	-0.387**	-0.314*
	(0.161)	(0.179)	(0.166)	(0.139)	(0.170)	(0.167)	(0.168)
BGENDER	0.499**	0.201	0.402*	0.287	0.451**	0.396*	0.428**
	(0.230)	(0.227)	(0.220)	(0.203)	(0.212)	(0.224)	(0.204)
BTENURE	-0.008**	-0.006	-0.007*	-0.007	-0.008**	-0.009**	-0.008**
	(0.004)	(0.004)	(0.004)	(0.005)	(0.004)	(0.004)	(0.004)
BMEETINGS	0.004	0.005	0.001	0.001	0.010**	0.005	0.005
	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)	(0.004)	(0.005)
ASSET	0.100***	0.110***	0.113***	0.038**	0.084***	0.115***	0.100***
	(0.016)	(0.017)	(0.014)	(0.019)	(0.015)	(0.017)	(0.016)
ROA	0.000	0.002	0.002	0.000	0.001	0.004***	-0.001
	(0.002)	(0.002)	(0.001)	(0.003)	(0.002)	(0.002)	(0.002)
LEVERAGE	0.023***	0.015**	0.018***	0.020	0.013	0.016***	0.025***
	(0.008)	(0.006)	(0.005)	(0.014)	(0.009)	(0.005)	(0.008)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	530	530	530	530	530	530	530
Wald chi	7256.07***	8696.02***	11093.22***	7312.57***	7968.54***	7784.99***	12295.17***
m2	-0.24	-0.26	-0.22	-0.06	-0.19	-0.19	-0.25
Sargan test	62.05	61.63	67.68	24.24	63.10	67.21	63.36

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 5. Mediating effect of board size, board independence, and gender diversity

	(1)	(2)	(3)
CSR_{t-1} reporting	0.647***	0.439***	0.382***
	(0.044)	(0.023)	(0.032)
DIRECTORSHIPS	-0.082	0.249**	0.058**
	(0.065)	(0.121)	(0.028)
DIRECTORSHIPS*BSIZE	0.012*		
	(0.007)		
DIRECTORSHIPS*INDEP		-0.170	
		(0.160)	
DIRECTORSHIPS*GENDER			0.408*
			(0.238)
BSIZE	0.003	0.040***	0.042***
	(0.012)	(0.009)	(0.010)
BINDEP	-0.042	-0.136	-0.308*
	(0.115)	(0.228)	(0.172)
BGENDER	0.368*	0.294	-0.315
	(0.220)	(0.215)	(0.371)
BTENURE	-0.001	-0.007**	-0.007*
	(0.003)	(0.004)	(0.004)
BMEETINGS	0.004	0.005	0.003
	(0.004)	(0.005)	(0.005)
ASSET	0.069***	0.102***	0.123***
	(0.018)	(0.017)	(0.020)
ROA	-0.000	0.002	0.006**
	(0.003)	(0.002)	(0.003)
LEVERAGE	0.019*	0.015*	0.016**
	(0.011)	(0.008)	(0.008)
Year dummies	Yes	Yes	Yes
Sector dummies	Yes	Yes	Yes
Observations	530	530	530
Wald chi	13130.92***	8697.21***	7070.81***
m2	-0.10	-0.28	-0.30
Sargan test	34.00	64.15	64.35

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

The influence of board social capital on corporate social responsibility reporting

Abstract

Purpose: The main objective of this paper is to analyze the influence of multiple directorships, as a critical component of board social capital, on CSR reporting. This study also explores the moderating effect of certain board attributes on multiple directorships.

Design/methodology/approach: Our sample is composed of Spanish listed firms in the Madrid Stock Exchange for the period 2011-2017. A dynamic panel data model based on the Generalized Method of Moments (GMM) is employed.

Findings: Our results highlight an ambiguously positive association between multiple directorships and the level of CSR reporting. In particular, this relationship is positively moderated by both board size and gender diversity.

Research limitations/implications: These findings contribute to academic debates concerning the value of board members intellectual capital. In particular, we emphasize the importance of board social capital, as well as the need to consider the context in which directors make decisions.

Practical implications: This evidence may prove helpful to firms when configuring the board of directors, and for regulators and professionals when refining their legislations and recommendations.

Originality: To the best of the authors` knowledge, this is the first study that empirically analyzes the impact of an important element of board social capital, such as multiple directorships, on CSR reporting, which has become crucial in financial markets.

Key Words: board intellectual capital, board social capital, multiple directorships, CSR reporting, board size, gender diversity.

Research Paper

1. Introduction

The current economic environment is characterized by a growing interest in intellectual capital, corporate social responsibility (hereinafter CSR), and corporate governance (Tejedo-Romero and Araujo, 2020). These topics have become pivotal for regulators, professionals, and firms alike, and previous literature has highlighted the existence of interrelated linkages among the three concepts (Altuner et al., 2015).

On the one hand, intellectual capital has been playing an ever-increasing role for firms in terms of creating organizational competitiveness and sustainability (Alvino et al., 2020). Indeed, previous studies underline that the bulk of a company's value is related to intangible resources, such that the ability to manage intellectual capital therefore remains crucial for firms (Berezinets et al. 2016). Accordingly, research on intellectual capital has grown significantly over the last few years, although empirical evidence in this field is still far from definitive (Massaro et al., 2018). In particular, current research calls for a broader approach in order to gain a deeper understanding of how intellectual capital works. In this regard, recent studies have emphasized the role of corporate boards of directors in the creation and leveraging of a firm's intellectual capital (Pérez-Calero et al. 2016; Scarfato et al., 2020). Directors are likely to bring crucial intangible resources to a board (i.e., knowledge, skills, experience, and connections), and can use their intellectual capital to improve firms' competitive advantage (Berezinets et al. 2016).

On the other hand, while intellectual capital and CSR are theoretically interconnected concepts, the literature concerning the linkages between the two issues is scant (Gallardo-Vázquez et al., 2019; Nikolaou, 2019). One emerging line of research suggests that CSR enhances a firm's level of intellectual capital, which results in it increasing its competitive advantage and value (Jain et al., 2017; Gangi et al., 2019; Khan et al. 2019; Nirino et al. 2020). These studies consider that CSR strategies improve the firm's relations with its stakeholders, which positively affects the efficiency of intellectual capital. In addition, research has also examined how boards of directors, as a key source and driver of intellectual capital, may boost CSR (Barka and Dardour, 2015; Al-Dah, 2019; Ramon-Llorens et al., 2019). These studies stress that directors become providers of human and social capital, which proves decisive with regard to developing sustainable strategies and successfully implementing CSR policies to strengthen relations with stakeholders and gain competitive advantage.

Our paper extends this stream of research by exploring the relation between multiple board directorships, as a relevant component of board social capital, and CSR reporting. Specifically, the objective of this study is twofold. First, we examine the effect of the number of external board directorships on the level of CSR reporting. Second, we analyze how certain board characteristics moderate the influence of multiple board directorships on CSR reporting. The topic is timely and relevant for a number of reasons.

First, multiple directorships[1], which take place when a board member of a firm sits on the board of directors of another firm, are critical vis-à-vis developing board social capital and, therefore, enhance the intellectual capital of boards of directors (Nicholson et al., 2004; Berezinets et al., 2016). Multiple directorships remain an important board characteristic for academics, policy-makers, and professionals alike. In particular, interlocking directorates have been the subject of intense debate for regulators (European Commission, 2011) and practitioners (Institutional Shareholder Services, 2020), who suggest that an excessive number of directorships might enhance the busyness of boards and prove detrimental to corporate decision quality. Furthermore, the issue concerning boards' busyness has recently been addressed by national codes of corporate governance in a number of countries (i.e. Australia, Canada, France, Germany, Italy, Japan, Spain, the United Kingdom, and the United States, among others). However, academics have increasingly underlined the role of multiple directorships as providers of key resources for creating intangible value by developing CSR activities, although the evidence is scarce and inconclusive, and the consideration of CSR reporting is missing (Ortiz de Mandojana et al., 2015; Glass et al., 2016; Al-Dah, 2019; Lu et al., 2020).

Second, over the last few years, firms have been coming under ever-increasing pressure to report information on CSR practices, which have become a crucial strategy for competitive advantage (Gangi and Trotta, 2013; Arayssi et al., 2016). CSR information may even affect firm valuation (Ioannou and Serafeim, 2015), investments decisions (Ioannou and Serafeim, 2019), corporate reputation (Odriozola and Baraibar-Díez, 2017), and the cost of finance (Cheng et al., 2014). Consequently, CSR reporting has also been included in the agenda of regulators and professional bodies alike (Directive 2014/95; KPMG, 2017). As a result, understanding how board social capital impacts CSR reporting is a central question when it comes to ascertaining how board members provide valuable intellectual capital.

Third, the influence of board social capital is likely to be contingent and to depend on the context (Wincent et al., 2010; Johnson et al., 2013). Despite being theoretically evident, there is minimal empirical evidence concerning whether, and how, certain board attributes might interact with one another in their links to CSR (Endrikat et al., 2020). In particular, to comprehend the effects of board social capital, boards need to be considered as a group rather than as a piecemeal, thus requiring research on the interactions between board attributes to provide more conclusive evidence on how multiple directorships influence CSR so that policy-makers and practitioners can make their legislations and recommendations more effective (Jain and Jamali, 2016).

Our sample is composed of Spanish listed firms in the Madrid Stock Exchange for the period 2011-2017. A unique set of data is used, since the information on board members

[1] In addition to multiple directorships, the literature has also employed the term "interlocking directorates" to refer to this issue.

is hand-collected by examining the biographies of each of the 1,252 directors of these firms. Individual analysis of each biography enables us to reliably identify any type of board member directorship, which offers an advantage vis-à-vis the data generally provided by global databases. Our results point to a positive association between multiple directorships and the level of CSR reporting. In particular, this relation remains positive when board members hold two or more outside directorships, and therefore the presence of a negative busyness effect is ruled out. In addition, this relationship between multiple directorships and CSR reporting is positively moderated by both board size and gender diversity.

Our study thus offers several key contributions. First, our findings contribute to intellectual capital literature by exploring the connections between board social capital and CSR in greater depth. Our evidence highlights that board members who hold multiple directorships provide a firm with crucial intangible resources, thereby strengthening CSR reporting practices. In particular, multiple directorships may help firms to attain competitive advantage by enhancing CSR reporting, regardless of the number of board directorships. These findings indicate that the provision of resources prevails over the busyness effect in decisions related to CSR reporting. Thus, we extend the evidence concerning this component of board intellectual capital and offer a new perspective to understand how board social capital may generate value for firms. Second, our paper also extends corporate governance and corporate social responsibility literature. Two closely related papers (Zou et al., 2019; Sun et al., 2020) have explored, in Chinese context, whether a firm is more likely to publish a stand-alone CSR report when it has an interlink to another firm that publishes such a report. Our study extends this research by focusing on the total number of outside directorships (not only specific links between firms) in order to respond to the aforementioned regulatory, professional, and academic debates on the issue. Furthermore, our paper also fills the research gap by analyzing the effect of multiple directorships on a more global measure for CSR reporting strategy, considering not only the publication of CSR reports but also compliance and adherence to GRI guidelines and the external assurance of CSR information. This is important, since CSR reports have become common practice in many countries, and both GRI guidelines and external assurance have become key attributes of CSR reporting for gaining competitive advantage (García-Sánchez et al., 2019). Third, given the relevance of CSR reporting, our evidence stimulates the professional and regulatory debates concerning multiple directorships and its value as providers of valuable intellectual capital, which would help to fine tune legal proposals or endorsements on the matter. Fourth, we complement previous studies by indicating that the interaction between board attributes remains crucial in terms of gaining a clearer insight into what influence board social capital has on CSR reporting. Our results highlight the fact that the board context plays an important moderating role in the relation between multiple directorships and CSR reporting. In particular, our evidence implies a step forward in the literature by highlighting that board size and gender diversity may stimulate the discussion and inclination towards CSR reporting practices within the board, and intensify the effect of multiple directorships.

The structure of the paper is as follows. In the next section, the theoretical framework is reviewed and the main hypotheses are formulated. Section 3 explains the sample, the variables, and the method employed in the empirical analysis. Section 4 reports the main results, while section 5 summarizes the main conclusions of our study.

2. Theoretical framework and hypothesis development

Intellectual capital can be defined as a set of intangible sources that helps to create competitive advantage and value for organizations (Nazari and Herremans, 2007; Alvino et al., 2020). More specifically, intellectual capital can be conceived as the "value-creating" of three components (Bontis et al., 1998): a firm's human capital (the workforce's capabilities, skills, expertise, experience, competence, innovation, and learning ability), structural or organizational capital (business processes and systems, organizational culture, and organizational capabilities), and relational capital (relations the firm has established with its stakeholders, such as customers, creditors, investors, suppliers, etc.). Intellectual capital research has progressively evolved and its focus has moved through different stages. While the initial phases led to the development of the theoretical concept and the identification of its components, the most recent stages have analyzed managerial implications and new aspects related to intellectual capital, such as the environment and sustainability (Massaro et al., 2018; Nirino et al., 2020).

In this regard, the linkages between intellectual capital and CSR have gained growing attention in recent years (Gallardo-Vázquez et al., 2019). The development of CSR activities is likely to generate both external and internal benefits, such as improving transparency and reputation, developing trust, increasing motivation, attracting good talent, strengthening co-operation and networks, improving corporate culture, and enhancing individual and collective knowledge (Jain et al., 2017; Gangi et al., 2019). Therefore, CSR activities may assist in creating the different types of intellectual capital, including human, structural, and relational capital (Nikolaou, 2019; Nirino et al., 2020). As a result, CSR practices can be expected to help firms develop substantial intangible value and lead to competitive advantage (Khan et al., 2019). Accordingly, previous research has investigated the determinants of CSR reporting in considerable depth (Coulmont et al., 2015).

Concurrently, recent research has underlined that a firm's intellectual capital is also embedded in its people, structures and relationships, and can therefore be generated by governing bodies, mainly by the board of directors (Scarfato et al., 2020). Board members' intellectual capital is responsible for creating and strengthening a firm's intellectual capital, and can be classified into human capital and social capital (Berezinets et al. 2016; Pérez-Calero et al., 2016). Board human capital refers to the knowledge and skills of directors, and board social capital relates to relationships between board members as well as their connections with other stakeholders, from both inside and outside the company (Johnson et al, 2013). Boards may use their intellectual capital to help attain competitive advantage and increase corporate value (Hillman, 2005). Specifically, directors' intellectual capital may provide the board with valuable intangible resources (Hillman and Dalziel, 2003) which prove decisive in terms of improving advice and counsel, firm legitimacy and reputation, channels of communication between the firm and external organizations, and can thereby significantly affect firms' CSR engagement (Ramon-Llorens et al., 2019).

In particular, our paper complements this stream of literature by exploring in greater depth the role of board social capital as a source of intellectual capital, and specifically analyzing the relation between multiple board directorships and CSR reporting. Consistent with the resource dependence theory, boards of directors are seen more as a provider of resources than as evaluators of management (Scarfato et al., 2020). This theory considers that a firm is an open system conditioned by its connections with the external environment, and therefore the theory suggests that directors' social capital may bring key resources to boards (Pfeffer and Salancik, 1978). In this line, resource dependence theory underlines the notion that relations with the external environment enable the board to gain access to resources that are vital to attaining competitive advantage (Nicholson et al., 2004). In particular, board social capital can lead to benefits in the form of superior access to information (Adler and Known, 2002) and can facilitate the creation of intellectual capital by combining and exchanging knowledge and anticipation of value through such exchanges (Nahapiet and Ghoshal, 1998). Specifically, directors' social capital allows information and resources to flow into the board, which can affect the board's functioning as a whole (Johnson et al., 2013). In relation to CSR, by maintaining critical external relations board social capital is expected to be decisive vis-à-vis handling firms' external needs, such as environmental and social challenges (Ramon-Llorens et al., 2019).

In the context of CSR reporting, multiple directorships prove crucial to the creation of a firm's links with its business environment (Adams et al., 2010), which may become a source of competitive advantage, thereby providing better strategic reasoning and vision (Ortiz de Mandojana and Aragon-Correa, 2015). In this line, multiple directorships may help the board to understand and respond to its demands regarding CSR reporting practices (Guerrero-Villegas et al. 2018). Specifically, interlocking directorates are likely to provide valuable resources for a board to improve CSR reporting, which remains key to mitigating environmental uncertainty and so gaining competitive advantage. In this regard, board member connections are likely to provide a unique opportunity for directors to observe the CSR strategies of other firms and to exchange information regarding trends in CSR reporting (Zou et al., 2019; Sun et al. 2020). Therefore, multiple directorships enable board members to gain experience about environmental and social challenges

(Ramon-Llorens et al., 2019) and to manage information regarding environmental and social standards, regulations and stakeholders' expectations (Ortiz de Mandojana and Aragon-Correa, 2015). In addition, directors who sit on more than one board obtain greater access to CSR issues (Jain et al., 2015). Thus, interlocking directorates therefore become an effective way for directors to acquire important knowledge and skills for strengthening discussions concerning CSR policies and for promoting CSR reporting strategies (Simoni and Caiazza, 2013). As a result, multiple directorships are likely to increase boards' awareness and their capacity to enhance the level of CSR reporting to respond to society's expectations and so attain competitive advantage.

When it comes to achieving competitive advantage, firms are required to implement responsive and effective CSR initiatives to respond to the increasing pressure exerted by the environment (Gangi and Trotta, 2013). In this regard, disclosing CSR reports, which has become commonplace, may be insufficient, since their publication may be considered as an informal requirement for firms and may not lead to significant competitive advantage (Axjonow et al., 2018). In addition to CSR reports, firms may also strategically choose to follow Global Reporting Initiative (GRI)[2] initiatives to gain competitive advantage through an increase in value creation and corporate reputation (Odriozola and Baraibar-Diez, 2017; García-Sánchez et al., 2019). Moreover, firms can decide a certain application level of these guidelines, which results in enhancing comparability and transparency of CSR information, thus improving the trust placed in these firms and leading to economic benefits (Fernández-Feijoo et al., 2014; García-Sánchez et al., 2019). Additionally, external assurance of this information is likely to enhance corporate reputation, which can be obtained through the competitive advantage gained by increased credibility and trustworthiness (Casey and Grenier, 2015; Birkey et al., 2016; Odriozola and Baraibar-Diez, 2017). In this regard, our paper employs an aggregate measure for CSR reporting, which considers the publication of stand-alone CSR reports, compliance with GRI guidelines, the level of application of GRI guidelines, and the external assurance of information. This measure enables us to ascertain how board social capital provides intellectual capital by promoting CSR reporting practices that are expected to improve firms' competitive advantage.

In line with the above discussion, multiple directorships are expected to serve as a source of intellectual capital, and to lead to board members accumulating valuable resources to gain competitive advantage by improving CSR reporting. We thus formulate the following hypothesis:

H1: The number of outside directorships positively influences CSR reporting.

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[2] The GRI are the most widely used CSR reporting standards (Coulmont et al., 2015; García-Sánchez, et al., 2019).

Directors, however, do not work alone. The board acts as a team and, therefore, board attributes may significantly moderate the way in which individual director characteristics affect CSR decisions (Jain and Jamali, 2016; Oh et al., 2018; Bravo and Reguera-Alvarado, 2019). Consequently, a contextual approach may be required to evaluate the influence of board social capital on CSR reporting, as the role of multiple directorships is likely to be moderated by specific board characteristics (Johnson et al., 2013; Ramon-Llorens et al, 2019). In particular, previous research has highlighted that certain factors, such as board size, board gender, and board independence, are decisive in CSR reporting practices (Guerrero-Villegas et al., 2018; Endrikat et al., 2020). These board attributes are thus expected to condition the way in which multiple directorships influence CSR reporting. The relationship between these three board characteristics and CSR is explained below.

Board size and CSR reporting

On the one hand, paying sufficient attention to CSR decisions may require the involvement of a large number of board members to organize and divide tasks among directors, including monitoring CSR policies (Barakat et al., 2015). Furthermore, a small board might have more difficulties in dealing with CSR challenges, which can be considered as extra work (Jizi, 2017). Larger boards also bring a broader range of resources, such as different backgrounds, knowledge, and links with the external environment, which is likely to improve the quality of the advice offered by directors (Abeysekera, 2010). Hence, these boards are expected to be more aware of stakeholders information needs, which may result in more productive discussions on CSR issues (Haji, 2013) and more orientation towards CSR practices (Giannarakis, 2014).

However, from a theoretical point of view, an excessive number of directors may complicate promoting CSR practices within the boardroom for several reasons. Smaller boards are more likely to exhibit a more cohesive framework, this leading to better director coordination and greater engagement (Yoshikawa and Phan, 2003). In this regard, smaller boards can create a suitable atmosphere that helps to make board members more responsible and dedicated, which would increase accountability towards social and environmental issues (Arayssi et al., 2016). In addition, smaller boards are likely to take less time over discussions and decisions, thereby reducing conflicts and achieving a consensus, which favors the implementation of CSR initiatives (Guerrero-Villegas et al., 2018). Consequently, we assume that the effect of multiple directorships is moderated by board size, which leads us to formulate the following hypothesis:

H2: The association between multiple directorships and CSR reporting is moderated by board size.

Board independence and CSR reporting

Prior research has also suggested that independent board members maximize stakeholder interest, which would also result in improving CSR reporting (Khan, 2010; Liao et al., 2015). Independent directors can encourage the board to engage in ethical behavior (Ibrahim et al., 2003) and adopt regulations and societal trends related to reporting practices (Rao and Tilt, 2016). In particular, independent directors may act as accountability mechanisms for the various stakeholders and are therefore likely to be more aware of the importance of CSR reporting for promoting transparency (Cheng and Courtenay, 2006). These directors can be better connected with the firm's environment and bring fresh insights to the board concerning environmental and social issues (Galbreath, 2010).

In contrast, board independence may not necessarily lead to enhance CSR reporting. Independent directors may be reluctant to increase CSR reporting levels due to reputational concerns (Haniffa and Cooke, 2002). Independent directors, who might lack an in-depth knowledge of the CSR measures taken by a firm, may therefore avoid playing a proactive role in promoting CSR reporting practices in order to minimize reputational risks (Guerrero-Villegas et al., 2018). In addition, board independence may not have a positive impact on CSR reporting if large shareholders take control over independent directors and hinder the latter's ability to oversee reporting practices (Gallego-Álvarez and Pucheta-Martínez, 2020). As a result, we assume that the effect of multiple directorships is moderated by board independence, leading us to formulate the following hypothesis:

H3: The association between multiple directorships and CSR reporting is moderated by board independence.

Board gender diversity and CSR reporting

Board gender diversity has generally been defined as female representation on boards of directors (Bravo and Reguera-Alvarado, 2019). There is consensus vis-à-vis women's greater orientation towards environmental and social issues, and different perspectives suggest that gender board diversity may be an important driver of CSR reporting (Kaijser and Kronsell, 2014). In this regard, women are likely to provide the board with a wide set of resources, such as skills, access to key constituents, and different leadership experiences (Quintana-García and Benavides-Velasco, 2016). This enables boards to better understand the concerns and demands from the environment. In particular, gender-diverse boards tend to be more empathic and socially sensitive (Nielsen and Huse, 2010), and therefore more likely to focus on issues and policies related to social responsibility (Harjoto and Rossi, 2019; Katmon et al., 2019). Moreover, female directors have a more communal style of leadership and tend to be more participative and proactive (Tejedo-Romero et al., 2017), which stimulates discussions concerning CSR issues and which may encourage the board to promote CSR reporting practices.

Nevertheless, female directors may have an insignificant effect on CSR reporting whether they do not reach a critical mass (Husted and Sousa-Filho, 2019), or they are considered as tokens, which might drive to important minority problems that could significantly hinder women ability to participate in discussions within the board (Elstad and Ladegard, 2012). In addition, gender diversity can also increase heterogeneity within the board, thereby creating significant subgroups and reducing team cohesion (Zhu et al., 2014). In this regard, female directors might be seen as hindering the board's ability to make decisions, including those related to CSR practices (Konrad et al., 2008; Mensi, 2014), thus minimizing the implementation of increased CSR reporting initiatives. Accordingly, we assume that the effect of multiple directorships is moderated by board gender diversity, and we formulate the following hypothesis:

H4: The association between multiple directorships and CSR reporting is moderated by board gender diversity.

Figure 1 presents a graphical representation of our theoretical framework.

[Insert Figure 1 about here]

3. Empirical design

3.1. Sample

The population considered for the analysis is the 132 firms listed on the Madrid Stock Exchange for the period 2011-2017. In this regard, the period of analysis excludes the effects related to mandatory Spanish law 11/2018, which transposed European Directive 2014/95 regarding the disclosure of non-financial information, which may bias our results. Several companies were dropped because not all the necessary information on board members was available. Furthermore, some observations were also removed because financial information from the Datastream database was missing. As a result, our analysis is based on an unbalanced sample composed of 629 firm-year observations for 115 companies. This sample is representative since these firms represent most of the capitalization of the Spanish stock exchange and are more visible, with CSR reporting proving to be a crucial strategy for increasing their organizational competitiveness. Therefore, previous studies on the Spanish context have generally considered similar samples (Fuente et al., 2017; Blanco-Alcántara et al., 2019; Bravo and Reguera-Alvarado, 2019; Tejedo-Romero and Araujo, 2020). In addition, this sample provides an interesting scenario because of the particular characteristics of Spanish firms, which have a unitary board system and voluntary good governance practices (Manzaneque et al., 2016), and which are subject to intense pressure to enhance CSR reporting (Odriozola and Baraibar-Diez, 2017).

Data on board members was manually gathered from the biography of each director, which was extracted from the firms' annual reports or from corporate governance reports and, if necessary, by examining other public sources such as Bloomberg Business Week and the official websites of other companies where these directors served. Specifically, we researched the biographies of the 1,252 board members of the firms from our sample. The information for designing our CSR reporting variable was obtained from the GRI database or by analyzing firms' websites, if necessary. Finally, financial data and other corporate governance information were extracted from Datastream.

3.2. Variables

Dependent variable: CSR reporting

The dependent variable of our study aggregates several items, as dummy variables, regarding CSR reporting initiatives that may be adopted by firms to gain competitive advantage: (1) the disclosure of a standalone report; (2) compliance with GRI guidelines; (3) the level of application of these guidelines; and (4) presence of external assurance. First, CSR reports are increasingly being required in order to respond to pressure from stakeholders and this item equals one if a company issues a standalone CSR report, and zero otherwise (Zou et al., 2019; Sun et al., 2020). Second, in line with previous literature, we consider that adopting GRI guidelines plays an important role in enhancing transparency, with this item taking a value of one if the firm publishes a CSR report using these guidelines, and zero otherwise (Legendre and Coderre, 2013; García-Sánchez et al., 2019). In this regard, we have considered that firms may follow the G3 version of GRI guidelines (published in 2006) or the G4 version (published in 2013 and valid until 2018). Third, a high level of application means greater notification of CSR activities, which may result in enhancing trust in firms, and a binary coding is employed for this item by assigning the value one when the firm presents the maximum level of application of GRI guidelines, and zero otherwise (Fernández-Feijoo 2014; Fuente et al., 2017). The maximum level of application is "A" for those reports that follow the G3 version of the GRI guidelines and "In accordance-Core" for those reports following the G4 version. Fourth, external assurance implies verification of CSR information, which helps to increase credibility and corporate reputation, with this item being equal to one when CSR is externally assured by a professional firm, and zero otherwise (Casey and Grenier, 2015; Birkey et al., 2016). Similar to other studies (Moneva et al., 2007; Fernández-Feijoo et al., 2014; Miras-Rodríguez et al., 2020), these items are aggregated to create an index, which enables a firm's overall CSR reporting strategy to be reflected. The reporting index thus ranges from 0 to 4.

Explanatory variables and control variables

Our measure for board social capital refers to board multiple directorships (DIRECTORSHIPS). In line with previous research, this variable is calculated as the average number of outside boards on which directors sit in the same year (Hillman et al., 2011; Baccouche et al., 2014; Bravo and Reguera-Alvarado, 2019; Zarza-Herranz et al., 2020). To that end, each director biography was previously examined to count this person's every appointment on any board of directors, both in firms from our sample and in any other additional firm. Considering directorships held in companies from both inside and outside the sample prevents the measurement error that would exist if this variable were to be calculated within the sample (Sarkar and Sarkar, 2009).

Moreover, our three moderating variables are also designed in line with previous research. Board size (BSIZE) is calculated by the total number of board members and includes only full-time directors (Arayssi et al., 2020; Gallego-Álvarez and Pucheta-Martínez, 2020). Board independence (BINDEP) is measured by the proportion of independent directors within the board, and independence is defined according to the company's own criteria. (Cuadrado-Ballesteros et al., 2015; Husted and Sousa-Filho, 2019). Board gender diversity (BGENDER) is computed as the proportion of female directors over the total number of board members (Arayssi et al., 2016; Katmon et al., 2019).

Consistent with prior literature (Dhaliwal et al., 2014; Bravo and Reguera-Alvarado, 2019; Amorelli and García-Sánchez, 2019), a set of control variables is also considered due to their potential influence on CSR reporting. As regards board-related variables, board tenure and board activity are included in the empirical analysis. Board tenure

(BTENURE) is computed as the average number of years board members spent on a particular board. Finally, board activity (BMEETINGS) refers to yearly board meeting frequency and is measured by the number of meetings held by the board for a given year. In addition, several firm-level variables are also considered: firm size, profitability, and leverage. Firm size (ASSET) is calculated as the logarithm of total assets; profitability (ROA) is computed as the return on total assets; and leverage (LEV) is measured as the ratio of total debt to total assets. Finally, we use a set of year and sector dummies to control for time and industry effects, respectively.

Table 1 provides a summary of the variables and their definitions.

[Insert table 1 about here]

3.3. Empirical model

The two-step dynamic panel data model Generalized Method of Moments (GMM) proposed by Arellano and Bond (1991) is employed to test the hypotheses formulated. One common concern in research into boards of directors and CSR reporting practices relates to potential endogeneity between the two variables, which can result in reverse causality relations or unobserved variables (Jain and Jamali, 2016; Guerrero-Villegas et al., 2018). The GMM procedure allows us to address potential endogeneity problems by using the lagged right-hand-side variables as instruments (Blundell and Bond, 1998). Although there are several methodological options for addressing endogeneity problems, GMM is considered to be consistent and efficient since it also allows unobservable heterogeneity to be controlled for (Ramon-Llorens, et al., 2019). The consistency of GMM estimates depends on both the absence of second-order serial correlation in the first-difference residuals and on the validity of the instruments, which have been confirmed by both the m2 statistic and the Sargan test.

The general model used to test our hypotheses is presented in Equation 1:

$$\text{CSR reporting}_{i,t} = \beta_0 + \beta_1 \text{CSR reporting}_{i,t-1} + \beta_2 \text{DIRECTORSHIPS}_{i,t} + \beta_3 \text{BSIZE}_{i,t} + \beta_4 \text{BINDEP}_{i,t} + \beta_5 \text{BGENDER}_{i,t} + \beta_6 \text{BTENURE}_{i,t} + \beta_7 \text{BMEETINGS}_{i,t} + \beta_8 \text{ASSET}_{i,t} + \beta_9 \text{ROA}_{i,t} + \beta_{10} \text{LEV}_{i,t} + \sum_{J=1}^{6} \beta_{11} \text{YEAR}_{i,t} + \sum_{J=1}^{6} \beta_{12} \text{SECTOR}_{i,t} + \varepsilon_{it}$$

Equation [1]

where β0 is the intercept and βi is the coefficient of each independent variable. The sub-index i identifies the individual, and the sub-index t identifies the time, and εit, the error term.

4. Empirical results

4.1. Descriptive statistics and bivariate correlations

Table 2 provides the descriptive statistics of all the variables. The average value for the CSR reporting index is 1.231. Many firms in our sample opt to disclose CSR information in the annual reports, and only the largest firms in the Madrid Stock Exchange publish a stand-alone CSR report (Miras-Rodríguez et al., 2020). As regards multiple directorships, the mean number of outside directorships of board members is around 1.42. These findings are very similar to those reported by other previous studies (Hillman et al., 2011; Bravo and Reguera-Alvarado, 2018). Moreover, the board is composed of nearly eleven members on average, the vast majority of whom are independent directors (around 82%). Women are clearly underrepresented, since female directors only average 13.1% of total board membership. In addition, the board meets around ten times a year and the average value for board tenure is only 6.4 years.

[Insert table 2 about here]

Table 3 reports the correlation matrix among the variables. In particular, the results show a positive association between CSR reporting and directorships. Furthermore, and as expected, several independent variables are also correlated with CSR practices. The literature generally considers multicollinearity to be a problem if the correlation between the independent variables is above 0.7 (Cooper and Schindler, 2003). Although the correlation coefficients are below 0.7, we compute the variance inflation factor (VIF) to test for the lack of multicollinearity in our estimates, and we find that VIF values are all below 2. Given that lack of multicollinearity is broadly accepted when VIF values are below 5 (Studenmund, 1997), we deem that multicollinearity is not an issue in our sample.

[Insert table 3 about here]

4.2. Main analysis

With regard to hypothesis H1, the results of the multivariate analysis are presented in Table 4. Specifically, columns 1-7 reflect the association between CSR reporting and several variables to capture multiple directorships: the average number of outside directorships (column 1), the quadratic value of the average number of outside directorships (column 2), and individual measures to test the effect on CSR reporting of a specific number of outside directorships (columns 3-7). In line with the theoretical arguments, results show a positive and statistically significant association between multiple directorships and CSR reporting (Column 1). This positive association is also confirmed when the quadratic measure of multiple directorships is included (column 2). Results suggest that higher values of directorships positively influence the level of CSR reporting, and rule out the presence of a negative busyness effect for higher levels of interlocking directorates.

By way of an in-depth analysis of the previous results, we considered the association between CSR reporting and the percentage of directors who sit on one, two, three, and four or more outside boards (columns 3-7). In this regard, there is no significant association between multiple directorships and the level of CSR reporting if the number of outside directorships is only one. However, when directors sit on an average of two or more outside boards, multiple directorships have a clear positive and significant effect on CSR reporting. Overall, these findings lead us to accept hypothesis H1.

In addition, our results are also consistent with theoretical predictions about the moderating variables, which determine the level of CSR reporting. Specifically, our results tend to indicate that the level of CSR reporting is positively influenced by board size and gender board diversity, and negatively conditioned by board independence. As for the control variables, our results generally reveal that CSR reporting is negatively related to board tenure and positively associated to firm size and leverage.

[Insert table 4 about here]

In order to test hypotheses H2, H3, and H4, Table 5 presents the results for the moderating effect of board characteristics (size, independence, and gender) in the relationship between CSR reporting and multiple directorships. First, our findings show that board size positively moderates the association between multiple directorships and CSR reporting. Therefore, the impact of interlocking directorates on CSR reporting is strengthened in larger boards, thus providing support for hypothesis H2. However, our results fail to find a significant moderating effect of board independence on the relation between multiple directorships and CSR reporting: hence hypothesis H3 cannot be accepted. Finally, gender diversity also appears to be an important moderating factor in the relationship between multiple directorships and CSR reporting. Female directors lead to a more intense influence of interlocking directorates on CSR reporting, as suggested in hypothesis H3.

[Insert table 5 about here]

4.3. Discussion

The study of the connections between intellectual capital and CSR has gained increasing academic attention (Gallardo-Vázquez et al., 2019; Nirino et al., 2020). In addition, the role of boards of directors as a source and driver of intellectual capital has been highlighted in recent research (Berezinetz et al. 2016; Scarfato et al., 2020). Our paper fills the gap in previous research by exploring the influence of a specific element of board social capital on CSR reporting. In particular, we focus on multiple directorships, which have been discussed by regulators, professionals, and academics alike. Our results extend previous literature on intellectual capital and also contribute to the literature on corporate governance and corporate social responsibility.

As regards the literature on intellectual capital, and consistent with previous research, our evidence reinforces the idea that board social capital is a source of intellectual capital that helps to create and strengthen corporate value (Nicholson and Kiel 2004; Pérez-Calero et al., 2016; Scarfato et al., 2020). Specifically, multiple directorships are proven to be decisive vis-à-vis improving CSR reporting, which is likely to result in gaining competitive advantage. In this regard, our measure for CSR reporting includes the disclosure of CSR reports, as well as the adoption and level of application of GRI guidelines, and the external assurance of CSR information, with these being key initiatives for enhancing corporate reputation and economic benefits (Casey and Grenier, 2015; Odriozola and Bariabar-Díez, 2017; García-Sánchez et al., 2019). Consistent with our theoretical expectations, our results suggest that multiple directorships provide the board with valuable intangible resources to improve CSR reporting. Therefore, we align with previous research which suggests that firms need to exploit every form of capital efficiently (Alvino et al. 2020), and to pay particular attention to the intellectual capital of the board of directors (Berezinets et al. 2016).

Furthermore, our evidence is in line with previous research suggesting a positive effect of multiple directorships on CSR decisions (Barka and Dardour, 2015; Ortiz de Mandojana and Aragon-Correa, 2015; Glass et al., 2016; Al-Dah, 2019). Specifically, our findings herald a step forward compared to other studies concerning board interlocking and CSR reporting practices (Zou et al., 2019; Sun et al., 2020). Unlike these studies, which suggest that specific director links may have an effect on the publication of CSR reports, we focus on the total number of outside directorships, which has been the subject of intense regulatory, professional, and academic debates, as well as on a more comprehensive measure of CSR reporting, with direct repercussions for financial markets. Our results also emphasize that the effect of multiple directorships on CSR reporting remains significant when the number of outside directorships is two or more. Some previous evidence has suggested that multiple directorships can eventually lead to a deterioration in certain board decisions (Fich and Shivdasani, 2012; Lei and Deng, 2014; Bravo and Reguera-Alvarado, 2018). Even policy-makers and professional bodies (European Commission, 2011; Institutional Shareholder Services, 2020) have expressed their concern about an increased number of directorships. Nonetheless, our research demonstrates that the effect of multiple directorships on CSR reporting decisions is unambiguously positive. Therefore, our paper extends the academic debate about whether multiple directorships add value to firms (Ferris et al., 2020) and may help to complement the thus far controversial results by highlighting that interlocking directorates may prove to be especially beneficial for CSR-specific strategies.

In addition, our findings are also consistent with the recent stream of research which supports the idea that contextual approaches are required to better comprehend the influence of boards' social capital. In the CSR field, a few articles have studied whether the association between interlocking directorates and CSR activities may be moderated by firm characteristics (Ortiz de Mandojana and Aragon-Correa, 2015; Zou et al., 2019) and the institutional context (Sun et al., 2020). In particular, we extend previous literature by analyzing how certain board characteristics (board size, board independence, and gender diversity) moderate the relation between multiple directorships and CSR reporting. Our findings are generally consistent with theoretical expectations and reinforce the evidence concerning the importance of examining the interaction between board attributes (Oh et al., 2018; Bravo and Reguera-Alvarado, 2019; Endrikat et al., 2020). Specifically, our results show that board size and board gender diversity strengthen the influence of multiple directorships on CSR reporting. First, in addition to other studies which document a positive relationship between board size and CSR reporting (Jizi, 2017; Husted and Sousa-Filho, 2019), our evidence suggests that larger boards enable directors with multiple appointments to exert a greater influence on CSR reporting. Larger boards are likely to pay closer attention to CSR stakeholders' demands and to organize the implementation of CSR initiatives (Barakat et al., 2015). Moreover, having a greater number of directors tends to bring more resources to the board and more links to its environment (Abeysekera, 2010). Therefore, board members with multiple directorships might have more time to discuss and promote CSR issues in larger boards, which will also become more receptive to intensifying CSR policies. Second, our findings complement previous research on the positive effect of board gender diversity on CSR reporting (Arayssi et al., 2016; Rao and Tilt, 2016; Bravo and Reguera-Alvarado, 2019), by underpinning the notion that the influence of multiple directorships on CSR reporting is stronger in gender-diverse boards. Female directors have a greater orientation towards CSR issues (Nielsen and Huse, 2010; Harjoto and Rossi, 2019) and are likely to create a more participative and proactive atmosphere to discuss corporate decisions (Tejedo-Romero et al., 2017). Therefore, gender diversity will stimulate board members with multiple directorships, who will find great support when seeking to encourage boards to enhance CSR reporting initiatives.

5. Conclusions

This paper provides new empirical evidence concerning the effect of board social capital on CSR reporting. We find that CSR reporting is enhanced when the number of multiple directorships increases. Directors with multiple appointments are likely to bring valuable intellectual capital to boards since they may have a broader perspective about emerging trends as well as the strengths offered by different business strategies. In addition, the positive influence of multiple directorships is boosted by board size and gender diversity. Given the importance of both corporate governance mechanisms and CSR reporting in financial markets, our paper has direct implications for firms, regulators, professionals, and researchers.

First, our findings enable firms to understand how directors' social capital, particularly interlocking directorates, provides unique intangible resources for improving CSR reporting. In addition, both gender and board size play an important role in strengthening the influence of multiple directorships on CSR reporting. Therefore, our evidence would help firms to create and develop intellectual capital when selecting board members.

Second, international regulatory bodies and practitioners have expressed their concern about limiting the number of director appointments on other boards in order to improve board effectiveness. Our findings demonstrate that the impact of multiple directorships on board effectiveness depends on the nature of the decisions in question, since the CSR reporting has been shown to improve when the number of directorships increases. In addition, the interaction between multiple directorships and other board attributes, such as gender diversity and board size, remains crucial in our analysis. These characteristics have also been widely debated by professionals and policy-makers, and discussed in codes of corporate governance. In this regard, our evidence presents an important business case in terms of refining legislation and recommendations from regulators and practitioners.

Third, our evidence highlights that the resource dependence theory may be key in explaining the influence of interlocking directorates. In the context of CSR decisions, the provision of resources by board members who hold multiple directorships seems to prevail over what is known as the "busyness effect". Researchers are thus encouraged to examine the effect of multiple directorships on different corporate decisions in order to provide more evidence on the pros and cons of this board characteristic. Furthermore, our findings contribute to the academic debate concerning the need to consider the context in which directors make decisions. As a result, contextual research may be required for researchers to hone their theoretical frameworks, since directors do not work in isolation, and the one-size-fits-all perspective may be inappropriate when examining the effects of boards of directors.

This paper evidences certain limitations that may be considered with a view to pursuing future research opportunities. First, while Spain provides a relevant context for analyzing corporate governance mechanisms and CSR reporting, future studies could explore different legal and/or institutional contexts, since the influence of boards might vary depending on the environment. Moreover, our sample is limited to large listed firms. Since small and medium enterprises are pivotal in many national economies and increased competition requires these firms to constantly seek competitive advantage, future research on this topic might also investigate such firms. Furthermore, our paper focuses on a specific element of board social capital. In order to better understand the role of board capital on CSR reporting, scholars may also examine the influence of other attributes related to board social capital and board human capital. In addition, other moderating factors could be studied, and academics might also explore specific characteristics of board members who hold multiple directorships. The diversified nature of the data sourcing is also a common limitation that is inherent in this type of study.

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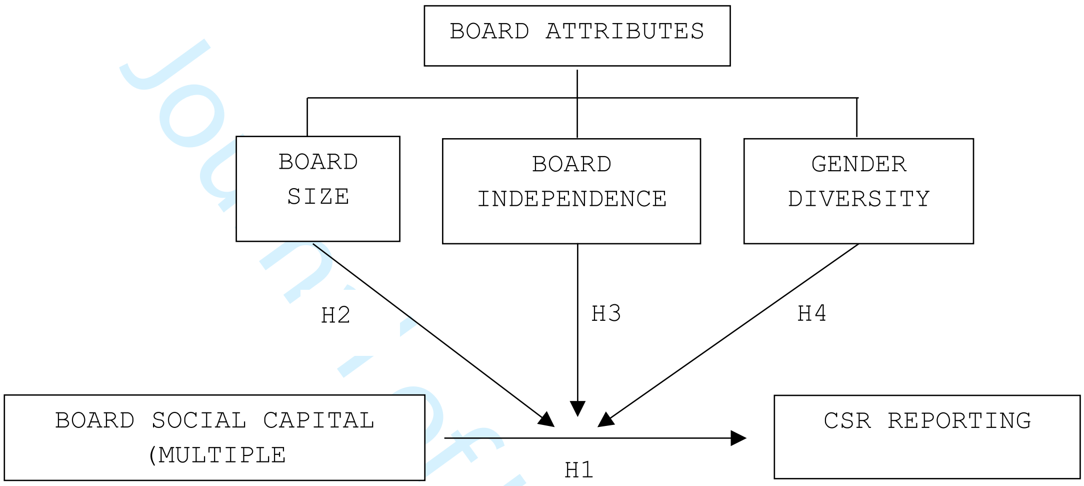
Figures

Figure 1. Theoretical model



Tables

Table 1. Description of variables

Variable	Definition	Source
CSR reporting	Level of CSR reporting	GRI database
DIRECTORSHIPS	Average number of outside directorships of board members	Corporate governance report
BSIZE	Number of board members	Corporate governance report
BINDEP	Percentage of independent directors within the board	Corporate governance report
BGENDER	Proportion of women directors in the board	Corporate governance report
BTENURE	Average tenure of board members	Corporate governance report
BMEETINGS	Number of board meetings by year	Corporate governance report
ASSET	Total assets (logarithm)	Datastream
ROA	Return on assets	Datastream
LEVERAGE	Ratio total debt to total assets	Datastream
Sector dummies	Dummy variables (two-digit SIC codes)	Datastream

Table 2. Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Q1	Median	Q3
CSR reporting	629	1.231	1.748	0.000	0.000	3.000
DIRECTORSHIPS	629	1.420	0.951	0.667	1.333	2.000
BSIZE	629	10.7	3.664	8.000	10.000	13.000
BINDEP	629	0.818	0.128	0,767	0.833	0.909
BGENDER	629	0.131	0.117	0.000	0.111	0.200
BTENURE	629	6.443	4.528	3.286	6.300	9.138
BMEETINGS	629	10.410	4.038	8.000	11.000	12.000
ASSET	629	14.094	2.550	12.270	13.872	15.664
ROA	629	0.077	1.133	0.007	0.043	0.083
LEVERAGE	629	0.648	0.781	0.356	0.602	0.826

Table 3. Correlation matrix

	Variable	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)	CSR reporting	0.290***	0.500***	0.045	0.169***	-0.092**	0.159***	0.628***	-0.015	0.006
(2)	DIRECTORSHIPS		0.274***	-0.123***	0.189***	0.088**	0.135***	0.460***	-0.038	-0.131***
(3)	BSIZE			0.243***	0.097***	0.053	0.116***	0.644***	-0.035	-0.061
(4)	BINDEP				0.049	-0.113***	0.158***	0.007	-0.035	-0.063
(5)	BGENDER					-0.016	0.114***	0.226***	0.070*	0.010
(6)	BTENURE						-0.146***	-0.054	-0.045	-0.126***
(7)	BMEETINGS							0.340***	-0.025	-0.096**
(8)	ASSET								-0.086**	-0.037
(9)	ROA									0.502***
(10)	LEVERAGE									
	VIF	1.36	2.04	1.23	1.09	1.08	1.24	2.49	1.37	1.42

Table 4. Effect of directorships on CSR

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CSR_{t-1} reporting	0.459***	0.448***	0.477***	0.744***	0.510***	0.465***	0.466***
	(0.023)	(0.029)	(0.026)	(0.044)	(0.025)	(0.024)	(0.025)
DIRECTORSHIPS	0.092***	-0.046					
	(0.023)	(0.066)					
$DIRECTORSHIPS^2$		0.035*					
		(0.018)					
1 ADDITIONAL DIRECTORSHIPS			-0.109				
			(0.130)				
2 ADDITIONAL DIRECTORSHIPS				0.574**			
				(0.257)			
3 ADDITIONAL DIRECTORSHIPS					0.951***		
					(0.245)		
4 ADDITIONAL DIRECTORSHIPS						0.869***	
						(0.173)	
MORE 4 ADDITIONAL DIRECTORSHIPS							0.598***
							(0.190)
BSIZE	0.040***	0.043***	0.047***	0.015*	0.045***	0.038***	0.050***
	(0.009)	(0.009)	(0.008)	(0.009)	(0.009)	(0.008)	(0.009)
BINDEP	-0.310*	-0.337*	-0.367**	-0.119	-0.375**	-0.387**	-0.314*
	(0.161)	(0.179)	(0.166)	(0.139)	(0.170)	(0.167)	(0.168)
BGENDER	0.499**	0.201	0.402*	0.287	0.451**	0.396*	0.428**
	(0.230)	(0.227)	(0.220)	(0.203)	(0.212)	(0.224)	(0.204)
BTENURE	-0.008**	-0.006	-0.007*	-0.007	-0.008**	-0.009**	-0.008**
	(0.004)	(0.004)	(0.004)	(0.005)	(0.004)	(0.004)	(0.004)
BMEETINGS	0.004	0.005	0.001	0.001	0.010**	0.005	0.005
	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)	(0.004)	(0.005)
ASSET	0.100***	0.110***	0.113***	0.038**	0.084***	0.115***	0.100***
	(0.016)	(0.017)	(0.014)	(0.019)	(0.015)	(0.017)	(0.016)
ROA	0.000	0.002	0.002	0.000	0.001	0.004***	-0.001
	(0.002)	(0.002)	(0.001)	(0.003)	(0.002)	(0.002)	(0.002)
LEVERAGE	0.023***	0.015**	0.018***	0.020	0.013	0.016***	0.025***
	(0.008)	(0.006)	(0.005)	(0.014)	(0.009)	(0.005)	(0.008)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	530	530	530	530	530	530	530
Wald chi	7256.07***	8696.02***	11093.22***	7312.57***	7968.54***	7784.99***	12295.17***
m2	-0.24	-0.26	-0.22	-0.06	-0.19	-0.19	-0.25
Sargan test	62.05	61.63	67.68	24.24	63.10	67.21	63.36

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 5. Moderating effect of board size, board independence, and gender diversity

	(1)	(2)	(3)
CSR_{t-1} reporting	0.647***	0.439***	0.382***
	(0.044)	(0.023)	(0.032)
DIRECTORSHIPS	-0.082	0.249**	0.058**
	(0.065)	(0.121)	(0.028)
DIRECTORSHIPS*BSIZE	0.012*		
	(0.007)		
DIRECTORSHIPS*INDEP		-0.170	
		(0.160)	
DIRECTORSHIPS*GENDER			0.408*
			(0.238)
BSIZE	0.003	0.040***	0.042***
	(0.012)	(0.009)	(0.010)
BINDEP	-0.042	-0.136	-0.308*
	(0.115)	(0.228)	(0.172)
BGENDER	0.368*	0.294	-0.315
	(0.220)	(0.215)	(0.371)
BTENURE	-0.001	-0.007**	-0.007*
	(0.003)	(0.004)	(0.004)
BMEETINGS	0.004	0.005	0.003
	(0.004)	(0.005)	(0.005)
ASSET	0.069***	0.102***	0.123***
	(0.018)	(0.017)	(0.020)
ROA	-0.000	0.002	0.006**
	(0.003)	(0.002)	(0.003)
LEVERAGE	0.019*	0.015*	0.016**
	(0.011)	(0.008)	(0.008)
Year dummies	Yes	Yes	Yes
Sector dummies	Yes	Yes	Yes
Observations	530	530	530
Wald chi	13130.92***	8697.21***	7070.81***
m2	-0.10	-0.28	-0.30
Sargan test	34.00	64.15	64.35

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Reviewer 1

Recommendation: Major Revision

Comments:

Dear Authors, many thanks for submitting your manuscript to "Journal of intellectual capita". I carefully read your paper and found it very interesting. However, it has some issues that I want to see resolved:

First, we wish to thank the reviewer for all his/her constructive and encouraging comments, which have helped to improve the manuscript significantly. Please find below the individual answer to each of your concerns. For each, we provide an answer explaining how we have addressed the issue, and we indicate the place in the manuscript where the changes can be found (they are highlighted in yellow).

The paper focuses on the board of directors and CSR. However, this is journal of intellectual capital, it is necessary to have a precise focus on the intellectual capital and not as a side topic. In fact, in its current state the paper is lacking from this point of view. Even in the analysis of literature IC is marginally discussed. LR should be rewritten. In particular considering the mechanism that influence the relationship between IC, board of directors and CSR. To hell you to improve the overall quality I suggest you a paper that has been published in 2020 regarding CSR and IC: Nirino, N., Ferraris, A., Miglietta, N. and Invernizzi, A.C. (2020), "Intellectual capital: the missing link in the corporate social responsibility–financial performance relationship", Journal of Intellectual Capital, Vol. ahead-of-print No. ahead-of-print, available at:https://doi.org/10.1108/JIC-02-2020-0038.

We fully agree that the paper needed to position itself better in the literature concerning intellectual capital. Thank you for the reference, which has been very helpful in positioning our manuscript in relation to recent research in this field. To that end, we have made a number of changes to the new version of the manuscript, which are summarized below.

1. As commented on by the Editor, intellectual capital is too broad a term for our study since we specifically refer to board social capital. Accordingly, both the title and the abstract include the term "board social capital".

2. The introduction has been rewritten to better position the manuscript in the literature regarding intellectual capital:

- In the first paragraph, we have emphasized that intellectual capital, corporate social responsibility, and corporate governance, are interrelated concepts that have gained interest in the current environment. In the second paragraph, we have highlighted that research on intellectual capital has grown significantly, that current research calls for a broader approach and that, in particular, some recent studies have emphasized the role of corporate boards of directors in the creation and leveraging of a firm's intellectual capital. In the third paragraph, we have explained that research is increasingly examining the relationship between intellectual capital and corporate social responsibility. In this regard, we have acknowledged the existence of studies (including Nirino et al. (2020) as well as other closely related papers) suggesting that corporate social responsibility improves the firm`s relations with its stakeholders, which positively affects the efficiency of intellectual capital. In addition, we have underlined that another stream of research has examined how boards of directors, as a key source and driver of intellectual capital, may boost corporate social responsibility. Thus, we have explicitly positioned our manuscript in this branch of literature by investigating the relation between multiple board directorships as a relevant component of board social capital and CSR reporting.

- In relation to the contribution, we have focused more on how our findings contribute to intellectual capital literature. Particularly, we extend the evidence concerning multiple directorships, a component of board intellectual capital, and we offer a new perspective to understand how board social capital may generate value for firms by enhancing CSR reporting practices that are likely to increase competitive advantage. In this regard, we have highlighted throughout the introduction that CSR reporting, and particularly the attributes of our CSR reporting measure, are crucial vis-à-vis gaining competitive advantage, which helps to connect the concepts of corporate social responsibility and intellectual capital.

- Throughout the introduction, in order to more accurately position our manuscript, we have specifically indicated that our paper relates to board social capital (i.e. *"multiple directorships… are critical vis-à-vis developing board social capital and, therefore, enhance the intellectual capital of boards of directors", "understanding how board social capital impacts CSR reporting is a central question when it comes to ascertaining how board members provide valuable intellectual capital", "the influence of board social capital is likely to be contingent and to depend on the context"*).

- As a result of all these changes, and considering the suggestion from Reviewer 2, we have summarized from the first version of the manuscript some information that may not be directly related with the new approach of the paper or which may create any kind of duplicity or confusion. For example, the information related to a board's cognitive and behavioral dimensions, to governance failures as well as social and environmental excesses, to studies concerning multiple directorships and the effectiveness of corporate decisions, or the questions that we aim to answer (that are implicit to our objectives).

3. The section regarding the literature review has also been rewritten to focus on intellectual capital:

- In the first paragraph, we have broadly defined intellectual capital and acknowledged that the most recent research trends have considered new aspects related to intellectual capital, such as the environment and sustainability.

- In the second paragraph, we have underlined that recent studies indicate that corporate social responsibility can help firms develop intangible value and lead to competitive advantage.

- In the third paragraph, we have identified the previous literature that emphasizes the role of boards of directors in creating and strengthening a firm's intellectual capital.

- In the fourth paragraph, we have briefly reviewed the literature on board social capital and, from the point of view of the resource dependence theory, we have provided general explanations to understand why board social capital is expected to be important to manage environmental and social challenges.

- In the fifth paragraph, we have provided theoretical arguments to connect multiple directorships and CSR reporting, bearing in mind that this is key to mitigating environmental uncertainty and gaining competitive advantage. In this regard, in the sixth paragraph, we have explained that our aggregate measure for CSR reporting (which considers the publication of stand-alone CSR reports, compliance with GRI guidelines, the level of application of GRI guidelines, and the external assurance of information) enables us to ascertain how board social capital provides intellectual capital by promoting CSR reporting practices that are expected to improve the competitive advantage of firms. Specifically, we have highlighted that CSR reporting remains key to mitigating environmental uncertainty and gaining competitive advantage and, in addition to the disclosure of a CSR report, compliance with GRI guidelines, its application level, and that external assurance of this information is crucial vis-à-vis enhancing competitive advantage and corporate value. This helps to understand the theoretical connection between multiple directorships and our measure for CSR reporting. Specifically, multiple directorships are expected to serve as a source of intellectual capital and to lead to board members accumulating valuable resources to gain competitive advantage through improving these CSR reporting initiatives.

- Finally, some information regarding the justification of hypotheses H2, H3, and H4, related to the moderating effects, has been summarized.

4. In section "4.3 Discussion", we have also discussed our main results from an intellectual capital perspective (first and second paragraph).

3. Regarding methodology. The description of the sample is very poor. You wrote that you collected 530 observation from 2011 to 2017, I seriously wonder if they are enough. however, even the description of the variables is only sketchy.

In the new version of the manuscript, we have provided more accurate information about the sample selection and the variables design.

First, in Section 3.1 "Sample", we have explained the selection of the period, and that some observations were dropped because not all of the necessary specific information on board members or financial characteristics was available. In addition, we have indicated that our analysis is based on an unbalanced sample composed of 629 firm-year observations for 115 companies (there was a typo in the previous version of the manuscript, 530 observations are the result of employing GMM methodology, which lags the dependent variable and leads to a reduction in the number of observations, although this only affects Tables 5 and 6). Furthermore, we have explained that our sample is representative, since these firms represent most of the capitalization of the Spanish stock exchange and are more visible, with CSR reporting being a crucial strategy for increasing their organizational competitiveness. Therefore, previous studies on the Spanish context have generally considered similar samples: for example, Fuente et al. (2017) use a sample of 686 observations; Blanco-Alcántara et al. (2019) use a sample of 210 observations; Bravo and Reguera-Alvarado (2019) use a sample of 375 observations; Tejedo-Romero and Araujo (2020) use a sample of 325 observations. In summary, our sample covers the most representative firms in the Spanish context, and a seven year period is a suitable setting for panel data analysis (Fuente et al., 2017).

Second, we have provided more information regarding the variables included in the empirical analysis, as commented on below as a response to the next comment.

There are many methodologies for evaluating CSR, I would like to see explained why you consider yours the best to achieve the objectives of your study. As it is written now, it would seem that you have taken one measure like any other. All other variables are barely reported, also for these I wanted to see a precise description.

We fully agree that our measure of CSR reporting needed further explanation. In this regard, we have expanded the information about this measure both in the theoretical framework and in the empirical design:

- In Section 2 "Theoretical framework and hypothesis development", we have explained why our CSR reporting measure is suitable for achieving the objectives of our studies. In the fifth paragraph, we have indicated that multiple directorships may become a source of competitive advantage and, in this regard, we have explained why multiple directorships are likely to increase boards' awareness and their capacity to enhance the level of CSR reporting to respond to society's expectations and attain competitive advantage. In the sixth paragraph, we have explained that, in addition to the disclosure of a CSR report, compliance with GRI guidelines, its application level, and external assurance of this information are crucial for enhancing competitive advantage and corporate value. As our study, consistent with previous research on corporate social responsibility and intellectual capital, considers that CSR reporting is a crucial strategy for competitive advantage, our measure remains particularly relevant since the information attributes included in this measure are theoretically related to the creation of competitive advantage. Therefore, our measure enables us to ascertain how board social capital provides intellectual capital by promoting CSR reporting practices that are expected to improve firms' competitive advantage.

- Second, in Section 3.2 "Variables", we have provided more information on the design of this variable, and its single components have been explained more in detail.

In addition, following your suggestion, we have provided more precise information about other variables, such as multiple directorships (DIRECTORSHIPS), board size

(BSIZE), board independence (BINDEP), board gender diversity (BGENDER), and board activity (BMEETINGS). Furthermore, we have included the sources of the data in Table 1 "description of variables".

4. The model used is very well described and the authors are concerned about endogeneity problems. Paper has methodological rigor which makes the results obtained valid to lead to important contributions.

5. As in the other parts of the paper, the contributions must also focus more on the intellectual capital.

In the new version of the manuscript, we have expanded both the contributions included in the introduction and the discussion related to the main results in order to focus more on intellectual capital.

First, in the Introduction, we have explained how our paper contributes to the literature on intellectual capital by exploring in greater depth the connections between board intellectual capital and CSR, and extending the evidence concerning how board social capital may generate value for firms.

Second, in Section 4.3 "Discussion", we have indicated how our results contribute to the literature concerning the connections between intellectual capital and CSR, and to the literature regarding the role of boards of directors as a source and a driver of intellectual capital. We have emphasized that our evidence reinforces the idea regarding board social capital as a source of intellectual capital that helps to create and strengthen corporate value and, particularly, that multiple directorships are proven to be decisive for developing superior CSR reporting, which is likely to result in gaining competitive advantage. In this regard, we indicate that multiple directorships provide the board with valuable intangible resources to improve CSR reporting. We therefore align with previous research which suggests that firms need to exploit every form of capital efficiently, and specifically to pay attention to the intellectual capital of the board of directors.

6. I believe that both limits and future lines of research need to be expanded.

Following your suggestion, we have expanded the limitations and future lines of research included in Section 5 "Conclusions". Specifically, we have highlighted that our paper focuses only on large listed firms, and on one specific element of board social capital. Thus, in order to obtain more conclusive evidence, future research on this topic could explore SME enterprises as well as other attributes related to board social capital and board human capital. Considering the indications from Reviewer 2, we have also mentioned that the diversified nature of the data sourcing is also a common limitation inherent to this type of study.

Overall, I think your paper has a great potential despite the issues that I underlined. Good luck.

We hope we have satisfactorily addressed all of your comments and we again thank you for your helpful and encouraging insights.

References

Blanco-Alcántara, D., Díez-Esteban, J. M., and Romero-Merino, M. E. (2019), "Board networks as a source of intellectual capital for companies", *Management Decision*, Vol. 57, No. 10, pp. 2653-2671. https://doi.org/10.1108/MD-12-2017-1238

Bravo, F., and Reguera-Alvarado, N. (2019), "Sustainable development disclosure: Environmental, social, and governance reporting and gender diversity in the audit committee", Business Strategy and the Environment, Vol. 28, No. 2, pp. 418-429. https://doi.org/10.1002/bse.2258

Fuente, J. A., García-Sanchez, I. M., & Lozano, M. B. (2017). The role of the board of directors in the adoption of GRI guidelines for the disclosure of CSR information. Journal of Cleaner Production, 141, 737-750.

Tejedo-Romero, F. and Araujo, J.F.F.E. (2020), "The influence of corporate governance characteristics on human capital disclosure: the moderating role of managerial ownership", Journal of Intellectual Capital, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/JIC-03-2019-0055

Reviewer: 2

Recommendation: Minor Revision

Comments:

The paper analyses the way through which multiple board directorship affects CSR reporting. In particular the study investigates the moderating effect of three corporate governance (CG) variables (board size, board independence and gender diversity) on CSR reporting.

Thank you for your comments and suggestions which have helped to improve the manuscript. After each concern, we have indicated how we have addressed it and where the changes can be found in the manuscript (they are highlighted in yellow).

The abstract synthetises all the content of the manuscript. From the introduction, it is clear the aim of the study. However, we suggest to summarize the paragraph in less text.

Following your suggestion, we have summarized or trimmed some of the previous paragraphs of this section. In the new version of the manuscript, the introduction has been modified, considering the comments from Reviewer 1, to position the paper in the literature on intellectual capital in a clearer way. As a result, we have summarized from the first version of the manuscript, some information that may not be directly related with the new approach of the paper or which may create any kind of duplicity or confusion. For example, the information related to a board's cognitive and behavioral dimensions, to governance failures as well as social and environmental excesses, to studies concerning multiple directorships and the effectiveness of corporate decisions, or the questions we aim to answer (that are implicit to our objectives).

The theoretical background and hypothesis development are well organized. Consistent with the introduction (p.4, 23-32 lines), it is deepened the role of board of directors in CSR decision making processes under the key perspective of resource dependence theory. In the sub-paragraph "board gender diversity and CSR reporting", gender diversity should be defined.

Following your suggestion, board gender diversity has been defined in that section (page 9), clarifying that the literature has generally represented it as female representation on boards of directors.

About the methodology, the measurement of the independent variable needs further explanation, especially with reference to the single components and the index construction.

In the current version of the manuscript, in Section 3.2 "Variables", we have provided more information on the design of this variable, and its single components have been explained more in detail.

Furthermore, in the table 1 "description of variables", we suggest to write the sources of the data from which the variables are obtained.

Following your recommendation, we have included the sources of the data in Table 1 "description of variables".

Moreover, the study lacks the number of the observed firms.

Thank you for this comment. In general, we have provided more information on the sample in Section 3.1 "Sample". Specifically, we have explained the selection of the period, and that some observations were dropped because not all the necessary specific information on board members or financial characteristics was available. In addition, we have indicated that our analysis is based on an unbalanced sample composed of 629 firm-year observations for 115 companies (there was a typo in the previous version of the manuscript, 530 observations are the result of employing the GMM methodology, which lags the dependent variable and leads to a reduction in the number of observations, although this only affects Tables 5 and 6). Furthermore, we have explained that our sample is representative, since these firms represent most of the capitalization of the Spanish stock exchange and are more visible, with CSR reporting being a crucial strategy for increasing their organizational competitiveness.

It would be useful to clarify why the mediating effect of CG variables is analysed (table 5); is it the same of moderator?.

Thank you for this comment. This was an error. We analyze the moderating effect and we therefore have amended the title of Table 5.

Regards the limitations of the study, the diversified nature of the data sourcing could be considered as a limitation inherent this type of study.

Following your suggestion, we have mentioned that the diversified nature of the data sourcing is also a common limitation inherent in this type of study. In addition, and considering the indications from Reviewer 1, we have also expanded limitations and future lines of research by highlighting that our paper focuses only on large listed firms, and on a specific element of board social capital. Thus, in order to obtain more conclusive evidence, we have acknowledged that future research on this topic could explore small and medium enterprises as well as other attributes related to board social capital and board human capital.

Furthermore, we suggest to create an explanatory figure, in which the authors could illustrate the theoretical and empirical framework.

Following your recommendation, we have included Figure 1 to explain graphically our research hypotheses and the main variables of our empirical approach.

In conclusion, the bibliography could be enriched with the following reference: Fernandez-Feijoo, B., Romero, S., & Ruiz-Blanco, S. (2014). Women on boards: do they affect sustainability reporting?. Corporate Social Responsibility and Environmental Management, 21(6), 351-364.

Coulmont et al. (2015), Determinants and impacts of sustainability disclosure, in Songini L., Pistoni A. (eds.), Sustainability disclosure: state of the art and new directions, Emerald Books.

GangiDeterminants of corporate social disclosure through a multi-perspective approach: evidences from target companies of socially responsible funds (2013), in Songini et al. (eds.), Accounting and control for sustainability. Emerald Books.

Thank you very much for the references. They have been included in the manuscript.

Finally, considering the comments from Reviewer 1, some parts of the introduction, theoretical framework, and discussion have been modified, to better position the manuscript from an intellectual capital view. We hope we have satisfactorily addressed all of your comments and we again thank you for your helpful insights.