Received 10 April 2022
Revised 18 November 2022
23 January 2023
28 April 2023
Accepted 5 May 2023

Configurational analysis of corporate governance and corporate social responsibility reporting assurance: understanding the role of board and CSR committee

Zeena Mardawi and Aladdin Dwekat
Department of Accounting, An-Najah National University, Nablus, Palestine

Rasmi Meqbel
Department of Accounting, Business School, The Hashemite University, Zarqa, Jordan, and

Pedro Carmona Ibáñez
Accounting Department, Universitat de València, Valencia, Spain

Abstract

Purpose – Reacting to the calls in the contemporary literature to further examine the relationship between board attributes and firms' decisions to obtain corporate social responsibility assurance (CSRA) through the use of pioneering techniques, this study aims to analyse the influence of such attributes together with the existence of a corporate social responsibility (CSR) committee on the adoption of CSRA using fuzzy set qualitative comparative analysis (Fs-QCA).

Design/methodology/approach – Fs-QCA was performed on a sample of nonfinancial European companies listed on the STOXX Europe 600 index over the period 2016–2018.

Findings – The study findings indicate that the decision to obtain a CSRA report depends on a complex combination of the influence of the CSR committee and certain board attributes, such as size, experience, independence, meeting frequency, gender and CEO separation. These attributes play essential contributing roles and, if suitably combined, stimulate the adoption of CSRA.

Practical implications – The study findings are important for policymakers, professionals, organisations and regulators in forming and modifying the rules and guidelines related to CSR committees and board composition.

Originality/value – To the best of the authors' knowledge, this study represents the first examination of the impact of board attributes and CSR committees on the adoption of CSRA using Fs-QCA method. It also offers a novel methodological contribution to the board-CSRA literature by combining traditional statistical (logistic regression) and Fs-QCA methods. This study emphasises the benefits of Fs-QCA as an alternative to logistic regression analysis. Through the use of these methods, the research illustrates that Fs-QCA offers more detailed and informative results when compared to those obtained through logistic regression analysis. This finding highlights the potential of Fs-QCA to enhance our understanding of complex phenomena in academic research.

Keywords Corporate governance, Corporate social responsibility assurance, CSR committee, Board attributes, Qualitative comparative analysis

Paper type Research paper

Meditari Accountancy Research
Vol. 32 No. 2, 2024
pp. 512-542

2049-372X
DOI 10.1108/MEDAR-04-2022-1654

Conflict of interest statement: The authors declare that there is no conflict of interest.

1. Introduction

In the past decade, there has been noteworthy progress in corporate social responsibility disclosure (CSRD) to show companies' commitment to sustainability issues (Al Natour *et al.*, 2023; Alshorman *et al.*, 2022; Al Natour *et al.*, 2022; Kolk and Perego, 2010; Simnett *et al.*, 2009). A recent survey conducted by KPMG demonstrates that 96% of 250 world's largest companies [1] contain CSR-related disclosures in their annual reports, believing that CSR is relevant for their current and potential investors (KPMG, 2022). This thriving importance and popularity of CSRD, however, is coupled with certain complexities and a lack of unified guidance (Alia and AbuSarees, 2023; Mardawi *et al.*, 2021; Alia and Mardawi, 2021; Bouten and Hoozée, 2015), which has led users to raise some concerns regarding the reliability, materiality, completeness and comparability of CSRD (Abu Alia *et al.*, 2022; Radhouane *et al.*, 2020; Muslu *et al.*, 2019; Miras-Rodriguez and Di Pietra, 2018; Dobbs and van Staden, 2016; Peters and Romi, 2015). One key measure that could be used to improve this credibility gap and to reinforce the level of trust in CSRD is to have such disclosure assured by external independent third parties (Velte, 2021; Quick and Inwinkl, 2020; Maroun, 2018, 2019; Simnett and Huggins, 2015; Maroun and Atkins, 2015; Cohen and Simnett, 2015; Perego and Kolk, 2012; Simnett *et al.*, 2009). According to Jones and Solomon (2010), the assurance of CSRD can help to enhance the credibility of CSRD through the role of assurance providers in evaluating companies' CSR information standards, gathering evidence and offering an independent opinion.

Board members' responsibilities and roles are not only limited to monitoring management activities but also extend to achieving legal and moral compliance for the entity (Kayed and Meqbel, 2022; Kayed *et al.*, 2022; Dwekat *et al.*, 2018; Martinez-Ferrero and Garcia-Sanchez, 2017). It is suggested that the board performs a central role in defining the company's socially responsible behaviours and the accountability level of different interest groups (Bear *et al.*, 2010). Moreover, according to García-Sánchez (2020), board members' efficiency can reduce agency problems and determine the need for a high CSRA quality level.

Nonetheless, while a significant stream of empirical research highlights the critical role of the board of directors in enhancing CSR performance and disclosure (Biswas *et al.*, 2022; Zaman *et al.*, 2021b; Oware and Appiah, 2021; Girella *et al.*, 2021; Arayssi *et al.*, 2020; Muttakin and Subramaniam, 2015; Jizi *et al.*, 2014; Khan *et al.*, 2013; Frias-Aceituno *et al.*, 2013; Jo and Harjoto, 2011; Bear *et al.*, 2010), little attention has been paid to the association between board attributes and CSRA (Liao *et al.*, 2018; Miras-Rodriguez and Di Pietra, 2018; Martinez-Ferrero and Garcia-Sanchez, 2017). In addition, most of the results of these works are inconclusive (Dwekat *et al.*, 2020b). A rational explanation for this could derive from the symmetrical methods (e.g. regression analysis) that are used by the majority of the studies, assuming that the influence of a particular independent variable on the dependent variable is sufficient to obtain an outcome (Khan *et al.*, 2018). Recently, García-Sánchez *et al.* (2021) introduced a valuable method to explore the impact of different external and internal corporate governance (CG) mechanisms on the adoption of CSRA. Their results indicate that various configurations of CG attributes complement each other in enhancing the credibility of nonfinancial disclosure through CSRA. However, the results were obtained based on logistic regression analysis, which is subject to author bias regarding the selection of interactions between only two variables.

According to Paniagua *et al.* (2018), the fuzzy set qualitative comparative analysis (Fs-QCA) method could solve the indecisive results and identify the complex connections among the antecedents. Such an analytical method generates algorithms to define the combinations that interact and influence a particular dependent variable (Fiss, 2007). In this respect,

Cucari (2019) argues that employing Fs-QCA in CG studies can be critical in identifying the combinations of characteristics that create a better CG structure. In this vein, recent studies in the field of CG have highlighted the need for a more holistic approach instead of a one-size-fits-all perspective. As noted by authors such as Santamaria *et al.* (2021), Gupta and Mittal (2021), Dwekat *et al.* (2020a), Cucari (2019) and Jain and Jamali (2016), CG regulations should take into account the unique characteristics and contexts of individual companies, including their size, ownership structure, industry and business model. To this end, this study proposes using the Fs-QCA method, which combines qualitative and quantitative techniques in analysing the interactions between different board attributes and their impact on CG outcomes. This approach, known as "a configurations perspective," recognizes that different boards may have distinct compositions and yet still be effective in achieving their goals and objectives.

Consequently, reacting to the calls from several scholars (Dwekat *et al.*, 2020a; Zaman *et al.*, 2020; Cucari, 2019) to employ pioneering techniques and to further examine the relationship between board attributes and firms' decisions to obtain CSRA (Velte, 2021; García-Sánchez, 2020; Farooq and de Villiers, 2017), using Fs-QCA this study tests the influence of such attributes (namely, board size, board gender diversity, board meetings, board independence and board experience) and the CSR committee on decisions to adopt CSRA. Contextually, this is achieved using a sample of nonfinancial European companies listed on the STOXX 600 index over 2016–2018. The data were collected for 895-year observations from the ASSET4-Thomson Reuters database. Applying Fs-QCA, our findings indicate that the decision to obtain a CSRA report depends on a combination of the net effects of the presence of a CSR committee and board attributes. We also conclude that such attributes could positively or negatively influence the decision to obtain a CSRA report, depending on the presence or non-presence of other attributes simultaneously. Moreover, our outcomes imply that more than one optimal configuration of CSR committee existence and board attributes leads to the adoption of CSRA.

Overall, the study makes several significant contributions to the current literature. *Firstly*, it contributes by developing and expanding the investigation into the nascent CSRA field. To the best of the authors' knowledge, this is the first research paper that applies a configurational approach (Fs-QCA) to the effect of the presence of a CSR committee and board attributes on CSRA adoption. *Secondly,* this study presents a novel methodological contribution to contemporary literature by combining both traditional statistical analysis methods, such as logistic regression and Fs-QCA approaches. Using these two methods, our research demonstrates that Fs-QCA is a valuable alternative to traditional statistical analysis methods in CG research. One key advantage of Fs-QCA is its ability to handle complexity and nuance in causal relationships, which are commonly present in social scientific research. Furthermore, Fs-QCA allows for the simultaneous examination of multiple causal paths, providing a more comprehensive understanding of the underlying mechanisms driving a given phenomenon. Additionally, Fs-QCA can identify necessary and sufficient conditions for an outcome to occur, which is not possible with traditional statistical methods. Thus, our study highlights the utility of Fs-QCA in providing a more nuanced understanding of causal relationships in CG research. *Thirdly,* while most previous investigations are focused on one country, such as UK, Australian and US companies, this study implements a European-level approach, including 17 countries. Therefore, the study outcomes will be essential for professionals, policymakers and regulators to form and modify the rules and guidelines related to CSR committees and board composition. Moreover, it presents new insights and directions for forthcoming research using a novel methodological method (Fs-QCA) and indicates new empirical outcomes regarding the

influence of the CSR committee and board attributes on the adoption of CSRA. Our results also recommend some key attributes relating to developing and analysing board and CSR committee rules.

To address these issues, the remainder of the research is structured as follows. Firstly, the literature review (Section 2) provides a theoretical and empirical overview of CSRA and its connection with board attributes and the existence of a CSR committee. The methodology section (Section 3) then discusses the sample selection, data sources, and variable measurement, while the final two sections (Section 4 and 5) consist of the empirical findings, a discussion of the outcomes, and concluding remarks.

2. Literature review

Corporate social responsibility (CSR) is increasingly becoming a subject of interest for businesses, consumers, academic literature and other stakeholders (Dwekat *et al.*, 2022). As a result, most companies are becoming responsive to society's expectations and stakeholders at large (Mardawi *et al.*, 2023). Thus, they consider it a fundamental part of overall firm strategies. In this regard, a significant milestone was accomplished with the European Union (EU) Directive 95/2014 approval (European Directive, 2014) and covers the nonfinancial disclosure and diversity information by large firms (Lombardi *et al.*, 2021; Doni *et al.*, 2020). The Directive was aimed at firms with more than 500 employees, requiring them to publish information on environmental and social issues, employment, respect for human rights and measures taken to combat corruption and bribery, starting in 2017. It was expected to significantly contribute to long-term economic growth and sustainability by enabling analysis of the company's social impact, identifying risks to sustainability and enhancing stakeholder confidence (Sierra-Garcia *et al.*, 2018).

Many companies have published stand-alone reports on CSR, sustainability, intellectual capital, value, environmental, social and governance and integrated reporting (Bianchi Martini *et al.*, 2016). There is, however, no common standard or framework for the disclosure of nonfinancial information (European Commission, 2017). In different EU countries, such as Italy, a public consultation by the Ministry of Economy and Finance confirmed that the most critical issues are the choice of reporting standards/guidelines and the placement of nonfinancial information within corporate reporting (Doni *et al.*, 2020). The selection of the "best" type of report and the "best" framework could cause operational problems for those responsible for preparing (Global Reporting Initiative, 2016) and assuring the CSRD by auditors that have to assess at least whether the information is present (Doni *et al.*, 2020) the reports. However, some EU companies tend to refer to the standards drawn up by the Global Reporting Initiative (GRI) (2016) and the international integrated reporting council (IIRC) (IIRC – International Integrated Reporting Council, 2013).

2.1 The need for corporate social responsibility reporting and assurance

The rise in the number of CSR statements has not been accompanied by an improved level of community trust (Martínez-Ferrero and García-Sánchez, 2018); the completeness and credibility of CSRD have been broadly criticised in previous studies (Al-Shaer and Zaman, 2018; Miras-Rodriguez and Di Pietra, 2018; Cahan *et al.*, 2016; Cheng *et al.*, 2015; Zorio *et al.*, 2013; Simnett *et al.*, 2009). These argue for the need for an assurance process that certifies such quality issues (de Villiers *et al.*, 2017; Farooq and de Villiers, 2020). In particular, voluntary CSRD is not valuable if it is perceived to lack reliability and credibility (Coram *et al.*, 2009).

Although Directive 95/2014 does not require verification of the report's content, in many countries, this is done by an independent external provider to enhance the reliability and

credibility of the information presented (Doni *et al.*, 2020; Simnett *et al.*, 2009). In the assurance of CSRD, the external provider informs on the organisation's performance regarding environmental and social issues (Sierra-Garcia *et al.*, 2018). According to the proposed draft for a CSRD in April 2021, it will be obligatory for all large and listed firms (excluding listed micro-firms) on regulated markets within the EU to have limited assurance by an independent assurer (such as an auditing firm) (European Commission, 2021b). The assurance of CSR reporting by independent external third parties is argued to be a powerful tool to improve transparency and bridge credibility gaps (Velte, 2021; Cohen and Simnett, 2015; Perego and Kolk, 2012; Simnett *et al.*, 2009).

2.2 Contribution of board attributes and the existence of a corporate social responsibility committee on the adoption of corporate social responsibility assurance

Assessing the relationship between governance and the adoption of CSRA requires thoroughly examining various governance attributes. These attributes include the composition and structure of the board of directors, the CSR committee's role and functions and the board's level of independence in relation to CSRA. Furthermore, the level of engagement of the board in the adoption of CSRA and the alignment of the CSRA strategy with the overall business strategy is also crucial aspects to consider when evaluating the relationship between governance and the adoption of CSRA. Therefore, a comprehensive examination of these governance attributes and the board's role is essential to fully grasp the relationship between governance and the adoption of CSRA.

Board members' responsibilities not only concern monitoring and controlling management but also extend to guaranteeing the implementation of coherent company decisions and aligning the interests of agents and principals (Martinez-Ferrero and Garcia-Sanchez, 2017). In this context, the board performs a central role in determining a company's socially responsible behaviour and the level of accountability of the different interest groups (Bear *et al.*, 2010). Moreover, it is suggested that the board members' efficiency could reduce agency costs and determine the need to obtain a high CSRA quality level (García-Sánchez, 2020). According to Farooq *et al.* (2021), effective board composition is associated with a high degree of materiality assessment in CSR reports. Maroun (2022) recently posits that the monitoring attributes of boards of directors can foster the use of assurance services pertaining to environmental, social and governance (ESG) matters. Such services can encompass both limited assurance (of a moderate degree) and reasonable assurance (of a high degree). Monitoring attributes of boards of directors, therefore, have a positive impact on the utilisation of ESG assurance services. Although a significant stream of empirical research highlights the substantial role of the board in improving CSRD and related performance, little attention has been paid to the association between the board and CSRA (García-Sánchez *et al.*, 2021; Martinez-Ferrero and Garcia-Sanchez, 2017; Martinez-Ferrero *et al.*, 2017; Liao *et al.*, 2018; Miras-Rodriguez and Di Pietra, 2018). Moreover, most previous results are indecisive (García-Sánchez *et al.*, 2021).

2.2.1 Board size. As argued by Khan *et al.* (2013), a larger board will have diverse skills and experiences from its various stakeholder groups, which enrich its capability to monitor and organise the firm's disclosures. Moreover, according to Liao *et al.* (2018), a larger board can incorporate various perspectives from different stakeholders and can devote more energy and resources to fulfilling their roles in social activity and performance. From this perspective, previous studies have indicated a positive association between board size and decisions to obtain CSRA reports (Aladwey *et al.*, 2022; García-Sánchez *et al.*, 2021; Liao *et al.*, 2018; García-Sánchez and Martínez-Ferrero, 2017; Peters and Romi, 2015; Rao *et al.*, 2012). Moreover, García-Sánchez (2020) found that larger boards increase the quality of

CSRA. However, other studies have found no connection between CSRA and board size (Oware *et al.*, 2022; Miras-Rodriguez and Di Pietra, 2018; Kend, 2015).

2.2.2 Board gender diversity. Furthermore, previous research indicates that a higher percentage of females on the board enhances its supervisory tasks (Gul *et al.*, 2011); results in additional monitoring efforts; improves the CSRD level (Jizi, 2017; Nekhili *et al.*, 2017; Sundarasen *et al.*, 2016; Cuadrado-Ballesteros *et al.*, 2015); and demands more managerial accountability and transparency (Adams and Ferreira, 2009). It has also been found that women board members with specific skills and practical knowledge are associated with better orientation concerning social issues and stakeholders (Ramon-Llorens *et al.*, 2021). In addition, according to Liao *et al.* (2018), García-Sánchez (2020), García-Sánchez *et al.* (2021), Aladwey *et al.* (2022) and Girón *et al.* (2022), higher representation of women in the boardroom leads to better adoption of CSRA. Buertey (2021) recently investigated the connection between CSRA and gender diversity. His results reveal that more female board members lead to better CSRA implementation. Moreover, another interesting study by García-Sánchez *et al.* (2021) indicates that combining women board members and CSR committees would lead to higher CSRA implementation. On the other hand, other studies indicate a significant negative association between board gender diversity and CSRD (Cucari *et al.*, 2018; Giannarakis, 2014). Such results suggest that female directors do not necessarily have a different outlook. Besides, according to Dwekat *et al.* (2021), the association between female board members and CSR can be complex, as they have other attributes, such as independence, experience and age, that could influence the association.

2.2.3 Board independence. Similarly, consistent with the agency theory view, independent board members are more efficient in meeting stakeholder interests (Zahra and Stanton, 1988), reducing any conflict of interests between different stakeholders, thus leading to better monitoring and control of CSRD (Khan *et al.*, 2013). Consequently, independent board members strengthen the need for all firms to provide credible and truthful information, assured by outside professionals, to all interested parties and shareholders (García-Sánchez, 2020). In this respect, most previous investigations have found that a higher ratio of independent members on the board positively impacts the adoption of CSRA (Martinez-Ferrero *et al.*, 2017; Martinez-Ferrero and Garcia-Sanchez, 2017; Peters and Romi, 2015). In addition, Miras-Rodriguez and Di Pietra (2018) found that a lower percentage of executive board members positively impacts CSRA decisions. In contrast, recent investigations have reported a significant negative association between board independence and the adoption of CSRA (García-Sánchez *et al.*, 2021) and CSRA quality (Zaman *et al.*, 2021a). In addition, García-Sánchez *et al.* (2021) conclude that the positive association between the presence of a CSR committee and the adoption of CSRA is weakened if the percentage of independent board members increases. This result suggests that implementing a bundling effect by combining independent directors with other board variables will lead to better CSRA implementation. However, Aladwey *et al.* (2022) and Oware *et al.* (2022) indicate an insignificant relationship between board independence and the adoption of CSRA.

2.2.4 Board experience. Board experience is another critical factor that enhances the monitoring process (Chan *et al.*, 2014); allows comprehension of company functions (Harjoto *et al.*, 2015); and increases knowledge, skills and proficiency regarding an organisation's decisions. In this regard, Maroun and Prinsloo (2020) and Aladwey *et al.* (2022) suggest that the experience of the board members is one of the most critical factors that enhances the adoption of CSRA. However, on the other hand, Handajani *et al.* (2014) found that board experience was associated with lower CSR. They claim that long-term relations with other management members and board directors impair their supervision,

monitoring and control of managers, which can harm corporate sustainability in the long run. In addition, Hafsi and Turgut (2013) indicate an insignificant association between a diversity of experience and CSR performance. They argue that more experienced board members might be too close to executives and avoid controversy in decision-making processes, while less experienced ones may be too shy to speak up.

2.2.5 Board meetings. Board meetings are an essential communication mechanism for outside board members to understand managerial decision-making and a company's operations and to effectively enable their involvement in company governance (Liao *et al.*, 2018). According to Chen *et al.* (2006), frequent board meetings are associated with increased insight and vigilance by top management. In addition, Laksmana (2008) states that an active board promotes stakeholders' interests by delivering higher disclosure transparency. Therefore, frequent board meetings positively affect the adoption of CSRA (Garcia-Sanchez, 2020). However, some scholars argue that more frequent board meetings may lead to inoperability or board members exceeding their functions, consequently affecting business performance negatively (Pucheta-Martínez and Chiva-Ortells, 2018). In contrast, Aladwey *et al.* (2022) found an insignificant association between the frequency of board meetings and the adoption of CSRA.

2.2.6 CEO duality. Agency theory indicates that CEO duality decreases the efficiency of the various CG mechanisms and encourages opportunistic managerial behaviour. In this way, executives intending to work towards their own benefits will strive for CSRA services that allow them to legitimise themselves before society, with less interest shown in service contracted quality (García-Sánchez, 2020). This argument is supported by Liao *et al.* (2018), who indicate that the separation between the board chairman and CEO leads to greater CSRA implementation. In contrast, other scholars indicate that CEO duality positively affects the adoption of CSRA (García-Sánchez *et al.*, 2021), CSRA quality Garcia-Sanchez (2020) and CSR scores (Bear *et al.*, 2010; Jizi *et al.*, 2014; Nekhili *et al.*, 2017). They argue that powerful CEOs are likely to employ CSR as a means of improving their reputation and image, increasing their tenure or compensation and helping them be more successful. In addition, the stewardship theory perspective suggests that CEO duality can promote unified and strong leadership, support efficient management, improve sufficiency and responsiveness in using vital resources and enable strategic decision-making.

2.2.7 Corporate social responsibility committee. Ullmann (1985) argues that the CSR committee's existence in the company is an obvious sign of the level of CSR involvement. The primary roles of the CSR committee include the monitoring of CSR policies and performance, which will assist the board in monitoring and adopting better sustainability patterns (Cucari *et al.*, 2018; Liao *et al.*, 2018; Nekhili *et al.*, 2017; Helfaya and Moussa, 2017; Post *et al.*, 2011) and enhancing the credibility of voluntary disclosure through the dissemination of external assurance reports (Martinez-Ferrero and Garcia-Sanchez, 2017). In this vein, García-Sánchez *et al.* (2019) report that a sustainability committee simplifies the implementation of GRI-IFC policy, therefore supporting environmental management policy systems and strategies and improving interaction with stakeholders. In the same manner, previous studies have found a positive association between the CSR committee and the adoption of CSRA (Uyar *et al.*, 2022; García-Sánchez *et al.*, 2021; Datt *et al.*, 2018; Peters and Romi, 2015), and the quality of CSRA (Rossi and Tarquinio, 2017). In addition, García-Sánchez *et al.* (2021) examined the interaction effect between the CSR committee and other CG variables, concluding that the presence of such a committee strengthens the impact of the external and internal (i.e. board gender) CG attributes, apart from board independence. They also point out that applying a bundling effect by combining CSR committees with other board variables will lead to higher adoption of CSRA. However, contrary to other

findings, Al-Shaer and Zaman (2018) found that the CSR committee was negatively linked with the adoption of CSRA.

2.3 Complexity theory

At present, the use of complexity theory in the CG-CSR field has attracted greater interest among academics. As stated previously, a reasonable justification for this is that the outcomes of the majority of preceding works are inconclusive. For example, Dwekat *et al.* (2020b) recently applied complexity theory to examine the influence of board and audit committee attributes on CSRD. In the same vein, drawing on such theory, Cuadrado-Ballesteros *et al.* (2017) linked specific board and firm characteristics and CSR performance scores. Other researchers have linked financial and CSR performance using a configurational approach (Isaksson and Woodside, 2016).

Furthermore, in their recent board-CSR review, Zaman *et al.* (2020) indicate that such assessment and reasoning of complexity theory tenants using the Fs-QCA method offer fruitful and novel advancements in the board-CSR field. In this respect, we developed our research based on the main principles of complexity theory (complexity and equifinality). The complexity principle implies that different conditions (independent variables) will influence particular antecedents of a specific dependent variable (outcome) (Greckhamer *et al.*, 2018; Ragin and Fiss, 2017). According to Fiss (2007) and Woodside (2013), the same recipe could be produced with the same ingredients; therefore, independent variables could influence a specific dependent variable (outcome) either negatively or positively, relying on the presence or non-presence of other independent variables simultaneously. The equifinality principle indicates that results might be obtained using more than one optimal bundle, as different bundles could lead to the same result (Misangyi *et al.*, 2017; Fiss *et al.*, 2013).

Previous board and CSRA studies have reached indecisive findings. A reasonable explanation for such outcomes is that the majority of these studies use symmetric approaches (for example, regression) to test the hypotheses, supposing that the influences of independent variables on the dependent variable are sufficient and essential to obtain the outcome (Dwekat *et al.*, 2020b; Woodside, 2013).

The choice to obtain a CSRA report is affected by different bundles of such board attributes and the presence of a CSR committee but not by one particular board attribute (e.g. board size, board meeting, board gender diversity, board experience and independence) or CSR committee, and there is also more than one optimal bundle of attributes to obtain CSRA. Therefore, this study investigates which CSR committee and board attribute bundles lead to CSRA. Based on the preceding discussion, and depending on complexity (*P1*) and equifinality (*P2*) principles, our study propositions are:

P1. The effect of specific board attributes and the existence of a CSR committee on the adoption of CSRA depends on other board attributes.

P2. Different bundles of CSR committee presence and board attributes lead to CSRA.

3. Methodology

3.1 Sample selection and data sources

The study sample consisted of European firms listed on the STOXX Europe 600 from 2016 to 2018. The index represented large, intermediate and small firms in terms of capitalisation across 17 European countries, covering around 90% of free-float market capitalisation in Europe. The countries constituting the index were Spain, Norway, Austria, Germany,

Denmark, Sweden, Luxembourg, France, Ireland, Belgium, Finland, Italy, The Netherlands, Poland, Switzerland, Portugal and the UK. Financial companies were excluded from the sample because of their different nature and regulations related to reporting social and environmental disclosures (Dwekat *et al.*, 2020a; Hong and Andersen, 2011). The reason for choosing this particular sample was that previous studies show that European companies are the leaders in issuing external CSRA reports (Hasan *et al.*, 2003; Kolk, 2008; Simnett *et al.*, 2009).

Data regarding CSRA, board attributes and CSR committees were mainly collected from ASSET4-Thomson Reuters [2]. This database has been commonly used and verified in prior CG-CSR literature (Omran *et al.*, 2021; Simoni *et al.*, 2020; Clarkson *et al.*, 2019; Aouadi and Marsat, 2018; Cheng *et al.*, 2015; Ioannou and Serafeim, 2012; Fuhrmann *et al.*, 2017;). ASSET4-Thomson Reuters specialises in offering auditable, objective, relevant and systematic ESG data, relying on more than 250 key performance indicators and 750 data points accompanying their original data sources. In addition, ASSET4 research specialists collect data from different sources, including stock exchange filings, firms' annual and sustainability reports and non-governmental organisations.

After eliminating the missing values, our final sample included 895-year observations of nonfinancial European companies based on STOXX Europe 600 for 2016–2018. Table 1 gives more details about the sample structure and distribution over the years, countries and industries.

3.2 Variable measurement

According to previous board-CSRA literature, the decision to obtain a CSRA report is affected by firms' CG attributes (Velte, 2021; Al-Shaer and Zaman, 2018; Martinez-Ferrero *et al.*, 2017), with both firm and country factors justifying CSRA decisions (Velte, 2021; Liao *et al.*, 2018; Kend, 2015; Castelo Branco *et al.*, 2014; Ruhnke and Gabriel, 2013). CG balances all stakeholders' well-being and alleviates business risks (Carmona *et al.*, 2022; Martinez-Ferrero *et al.*, 2017). After carefully reviewing previous CSRA literature, the board attributes were chosen, for which evidence has been found of their effect in terms of size, frequency of meetings, gender diversity, experience, CEO separation, independence and CSR committee existence on CSR/CSRA (Velte, 2021; Dwekat *et al.*, 2020a; Miras-Rodriguez and Di Pietra, 2018; Liao *et al.*, 2018; Al-Shaer and Zaman, 2018; Martinez-Ferrero and Garcia-Sanchez, 2017). Table 2 indicates the measurements of the dependent and all the independent variables.

3.3 Fuzzy set qualitative comparative analysis

Fs-QCA is now attracting significant interest from specialists and academics, who are using it as a robust analytic tool for assessing theories in the social sciences (Bell *et al.*, 2014). In this field, one of the most commonly applied techniques in previous studies is regression analysis; nevertheless, a symmetric approach suggests some net effects of independent conditions on the outcome (dependent variable), keeping other conditions fixed and relying on other independent conditions. Following Ragin (2000, 2008), conventional statistical techniques such as multiple regression suggest that the influences discovered are sufficient and necessary to anticipate the dependent variable, although most real connections are asymmetrical. In addition, regression analysis seeks to specify the substantial negative or positive effect of one specific independent variable on the dependent variable (outcome), not a combination of other variables (Woodside, 2013). Therefore, depending on complexity theory, and to prevent conventional statistical technique problems, we applied Fs-QCA, which is one of the set-theoretical methods proposed by Ragin (1987, 2000, 2008). This technique is intended for complex configurational analysis and mixes quantitative and

Year, Geographic Zone, Industry	Assurance report 0	1	Total	%
Panel A: Year				
2016	117	182	299	33.4
2017	105	193	298	33.3
2018	91	207	298	33.3
Panel B: Geographic zone				
Austria	2	10	12	1.3
Belgium	13	14	27	3.0
Denmark	9	12	21	2.4
Finland	6	30	36	4.0
France	0	153	153	17.1
Germany	19	61	80	8.9
Ireland	12	6	18	2.0
Italy	0	15	15	1.7
Luxembourg	3	0	3	0.3
The Netherlands	14	37	51	5.7
Norway	20	7	27	3.0
Portugal	0	3	3	0.3
Spain	3	9	12	1.3
Sweden	22	41	63	7.0
Switzerland	33	34	67	7.5
UK	157	150	307	34.3
Panel C: Industry				
Basic materials	27	91	118	13.18
Consumer discretion	64	111	175	19.55
Consumer staples	19	70	89	9.94
Energy	23	43	66	7.37
Health care	45	45	90	10.06
Industrials	92	118	210	23.46
Real estate	9	12	21	2.35
Technology	16	26	42	4.69
Telecommunications	13	35	48	5.36
Utilities	5	31	36	4.02
Total	*313*	*582*	*895*	*100.00*

Notes: This table presents the distribution of external assurance reports across years, countries and industries. Assurance report is a dummy variable equal to 1 if the firm issued a sustainability assurance report in a given year and 0 otherwise
Source: Developed by authors

Table 1. Distribution of external assurance reports across years, geographic zones and industries

qualitative analysis methods. Furthermore, Fiss (2007) highlights that this technique defines combinations that are required conditions to accomplish a particular dependent variable level using Boolean algebra rules. To accomplish the research goal, we implemented two propositions (complexity and equifinality) using Fs-QCA to recognise the various combinations of board and CSR committee attributes that suggest the necessary conditions for adopting CSRA reports.

According to Woodside (2013), when using the Fs-QCA technique, the first stage, which is obligatory, consists of converting the conditions into calibrated groups. Calibration converts the initial data into an analogous z scale; it is a method to articulate the degree of a group membership. For that purpose, three cut-off points must be applied:

Independent variable	Label	Operational definition
CSR assurance	*CSRA*	Dummy variable equals 1 if the firm issued a CSRA report in a given year, and 0 otherwise
Board size	*BSIZE*	The total number of board members at the end of the fiscal year
Board meeting	*BMEET*	The number of board meetings during the year
Board gender diversity	*BGEND*	The proportion of women on the board
Board independence	*BINDE*	The proportion of independent board members
Board experience	*BEXPE*	The average number of years each board member has been on the board
CEO separation	*CEOSEP*	Dummy variable equals 1 if the company separates between CEO and board chair or 0 otherwise
CSR committee	*CSRCOM*	Dummy variable is equals 1 if the company had a CSR committee, and 0 otherwise
Firm size	*FSIZE*	Natural logarithm of total assets
Financial leverage	*LEV*	The ratio of total debt to total assets
Return on equity	*ROE*	The ratio of net income to total equity
Loss	*LOSS*	Dummy variable equals 1 if the company has a net loss in a specific year
Industry CSR sensitivity	*Ind_CSR_sens*	Dummy variable equal to 1 if the firm is a member of a CSR-sensitive industry based and 0 if the firm is a member of a non-CSR-sensitive industry, based on Simnett *et al.* (2009)
Country CSR regulations	*Count_CSR_reg*	Dummy variable equals 1 if the country has such regulations and requirements for corporate social responsibility disclosures (CSR), based on Fuhrmann *et al.* (2017)

Source: Developed by authors

Table 2. Variables measurement

(1) the value zero for full non-membership;
(2) the value one for full membership; and
(3) the value 0.5 for the cross-over point where the case is neither in nor out of the set.

Following Dusa (2019), we used R software version 4.0.3 to analyse the data (QCA package version 3.11). The calibration technique used in this study is suitable for large quantitative N-samples, following data structure for crisp sets (i.e. binary data) and distribution parameters for fuzzy sets (Cooper and Glaesser, 2016). Except for the outcome (CSRA), CSR committee and CEO duality, where crisp sets were applied (1 fully in and 0 fully out), fuzzy sets were used for all other conditions.

We also calibrated our variables (to determine full non-membership and full membership using "Euclidian Distance" clusters), applying R software (QCA package). Using a cluster-based approach, we identified the three cut-off points for calibration; this procedure helped to find the calibration thresholds to transform the raw variables into sets. According to Dusa (2019), cluster analysis is useful for discovering which threshold value best splits the points into a particular number of groups, dividing the raw data into the most important groups. Regarding the binary variables, one value was assigned to indicate being completely in the set, and zero if completely out of the set.

Following the calibration, all the probable configurations of the conditions were recorded with their degree of consistency in a "truth-table" produced by the Fs-QCA algorithms. It was crucial to evaluate which bundle could contain the necessary variables for the outcome. According to Hsu *et al.* (2013), consistency and coverage are valuable metrics similar to a

symmetric test of the correlations and coefficient of determinations. Sufficiency coverage assesses the degree to which a causal configuration is present for a particular outcome, while consistency assesses the extent of a relationship between the cases sharing a causal configuration and one specific outcome. Therefore, as Dusa and Alrik (2013) state, if the extent of sufficiency consistency is high enough, the conditions are necessary for the outcome. Hsu *et al.* (2013) indicate that the intuition behind this is that coverage and consistency results are very similar to the coefficient of determination, R^2 and Pearson's correlation coefficient in statistical analysis, respectively. In Section 4.2, Table 6 shows the outcome scores of the sufficient conditions and their consistency. The Fs-QCA model is valid when the minimum amount of consistency is 0.80 and when the coverage is between 0.23 and 0.65 (Woodside, 2013).

4. Empirical results

4.1 Correlation and descriptive statistics

To check multicollinearity between the study variables, Pearson's correlation of all the variables was calculated and reported in Table 3. The values show that the highest correlation of 0.2483 was between CEOSEP and BSIZE. According to Hair *et al.* (2006) and Gujarati and Porter (2003), no multicollinearity concerns affect the results if the correlations are less than 0.80. We can also notice that the CSRA significantly correlates with gender diversity, board size, board experience, CEO separation and the CSR committee.

Table 4 summarises the descriptive statistics of all the variables used in the study analysis. Nearly 65% of the 895 firm-year observations issued CSRA reports. It should be noted that, as shown in Table 1, the percentage of firms issuing CSRA reports increased from nearly 61% in 2016 to approximately 70% in 2018. The plausible explanation of these results is, as we mentioned earlier, several EU countries transposed the EU Directive 95/2014 in 2017, requiring many instances to evaluate the existence of the information required by the Directive in the annual report. For example, some countries enforced the Directive in 2017, requiring listed firms to obtain limited assurance on nonfinancial information (Doni *et al.*, 2020). Moreover, European companies are leaders in issuing external CSRA reports (Simnett *et al.*, 2009; Kolk, 2008; Hasan *et al.*, 2003), with the results indicating that they recognise the benefits of doing so. Concerning board attributes, the mean values in Table 4 reveal that, on average, there are nearly 11 board members (BSIZE), of which around 64% are independent (BINDE) and around 29% are women (BGEND). Board directors tend to meet about nine times a year (BMEET). Moreover, approximately 76% of our tested firms had a split between the CEO and board chair (CEOSEP). Regarding the CSR committee (CSRCOM), almost 82% of our sampled firms had these.

4.2 Prediction of corporate social responsibility assurance implementation from board attributes and corporate social responsibility committee

Before conducting our Fs-QCA analysis and following previous CG and CSR studies that used Fs-QCA (Laguir *et al.*, 2021; Lewellyn and Fainshmidt, 2017; García-Castro *et al.*, 2013), we conducted a logistic regression analysis to verify whether board attributes and CSR committee had a significant net impact on the adoption of CSRA, which may challenge our theory that the effect of the board and CSR committee was better understood from configurational and complementarity perspectives.

The model is set as follows:

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) CSRA	1											
(2) BSIZE	0.195*	1										
(3) BMEET	0.021	−0.079*	1									
(4) BGEND	0.072*	0.170*	0.131*	1								
(5) BEXPE	−0.028	0.066*	−0.186*	−0.017	1							
(6) CEOSEP	0.033	−0.195*	0.013	−0.115*	−0.267*	1						
(7) BINDE	0.132*	−0.244*	0.086*	0.114*	−0.091*	0.146*	1					
(8) CSRCOM	0.257*	0.236*	0.028	0.122*	−0.011	−0.116*	0.096*	1				
(9) FSIZE	0.305*	0.517*	0.010	0.176*	0.043	−0.139*	0.084*	0.358*	1			
(10) LEV	0.035	0.043	0.068*	0.003	−0.152*	−0.026	0.043	0.031	0.217*	1		
(11) ROE	0.006	−0.013	−0.047	0.061*	0.093*	−0.019	0.048	0.013	−0.057	0.002	1	
(12) LOSS	−0.042	−0.063*	0.126*	−0.081*	−0.146*	0.065*	−0.033	−0.018	−0.071*	0.02	−0.564*	1

Table 3.
Correlation matrix

Notes: This table presents Pearson's correlation coefficients all variables. All variables defined in Table 2. *Statistical significance at $p < 1\%$ using two-sided t-statistics
Source: Developed by authors

$$CSRA = \beta_0 + \beta_1 BSIZE_{it-1} + \beta_2 BMEET_{it-1} + \beta_3 BGEND_{it-1} + \beta_4 BEXPE_{it-1} + \beta_5 CEOSEP_{it-1} + \beta_6 BINDE_{it-1} + \beta_7 CSRCOM_{it-1} + \beta_8 FSIZE_{it-1} + \beta_9 LEV_{it-1} + \beta_{10} ROE_{it-1} + \beta_{11} LOSS_{it-1} + Ind\_CSR\_sens + \varepsilon_{it}$$

All variables are defined in Table 2.

Table 5 shows the results from three models related to the adoption of CSRA that are examined by applying logistic regressions. The models used in this study indicate the associations between board attributes and CSR committees and the adoption of CSRA. The results presented in Table 5 reveal a positive association between board size and the presence of a CSR committee with the adoption of CSRA. However, the analysis revealed insignificant individual associations at conventional levels for the remaining five board attributes (BMEET, BGEND, BEXPE, CEOSEP and BINDE). However, Woodside (2013) argues that the results obtained through logistic regression are based on the assumption

Variable	N	Mean	SD	Min	Max
CSRA	895	0.65	0.48	0	1
BSIZE	895	11.06	3.38	6	20
BMEET	895	8.92	3.28	4	22
BGEND	895	29.34	10.85	0	60
BEXPE	895	6.08	2.25	1.41	14.15
CEOSEP	895	0.76	0.43	0	1
BINDE	895	63.93	22.49	0	100
CSRCOM	895	0.82	0.39	0	1
FSIZE	895	15.47	1.41	8.14	19.78
LEV	895	0.21	0.15	0	0.71
ROE	895	14.85	21.41	−65.42	124.27
LOSS	895	0.10	0.30	0	1

Table 4.
Descriptive statistics

Note: The variables are defined in Table 2
Source: Developed by authors

Variables	(1) CSRA
BSIZE	0.0427** (0.0367)
BMEET	−0.0710* (0.0338)
BGEND	0.0444* (0.0106)
BEXPE	−0.0418 (0.0457)
CEOSEP	0.213 (0.267)
BINDE	0.00743* (0.0044)
CSRCOM	1.527*** (0.314)
FSIZE	0.428*** (0.0959)
LEV	−0.0292 (0.762)
ROE	−0.00469 (0.0057)
LOSS	−0.652 (0.409)
Ind_CSR_sens	0.488*** (0.189)
Constant	−8.982*** (1.366)
Observations	895
Year indicators	yes
Country indicators	no
Industry indicators	no
Pseudo R^2	0.16

Notes: This table presents the outcomes of the logit regression models for the sample consisting of European companies listed on the STOXX 600 over the period 2016–2018. The presented model tests the influence of board characteristics (board size "BSIZE", the frequency of board's meetings "BMEET", board gender diversity BGEND", board experience, CEO chairman separation "CEOSEP" and board independence "BINDE") and the existence of CSR committee "CSRCOM" on the decision to obtain sustainability assurance report. (see Table 2 for variable definitions). It controls for CSR-sensitive and non-CSR- sensitive industries using a dummy variable equal to 1 if the firm is a member of a CSR sensitive industry based and 0 if the firm is a member of a non-CSR- sensitive industry. All the explanatory variables are one-year lagged to account for possible endogenous interdependence. We run the regressions using country-year clustered to robust standard errors. ***Statistical significance at 1% level; **statistical significance at 5% level and *statistical significance at 10% level

Source: Developed by authors

Table 5.
Logistic regression analysis

that the influence of a specific variable related to board composition or CSR committees alone is not sufficient in determining the outcome of the dependent variable. Therefore, these results indicate that CG mechanisms need to be explored in "bundles", and looking at each mechanism in isolation using traditional techniques will not provide the whole picture. They also emphasise the value of applying a configurational method to analyse the effectiveness of CSR committees and board attributes. The present study employs set-theoretic methods, specifically Fs-QCA, to examine the potential interactions between board attributes and CSR committees in greater depth. The aim is to determine if the presence of specific bundles or mixed combinations of board attributes and CSR committees can yield more informative results than those obtained through logistic regression analysis alone.

Regarding firm characteristics, Tarquinio and Rossi (2017) and Sierra *et al.* (2013) show that firm size is a crucial factor of CSRA, which positively affects firms' decisions to acquire CSRA reports. Therefore, firm size is expected to be positively associated with the adoption of CSRA. Moreover, it is assumed that firms' financial situation might influence such CSRA adoption. Castelo Branco *et al.* (2014) found that profitability is positively connected with adopting CSRA. Furthermore, greater financial leverage would reduce the opportunity to obtain a CSRA (Castelo Branco *et al.*, 2014; Sierra *et al.*, 2013). Thus, profitability and leverage are expected to have positive and negative relationships with adopting CSRA, respectively. Table 2 presents the measurements of all control variables.

4.2.1 Control for corporate social responsibility-sensitivity industries. To control for the effect of each industry, we distinguished companies on the basis of whether they are CSR-sensitive or non-CSR-sensitive (Dwekat *et al.*, 2022; Bollas-Araya *et al.*, 2019). According to Simnett *et al.* (2009), we categorised firms in mining, utilities and production industries as CSR-sensitive [3], because companies in these industries are assumed to be more motivated to initiate a positive social image, as their activities have a greater influence on the environment (Al-Shaer and Zaman, 2019). Regarding our data, almost 21% (188 of 895 observations) of our sample is classified as CSR-sensitive.

In line with previous studies, our findings in Table 5 show that there is a positive and significant association between *Ind_CSR_sens* and the adoption of CSRA (0.488; $p < 0.01$). According to the relationship between board attributes and CSRA (adoption).

Table 6 shows the bundles (using the intermediate solution) of board attributes and CSR committees that led to CSRA adoption in the period 2016–2018 and for each separate year (three for 2016–2018, three for 2016, three for 2017 and three for 2018). Each of these combinations is sufficient for the adoption of CSRA; therefore, various combinations or solutions can lead to CSRA adoption. As presented in Table 6, for each period, different bundles reveal a high overall degree of consistency (more than 0.86) and reasonable total coverage (0.379 for the three years, 0.343 for 2018, 0.409 for 2017 and 0.357 for 2016). In addition, variables with lower-case letters negatively impact the outcome (CSRA adoption),

Year	Configuration	Consistency	Coverage
2016–2018			
1	BSIZE*BGEND*CSRCOM	0.906	0.264
2	BGEND * ceosep * CSRCOM	0.930	0.221
3	bsize*BEXPE* ceosep* CSRCOM	0880	0.058
	Total consistency: 0.901		
	Total coverage: 0.379		
2016			
1	BSIZE*BGEND*ceosep*CSRCOM	0.945	0.134
2	BSIZE*BINDE*CEOSEP*CSRCOM	0.813	0.175
3	BGEND * BINDE *ceosep*CSRCOM	0.914	0.137
	Total consistency: 0.868		
	Total coverage: 0.357		
2017			
1	BSIZE*BGEND*CSRCOM	0.913	0.321
2	BSIZE*BINDE*CEOSEP*CSRCOM	0.840	0.187
3	BGEND * BINDE *ceosep*CSRCOM	0.942	0.151
	Total consistency: 0.897		
	Total coverage: 0.409		
2018			
1	BSIZE*BGEND*CSRCOM	0.906	0.264
2	BMEET*BGEND*BINDE*CSRCOM	0.828	0.118
3	BGEND*BINDE *ceosep*CSRCOM	0.913	0.139
	Total consistency: 0.883		
	Total coverage: 0.343		

Table 6.
Board attributes and CSRCOM that are predicting the adoption of CSRA

Notes: The variables are defined in Table 2; * represents the logical "and" condition, lower-case letters indicate the absence or negation of the condition and upper-case letters indicate the presence of the condition
Source: Developed by authors

while those with upper-case ones had a positive impact. For instance, the second bundle of predictions in the period 2016–2018 (BGEND*ceosep*CSRCOM) indicates that companies with a higher ratio of women directors (BGEND) that did not separate between the CEO and chairman of the board (ceosep) and had a CSR committee (CSRCOM) tended to adopt CSRA. This configuration reveals a high consistency and unique coverage score (0.930 and 0.221, respectively).

In general, the effect of specific attributes is not essentially negative or positive or always present (except for CSRCOM); for instance, CEO separation, which is evident in eight of the 12 bundles in Table 5, impacts positively in some configurations (CEOSEP), while it impacts negatively in the others (ceosep). This implies that one specific board attribute would have a positive, negative or no impact on the adoption of CSRA, in contrast to the generalised results of the previous CSRA literature. In this study, only the CSR committee (CSRCOM) appears in each configuration (12 times) and positively impacts the adoption of CSRA. This reveals that a CSR committee is a necessary condition for the adoption of CSRA. Nevertheless, it is not sufficient because a variable may not produce the outcome (CSRA) unless a set of other variables exists.

Furthermore, companies without CSRCOM are less likely to have assured CSR reports. Therefore, no single board attribute or the existence of a CSR committee leads to CSRA implementation since results show complex antecedent conditions; additionally, the impact of an individual board attribute or the existence of a CSR committee depends on other key board attributes. These outcomes are consistent with Dwekat *et al.* (2020a, 2020b) and support our first and second propositions regarding complexity and equifinality tenets.

Finally, differences between the years were noticed, but some combinations appeared in different years. For instance, it can be seen from Table 6 that some configurations (BSIZE*BGEND*CSRCOM and BGEND*BINDE *ceosep*CSRCOM) appeared three times (this result means that in smaller boards, the CEO duality is less frequent). These results indicate that the configurations are essential for companies to implement CSRA. For instance, as previously stated, another configuration appears three times (BSIZE*BGEND*CSRCOM), with the highest coverage values (0.264 for 2016–2018, 0.32 for 2017 and 0.264 for 2018). Therefore, we conclude that these bundles of attributes are the most empirically appropriate for the solution and validate that board gender diversity, board size and CSR committees are necessary conditions for CSRA adoption.

Regarding other variables, BGEND appears in 10 out of the 12 total combinations, and BINDE is also evident in six combinations; both variables affect CSRA implementation positively. While CEO separation (CEOSEP) and board size (BSIZE) appear in eight and seven configurations, respectively, both variables contribute positively and negatively to the implementation of CSRA. However, board experience (BEXPE) and board meetings (BMEET) only appear in one combination, with both contributing positively to CSRA implementation.

4.3 Robustness analysis

In Fs-QCA, a causal configuration or condition might concur for the outcome and its negation in an unreasonable relation. In some cases, this must be considered a situation where a variable could be sufficient for the outcome and its negation. Therefore, according to Dusa and Alrik (2013), applying an algorithm to negate the outcome is essential. The results in Table 7 show that all the casually identified configurations do not have high enough coverage (0.077) or consistency (0.099) scores for the outcome negation (not CSRA implementation); therefore, the paradoxical association is not present, which would have constituted a problem. On the other hand, Dusa and Alrik (2013) indicate that if the

association of sufficiency between the outcome and casual configuration are as robust as the relation of sufficiency between the outcome and the negation of the identified casual configurations, it will produce a problem. The results in Table 8 do not affirm the sufficiency relationship for the causal variable negation. Therefore, the consistency (0.276) and coverage (0.032) scores of the combination negation are low enough to prove the absence of this possible conflict.

Another important robustness check is to decide whether any causal condition can be deemed necessary for the specific dependent variable (CSRA adoption). Schneider and Wagemann (2010) state that a condition can be deemed essential when its consistency level exceeds 0.9. As shown in Table 8, CSRCOM is a necessary condition for CSRA adoption. This result is consistent with the previous results in Table 6; CSRCOM appears in all configurations, which means that it is an essential factor in obtaining CSRA. On the other hand, Table 9 shows the robustness check of these results; it can be seen that the connection between the negation of CSRCOM with the outcome, or CSRCOM with the outcome negation, indicates low consistency and coverage scores.

4.4 Discussion

In alignment with previous studies in CG that have employed Fs-QCA (Dwekat *et al.*, 2020b; Cucari, 2019; Cuadrado-Ballesteros *et al.*, 2017; Lewellyn and Fainshmidt, 2017; García-Castro *et al.*, 2013), this study emphasises the utility of using Fs-QCA in analysing the effectiveness of CSR committees and board attributes. It demonstrates that the examination of specific bundles or mixed combinations of board attributes and CSR committees can produce more informative

Configuration	Consistency	Coverage
BSIZE*BGEND*CSRCOM	0.094	0.051
BGEND *ceosep* CSRCOM	0.070	0.031
bsize*BEXPE* ceosep* CSRCOM	0.120	0.015
Total consistency: 0.099		
Total coverage: 0.077		

Table 7. Sufficiency analysis for the outcome negation (CSRA)

Notes: The variables are defined in Table 2, * represents the logical "and" condition, lower-case letters indicate the absence or negation of the condition and upper-case letters indicate the presence of the condition
Source: Developed by authors

Configuration	Consistency	Coverage
Negation (BSIZE*BGEND*CSRCOM)	0.234	0.023
Negation (BGEND *ceosep* CSRCOM)	0.236	0.023
Negation (bsize*BEXPE* ceosep* CSRCOM)	0.412	0.013
Total consistency: 0.276		
Total coverage: 0.032		

Table 8. Sufficiency analysis for the causal conditions' negation

Notes: the variables are defined in Table 2, * represents the logical "and" condition, lower-case letters indicate the absence or negation of the condition and upper-case letters indicate the presence of the condition
Source: Developed by authors

results than those obtained through logistic regression analysis alone. Furthermore, our results indicate that the adoption of CSRA is contingent on a combination of the effects of board attributes and the presence of a CSR committee. In this regard, board attributes can positively or negatively impact the adoption of CSRA, depending on the presence or absence of other attributes. Thus, there may be multiple optimal bundles of board attributes and the presence of a CSR committee that can lead to the adoption of CSRA.

Nonetheless, some configurations were constant in different years, which suggests that they could be more important in leading to better CSRA adoption. For instance, (BSIZE*BGEND*CSRCOM) and (BGEND*BINDE*ceosep*CSRCOM) appeared three times. From these configurations, it can be seen that BGEND and CSRCOM jointly appeared in six configurations. Moreover, they also appeared in the other three configurations, which indicates the importance of the interactions between the existence of a CSR committee and a higher percentage of female directors in implementing CSRA. While our results offer support to García-Sánchez *et al.* (2021) in the sense that combining women board members and CSR committees could lead to higher CSRA adoption, we further indicate that these two variables could lead to CSRA adoption depending on the existence or non-existence of other board characteristics at the same time. In contrast, our logistic regression results indicate that BGEND, BINDE, BEXPE, BMEET and CEOSEP do not affect the adoption of CSRA.

Concerning board size, our regression results indicate a significant positive association between board size and the adoption of CSRA. In line with this finding, numerous researchers have indicated a positive connection between CSRD and board size (Fernández-Gago *et al.*, 2018; Muttakin *et al.*, 2018; McGuinness *et al.*, 2017). According to Khan *et al.* (2013), a larger board will have a diversity of knowledge and experience from the variety of stakeholder groups involved, which improves its ability to monitor and organise the firm's disclosures; this, in turn, will enhance the credibility of CSR disclosure and assurance (García-Sánchez and Martínez-Ferrero, 2017; Liao *et al.*, 2018; Rao *et al.*, 2012). However, this analysis highlights the individual effect of board size on the adoption of CSRA. On the other hand, Fs-QCA indicates that board size appeared in seven configurations, impacting the adoption of CSRA in some configurations positively (BSIZE) but negatively (bsize) in others. This indicates that both larger and smaller boards can be an effective CG mechanism if combined with other board attributes and the existence of the CSR committee. For instance, companies with smaller boards could have assured CSR reports if they had a CSR committee, greater board experience and CEO duality (bsize*BEXPE* ceosep* CSRCOM). Nonetheless, closer inception to the configuration results indicates that smaller board size (bsize) and board experience (BEXPE) have only appeared in one configuration. However, these two conditions have not appeared in other configurations. This may indicate that a smaller board size could positively affect the adoption of CSRA if they have more experience, which suggests that board experience positively moderates the association between board size and the adoption of CSRA.

Configuration	Consistency	Coverage
1-CSRCOM	0.916	0.730
2-CSRCOM with Negation (CSRA)	0.629	0.27
3-Negation (CSRCOM) with CSRA	0.084	0.274

Note: The variables are defined in Table 2
Source: Developed by authors

Table 9.
Necessity analysis and related robustness tests

Moreover, while the regression results indicate an insignificant positive association between CEO separation and the adoption of CSRA, Fs-QCA shows that such separation appeared in eight configurations, impacting the adoption of CSRA in some configurations positively but negatively in others. This result is consistent with Lewellyn and Fainshmidt (2017), who indicate that both CEO separation and non-separation can be effective board mechanisms. For instance, our results suggest that firms that do not separate between the CEO and chairman of the board could have CSRA if they have a higher percentage of independent and female members and a CSR committee (BGEND*BINDE *ceosep*CSRCOM). On the other hand, other firms that separate between the CEO and chairman tend to have CSRA if they also have a larger board size, a higher percentage of independent board members and a CSR committee (BSIZE*BINDE*CEOSEP*CSRCOM). Such results indicate that the interaction between several board attributes within the configuration could change the expected outcome that usually results from traditional logistic regression. In addition, CEO separation has appeared only in two configurations, of which the female member has not appeared. On the other hand, the CEO nonseparation has appeared in six configurations, of which five of them include the female board member. Such results may indicate that female board members could positively moderate the relationship between CEO duality and CSRA.

Regarding the CSR committee, the regression results indicate a significant positive relationship between its existence and CSRA implementation. This result is consistent with previous literature, indicating that the primary CSR committee responsibilities are to monitor CSR policies and performance, which would help the board to control and adopt better sustainability patterns, which, in turn, would improve the CSR level (Liao *et al.*, 2018) and enhance the credibility of voluntary disclosure through the dissemination of an external assurance statement (Martinez-Ferrero and Garcia-Sanchez, 2017). In the same direction, Datt *et al.* (2018) and Peters and Romi (2015) point out that the presence of a CSR committee positively impacts the adoption of CSRA. Other authors indicate that a more active CSR committee leads to better CSRA implementation (Martinez-Ferrero and Garcia-Sanchez, 2017; Kend, 2015). On the other hand, our Fs-QCA shows that the CSR committee, having appeared in all configurations, is a necessary and sufficient element in combination with other conditions to obtain CSRA. The final effect of the CSR committee on the adoption of CSRA depends on other board attributes, for example, board gender, board size and board independence. This result is in line with García-Sánchez *et al.* (2021), concluding that the existence of a CSR committee strengthens the influence of the external and internal (i.e. board gender) CG attributes.

Furthermore, while our regression results indicate that board gender diversity does not affect the adoption of CSRA, according to the Fs-QCA results in Table 6, BGEND is a critical factor leading to higher CSRA implantation. In addition, BGEND appears jointly with the CSR committee in nine configurations. Such a result suggests that companies with CSR committees and a higher percentage of female board members have different solutions that lead to CSRA adoption. For instance, those with higher BGEND and CSRCOM would have to adopt CSRA if they have larger BSIZE, higher BINDE and non-CEO separation or higher BINDE and more BMEE frequency. Therefore, adopting CSRA is not as easy as enhancing one specific board attribute or the CSR committee; it depends on other attributes, such as indicated previously, all of which would be considered to influence CSRA adoption.

5. Conclusion

The decision to obtain CSRA is a complex phenomenon influenced by several board attributes and CSR committee combinations. Although a considerable number of articles

have examined the role of board attributes in enhancing CSR disclosure, little attention has been paid to the board-CSRA nexus. Moreover, most of the results of these articles are somewhat mixed (García-Sánchez *et al.*, 2021; Dwekat *et al.*, 2020b). In this regard, to the best of our knowledge, this is the first study that heeds the calls to test the influence of board attributes and the presence of a CSR committee on the adoption of CSRA (Dwekat *et al.*, 2021; Velte, 2021; García-Sánchez, 2020; Tyson and Adams, 2020; Farooq and de Villiers, 2017). Furthermore, the paper has offered a novel methodological contribution to the board-CSRA literature by combining both traditional statistical (logistic regression) and Fs-QCA methods. This study emphasizes the benefits of using Fs-QCA as an alternative to logistic regression analysis. By comparing the outcomes obtained through both techniques, the study illustrates that Fs-QCA offers more detailed and informative results. Hence, these results indicate that CG mechanisms, such as board characteristics and committees, need to be explored in "bundles" and looking at each mechanism in isolation using traditional techniques will not provide the full picture. Contextually, this was achieved using a sample of nonfinancial European companies listed on the STOXX 600 index over 2016–2018. The data were collected for 895-year observations from the ASSET4-Thomson Reuters database.

The study's results contribute to complexity theory by supporting the tenets of complexity and equifinality. According to the complexity tenet, the effect of specific board attributes or the existence of a CSR committee on the adoption of CSRA relies on other board attributes or the existence of a CSR committee. On the other hand, the equifinality tenet indicates that different board attributes and CSR committee configurations lead to CSRA adoption. In this context, this study provides valuable and significant practical implications, primarily for both organisations and regulating parties. Firstly, the study highlights the effect of boards and the CSR committee on adopting CSRA. The existence of a CSR committee appeared in all configurations leading to the adoption of CSRA. This suggests that the CSR committee is one of the main factors for firms to have an assured CSR report. However, some companies in our sample do not recognise this significance. This result could be valuable for these companies as it could be the first step towards compliance with the European Commission's proposed draft for a Corporate Sustainability Reporting Directive in April 2021.

Furthermore, along with the CSR committee, our results indicate that gender diversity is another essential attribute, as it appeared jointly with the CSR committee in nine configurations. The average number of female directors in our sample is nearly three, which is in line with critical mass theory and is consistent with recent empirical evidence which indicates that the association between gender diversity and the adoption of CSRA is more significant when companies have two or more females in the board (Buertey, 2021). While the European Commission's proposed draft calls for "improving gender balance on the boards of large EU listed companies" (European Commission, 2021a: 6), our results suggest that board gender diversity is critical for all companies. In this respect, regulators and policymakers (such as European Commission and European Financial Reporting Advisory Group) could consider these two factors in setting the standards and guidelines for the adoption of CSRA, encouraging companies and organisations seeking CSRA to appoint a CSR committee and increase the representation of female members in the board, along with other board attributes.

In addition, using a configurational approach, our study provides a more comprehensive and nuanced understanding of the separated or dual leadership structure. While most previous studies indicate that CEO separation is a better mechanism to enhance the credibility of CSR disclosure (Dwekat *et al.*, 2021), our results support the argument of Lewellyn and Fainshmidt (2017) that both CEO separation and non-separation can be

effective mechanisms. This means that companies that have both CEO separation or non-separation could have an assured CSR report if they use the appropriate configuration. In addition, most previous studies have argued that a larger board size is more effective in enhancing CSR disclosure and assurance (Dwekat *et al.*, 2021; Liao *et al.*, 2018; Jain and Jamali, 2016). However, the results of this study indicate that both small and large board size could lead to favourable results regarding the adoption of CSRA. This suggests that the complementarity of CG practices regarding CEO separation and the appointment of a larger board size does not always lead to the intended consequences or outcomes. In this regard, our findings promote the idea that the theories or perceptions of effective CG mechanisms could be inaccurate (Lewellyn and Fainshmidt, 2017; Aguilera *et al.*, 2012). This notion emphasises the need to advance the theory by further investigating the interaction of board attributes within bundle configurations.

Despite the contributions discussed above, the study also has limitations. Firstly, only a small number of conditions can be considered when applying QCA since the configuration number increases exponentially, which might weaken the interpretation. Moreover, our study focused on the role of certain board attributes on CSRA. However, other significant attributes could affect the relationship between the board, CSR committee and the adoption of CSRA, for example, ownership structure, board age, board interlocks, audit committee attributes, the role of the CSR assurer and educational diversity. Therefore, it would be valuable for future studies to investigate such board attributes. Moreover, future studies could replicate this study using other measurements of CSRA, such as its scope and level, as well as in different regions/countries or by increasing the sample. Finally, due to Directive 95/2014, the majority of European countries have moved to mandate and regulate CSR disclosures by 2017. While the time span covered in this study would not be helpful to observe firms' tendencies regarding the association between board characteristics and CSRA pre- and post-CSR-related regulations, future studies could use a longer time period and introduce a dummy variable that takes a value one when a specific country move to mandated CSR reporting in a given year and zero otherwise.

Notes

1. Based on the fortune ranking for the year 2021.
2. The Thomson Reuters Asset4 database provides information on the disclosure of (assured) sustainability reports separate from the provision of GRI reports and information on sustainability performance (Asset4).
3. We used the industry classification benchmark sector code "level 3" to classify firms into CSR-sensitive and non-CSR- sensitive.

References

Abu Alia, M., Abdeljawad, I., Jallad, S.E. and Rashid, M. (2022), "Voluntary disclosure-cost of equity nexus and the moderating role of corporate governance: evidence from an extremely politically unstable context", *International Journal of Islamic and Middle Eastern Finance and Management*, Vol. 15 No. 6, pp. 1035-1052.

Adams, R.B. and Ferreira, D. (2009), "Women in the boardroom and their impact on governance and performance", *Journal of Financial Economics*, Vol. 94 No. 2, pp. 291-309, doi: 10.1016/j.jfineco.2008.10.007.

Aguilera, R.V., Desender, K.A. and Kabbach-Castro, L.R. (2012), "Perspectives on comparative corporate governance", in Clarke, T. and Branson, D. (Eds), *SAGE Handbook of Corporate*

Governance, SAGE Publications, Thousand Oaks, CA, pp. 379-405, available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1797142

Al Natour, A.R., Al-Qadi, N.S., Meqbel, R., Zaidan, H., Al-Mawali, H. and Al-Okaily, M. (2023), "The role of privatisation in sustaining auditor independence: evidence from the developing markets", *Sustainability*, Vol. 15 No. 8, p. 6350.

Al Natour, A.R., Meqbel, R., Kayed, S. and Zaidan, H. (2022), "The role of sustainability reporting in reducing information asymmetry: the case of family-and non-family-controlled firms", *Sustainability*, Vol. 14 No. 11, p. 6644.

Aladwey, L., Elgharbawy, A. and Ganna, M.A. (2022), "Attributes of corporate boards and assurance of corporate social responsibility reporting: evidence from the UK", *Corporate Governance: The International Journal of Business in Society*, Vol. 22 No. 4, pp. 748-780, doi: 10.1108/CG-02-2021-0066.

Alia, M.A. and AbuSarees, A.K. (2023), "Reducing cost of capital. Do voluntary disclosure and accounting conservatism contribute?", *FIIB Business Review*, p. 23197145221145753.

Alia, M.A. and Mardawi, Z. (2021), "The impact of ownership structure and board characteristics on corporate social responsibility disclosed by Palestinian companies", *Jordan Journal of Business Administration*, Vol. 17 No. 2, pp. 254-277.

Al-Shaer, H. and Zaman, M. (2018), "Credibility of sustainability reports: the contribution of audit committees", *Business Strategy and the Environment*, Vol. 27 No. 7, pp. 973-986, doi: 10.1002/bse.2046.

Al-Shaer, H. and Zaman, M. (2019), "CEO compensation and sustainability reporting assurance: evidence from the UK", *Journal of Business Ethics*, Vol. 158, pp. 233-252, doi: 10.1007/s10551-017-3735-8.

Alshorman, S., Qaderi, S., Alhmoud, T. and Meqbel, R. (2022), "The role of slack resources in explaining the relationship between corporate social responsibility disclosure and firm market value: a case from an emerging market", *Journal of Sustainable Finance and Investment*, pp. 1-20, doi: 10.1080/20430795.2022.2119833.

Aouadi, A. and Marsat, S. (2018), "Do ESG controversies matter for firm value? Evidence from international data", *Journal of Business Ethics*, Vol. 151 No. 4, pp. 1027-1047, doi: 10.1007/s10551-016-3213-8.

Arayssi, M., Jizi, M. and Tabaja, H.H. (2020), "The impact of board composition on the level of ESG disclosures in GCC countries", *Sustainability Accounting, Management and Policy Journal*, Vol. 11 No. 1, pp. 137-161, doi: 10.1108/SAMPJ-05-2018-0136.

Bear, S., Rahman, N. and Post, C. (2010), "The impact of board diversity and gender composition on corporate social responsibility and firm reputation", *Journal of Business Ethics*, Vol. 97 No. 2, pp. 207-221, doi: 10.1007/s10551-010-0505-2.

Bell, R.G., Filatotchev, I. and Aguilera, R.V. (2014), "Corporate governance and investors' perceptions of foreign IPO value: an institutional perspective", *Academy of Management Journal*, Vol. 57 No. 1, pp. 301-320, doi: 10.5465/amj.2011.0146.

Bianchi Martini, S., Corvino, A., Doni, F. and Rigolini, A. (2016), "Relational capital disclosure, corporate reporting and company performance: evidence from Europe", *Journal of Intellectual Capital*, Vol. 17 No. 2, pp. 186-217, doi: 10.1108/JIC-07-2015-0065.

Biswas, P.K., Roberts, H. and Whiting, R.H. (2022), "Female directors and CSR disclosure in Bangladesh: the role of family affiliation", *Meditari Accountancy Research*, Vol. 30 No. 1, pp. 163-192, doi: 10.1108/MEDAR-10-2019-0587.

Bollas-Araya, H.M., Polo-Garrido, F. and Seguí-Mas, E. (2019), "Determinants of CSR reporting and assurance: an analysis of top cooperative and mutual organizations", *Australian Accounting Review*, Vol. 29 No. 4, pp. 692-707, doi: 10.1111/auar.12244.

Bouten, L. and Hoozée, S. (2015), "Challenges in sustainability and integrated reporting", *Issues in Accounting Education*, Vol. 30 No. 4, pp. 373-381, doi: 10.2308/iace-51093.

Buertey, S. (2021), "Board gender diversity and corporate social responsibility assurance: the moderating effect of ownership concentration", *Corporate Social Responsibility and Environmental Management*, Vol. 28 No. 6, pp. 1579-1590, doi: 10.1002/csr.2121.

Cahan, S.F., De Villiers, C., Jeter, D.C., Naiker, V. and Van Staden, C.J. (2016), "Are CSR disclosures value relevant? Cross-country evidence", *European Accounting Review*, Vol. 25 No. 3, pp. 579-611, doi: 10.1080/09638180.2015.1064009.

Carmona, P., Dwekat, A. and Mardawi, Z. (2022), "No more black boxes! Explaining the predictions of a machine learning XGBoost classifier algorithm in business failure", *Research in International Business and Finance*, Vol. 61, p. 101649, doi: 10.1016/j.ribaf.2022.101649.

Castelo Branco, M., Delgado, C., Ferreira Gomes, S. and Pereira Eugénio, T.C. (2014), "Factors influencing the assurance of sustainability reports in the context of the economic crisis in Portugal", *Managerial Auditing Journal*, Vol. 29 No. 3, pp. 237-252, doi: 10.1108/maj-07-2013-0905.

Chan, M.C.C., Watson, J. and Woodliff, D. (2014), "Corporate governance quality and CSR disclosures", *Journal of Business Ethics*, Vol. 125 No. 1, pp. 59-73, doi: 10.1007/s10551-013-1887-8.

Chen, G., Firth, M., Gao, D.N. and Rui, O.M. (2006), "Ownership structure, corporate governance, and fraud: evidence from China", *Journal of Corporate Finance*, Vol. 12 No. 3, pp. 424-448, doi: 10.1016/j.jcorpfin.2005.09.002.

Cheng, M.M., Green, W.J. and Ko, J.C.W. (2015), "The impact of strategic relevance and assurance of sustainability indicators on investors' decisions", *AUDITING: A Journal of Practice and Theory*, Vol. 34 No. 1, pp. 131-162, doi: 10.2308/ajpt-50738.

Clarkson, P., Li, Y., Richardson, G. and Tsang, A. (2019), "Causes and consequences of voluntary assurance of CSR reports", *Accounting, Auditing and Accountability Journal*, Vol. 32 No. 8, pp. 2451-2474, doi: 10.1108/AAAJ-03-2018-3424.

Cohen, J.R. and Simnett, R. (2015), "CSR and assurance services: a research agenda", *AUDITING: A Journal of Practice and Theory*, Vol. 34 No. 1, pp. 59-74, doi: 10.2308/ajpt-50876.

Cooper, B. and Glaesser, J. (2016), "Exploring the robustness of set theoretic findings from a large *n* fsQCA: an illustration from the sociology of education", *International Journal of Social Research Methodology*, Vol. 19 No. 4, pp. 445-459, doi: 10.1080/13645579.2015.1033799.

Coram, P.J., Monroe, G.S. and Woodliff, D.R. (2009), "The value of assurance on voluntary nonfinancial disclosure: an experimental evaluation", *AUDITING: A Journal of Practice and Theory*, Vol. 28 No. 1, pp. 137-151, doi: 10.2308/aud.2009.28.1.137.

Cuadrado-Ballesteros, B., Martinez-Ferrero, J. and Garcia-Sanchez, I.M. (2017), "Board structure to enhance social responsibility development: a qualitative comparative analysis of US companies", *Corporate Social Responsibility and Environmental Management*, Vol. 24 No. 6, pp. 524-542, doi: 10.1002/csr.1452.

Cuadrado-Ballesteros, B., Rodríguez-Ariza, L. and García-Sánchez, I.M. (2015), "The role of independent directors at family firms in relation to corporate social responsibility disclosures", *International Business Review*, Vol. 24 No. 5, pp. 890-901, doi: 10.1016/j.ibusrev.2015.04.002.

Cucari, N. (2019), "Qualitative comparative analysis in corporate governance research: a systematic literature review of applications", *Corporate Governance: The International Journal of Business in Society*, Vol. 19 No. 4, pp. 717-734, doi: 10.1108/CG-04-2018-0161.

Cucari, N., Esposito De Falco, S. and Orlando, B. (2018), "Diversity of board of directors and environmental social governance: evidence from Italian listed companies", *Corporate Social Responsibility and Environmental Management*, Vol. 25 No. 3, pp. 250-266, doi: 10.1002/csr.1452.

Datt, R., Luo, L., Tang, Q. and Mallik, G. (2018), "An international study of determinants of voluntary carbon assurance", *Journal of International Accounting Research*, Vol. 17 No. 3, pp. 1-20, doi: 10.2308/jiar-52221.

de Villiers, C., Venter, E.R. and Hsiao, P.C.K. (2017), "Integrated reporting: background, measurement issues, approaches and an agenda for future research", *Accounting and Finance*, Vol. 57 No. 4, doi: 10.1111/acfi.12246.

Dobbs, S. and van Staden, C. (2016), "Motivations for corporate social and environmental reporting: New Zealand evidence", *Sustainability Accounting, Management and Policy Journal*, Vol. 7 No. 3, pp. 449-472, doi: 10.1108/SAMPJ-08-2015-0070.

Doni, F., Bianchi Martini, S., Corvino, A. and Mazzoni, M. (2020), "Voluntary versus mandatory nonfinancial disclosure: EU directive 95/2014 and sustainability reporting practices based on empirical evidence from Italy", *Meditari Accountancy Research*, Vol. 28 No. 5, pp. 781-802, doi: 10.1108/MEDAR-12-2018-0423.

Dusa, A. (2019), *QCA with R: A Comprehensive Resource*, Springer International Publishing, New York, NY, doi: 10.1007/978-3-319-75668-4.

Dusa, A. and Alrik, T. (2013), *Qualitative Comparative Analysis with R*, Springer, New York, NY, doi: 10.1007/978-1-4614-4584-5.

Dwekat, A., Mardawi, Z. and Abdeljawad, I. (2018), "Corporate governance and auditor quality choice: evidence from Palestinian corporations", *International Journal of Economics and Financial Issues*, Vol. 8 No. 2, pp. 47-53.

Dwekat, A., Meqbel, R., Seguí-Mas, E. and Tormo-Carbó, G. (2022), "The role of the audit committee in enhancing the credibility of CSR disclosure: evidence from STOXX Europe 600 members", *Business Ethics, the Environment and Responsibility*, Vol. 31 No. 3, pp. 718-740, doi: 10.1111/beer.12439.

Dwekat, A., Seguí-Mas, E. and Tormo-Carbó, G. (2020a), "The effect of the board on corporate social responsibility: bibliometric and social network analysis", *Economic Research-Ekonomska Istraživanja*, Vol. 33 No. 1, pp. 3580-3603, doi: 10.1080/1331677X.2020.1776139.

Dwekat, A., Seguí-Mas, E., Tormo-Carbó, G. and Carmona, P. (2020b), "Corporate governance configurations and corporate social responsibility disclosure: qualitative comparative analysis of audit committee and board characteristics", *Corporate Social Responsibility and Environmental Management*, Vol. 27 No. 6, pp. 2879-2892, doi: 10.1002/csr.1515.

Dwekat, A., Seguí-Mas, E., Zaid, M.A.A. and Tormo-Carbó, G. (2021), "Corporate governance and corporate social responsibility: mapping the most critical drivers in the board academic literature", *Meditari Accountancy Research*, Vol. 30 No. 6, pp. 1705-1739, doi: 10.1108/MEDAR-01-2021-1155.

European Commission (2017), "Communication from the commission, guidelines on non-financial reporting (methodology for reporting non-financial information) (2017/C 215/01)", available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52017XC0705(01)andfrom=EN

European Commission (2021a), "Corporate sustainability reporting", available at: https://ec.europa.eu/info/businesseconomy-euro/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en (accessed 22 October 2022).

European Commission (2021b), "Proposal for a directive of the European Parliament and of the council: commission staff working document", available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021SC0151 (accessed on 29 June 2022).

European Directive (2014), "Directive of the European parliament and of the council of 22 october 2014 amending directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups, 2014/95/EU", available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32014L0095

Farooq, M.B. and de Villiers, C. (2017), "The market for sustainability assurance services: a comprehensive literature review and future avenues for research", *Pacific Accounting Review*, Vol. 29 No. 1, pp. 79-106, doi: 10.1108/PAR-10-2016-0093.

Farooq, M.B. and de Villiers, C. (2020), "How sustainability assurance engagement scopes are determined, and its impact on capture and credibility enhancement", *Accounting, Auditing and Accountability Journal*, Vol. 33 No. 2, pp. 417-445, doi: 10.1108/AAAJ-11-2018-3727.

Farooq, M.B., Zaman, R., Sarraj, D. and Khalid, F. (2021), "Examining the extent of and drivers for materiality assessment disclosures in sustainability reports", *Sustainability Accounting, Management and Policy Journal*, Vol. 12 No. 5, pp. 965-1002, doi: 10.1108/SAMPJ-04-2020-0113.

Fernández-Gago, R., Cabeza-García, L. and Nieto, M. (2018), "Independent directors' background and CSR disclosure", *Corporate Social Responsibility and Environmental Management*, Vol. 25 No. 5, pp. 991-1001, doi: 10.1002/csr.1515.

Fiss, P.C. (2007), "A set-theoretic approach to organisational configurations", *Academy of Management Review*, Vol. 32 No. 4, pp. 1180-1198, doi: 10.5465/amr.2007.26586092.

Fiss, P., Marx, A. and Cambré, B. (2013), "Configurational theory and methods in organisational research: introduction", *Research in the Sociology of Organisations*, Vol. 38, pp. 1-22, doi: 10.1108/S0733-558X(2013)0000038005.

Frias-Aceituno, J.V., Rodríguez-Ariza, L. and García-Sánchez, I.M. (2013), "The role of the board in the dissemination of integrated corporate social reporting", *Corporate Social Responsibility and Environmental Management*, Vol. 20 No. 4, pp. 219-233, doi: 10.1002/csr.1294.

Fuhrmann, S., Ott, C., Looks, E. and Guenther, T.W. (2017), "The contents of assurance statements for sustainability reports and information asymmetry", *Accounting and Business Research*, Vol. 47 No. 4, pp. 369-400, doi: 10.1080/00014788.2016.1263550.

García-Castro, R., Aguilera, R.V. and Ariño, M.A. (2013), "Bundles of firm corporate governance practices: a fuzzy set analysis", *Corporate Governance: An International Review*, Vol. 21 No. 4, pp. 390-407, doi: 10.1111/corg.12024.

García-Sánchez, I.M. (2020), "Drivers of the CSR report assurance quality: credibility and consistency for stakeholder engagement", *Corporate Social Responsibility and Environmental Management*, Vol. 27 No. 6, pp. 2530-2547, doi: 10.1002/csr.1974.

García-Sánchez, I.M. and Martínez-Ferrero, J. (2017), "Independent Directors and CSR Disclosures: the moderating effects of proprietary costs", *Corporate Social Responsibility and Environmental Management*, Vol. 24 No. 1, pp. 28-43, doi: 10.1002/csr.1389.

García-Sánchez, I.M., Gómez-Miranda, M.E., David, F. and Rodríguez-Ariza, L. (2019), "The explanatory effect of CSR committee and assurance services on the adoption of the IFC performance standards, as a means of enhancing corporate transparency", *Sustainability Accounting, Management and Policy Journal*, Vol. 10 No. 5, pp. 773-797, doi: 10.1108/SAMPJ-09-2018-0261.

García-Sánchez, I.M., Hussain, N., Khan, S.A. and Martínez-Ferrero, J. (2021), "Assurance of corporate social responsibility reports: examining the role of internal and external corporate governance mechanisms", *Corporate Social Responsibility and Environmental Management*, Vol. 29 No. 1, pp. 89-106, doi: 10.1002/csr.2186.

Giannarakis, G. (2014), "The determinants influencing the extent of CSR disclosure", *International Journal of Law and Management*, Vol. 56 No. 5, pp. 393-416, doi: 10.1108/IJLMA-05-2013-0021.

Girella, L., Zambon, S. and Rossi, P. (2021), "Board characteristics and the choice between sustainability and integrated reporting: a European analysis", *Meditari Accountancy Research*, Vol. 30 No. 3, pp. 562-596, doi: 10.1108/MEDAR-11-2020-1111.

Girón, A., Kazemikhasragh, A., Cicchiello, A.F. and Monferrá, S. (2022), "The impact of board gender diversity on sustainability reporting and external assurance: evidence from lower-middle-income countries in Asia and Africa", *Journal of Economic Issues*, Vol. 56 No. 1, pp. 209-224, doi: 10.1080/00213624.2022.2020586.

Global Reporting Initiative (GRI) (2016), "GRI standards", available at: www.globalreporting.org/standards/gri-standards-download-center/

Greckhamer, T., Fiss, P. and Furnari, S. (2018), "Studying configurations with qualitative comparative analysis: best practices in strategy and organisation research", *Strategic Organization*, Vol. 16 No. 4, pp. 482-495.

Gujarati, D.N. and Porter, D.C. (2003), "Basic econometrics (ed.)", McGraw-HiII, New York, NY, available at, available at: http://portal.belesparadisecollege.edu.et:8080/library/bitstream/123456789/2098/1/Basc%20Economics-The%20McGraw-Hill%20Series.pdf

Gul, F.A., Srinidhi, B. and Ng, A.C. (2011), "Does board gender diversity improve the informativeness of stock prices?", *Journal of Accounting and Economics*, Vol. 51 No. 3, pp. 314-338, doi: 10.1016/j.jacceco.2011.01.005.

Gupta, P.K. and Mittal, P. (2021), "Fuzzy bundling of corporate governance practices and performance of Indian firms", *Corporate Governance: The International Journal of Business in Society*, Vol. 22 No. 2, pp. 257-277, doi: 10.1108/CG-12-2020-0546.

Hafsi, T. and Turgut, G. (2013), "Boardroom diversity and its effect on social performance: conceptualization and empirical evidence", *Journal of Business Ethics*, Vol. 112 No. 3, pp. 463-479, doi: 10.1007/s10551-012-1272-z.

Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R.L. (2006), *Multivariate Data Analysis*, Vol. 6, Pearson Prentice Hall, Upper Saddle River, NJ.

Handajani, L., Subroto, B., T., S. and Saraswati, E. (2014), "Does board diversity matter on corporate social disclosure? An Indonesian evidence", *In Journal of Economics and Sustainable Development*, Vol. 5 No. 12, pp. 8-16, available at: http://eprints.unram.ac.id/id/eprint/17307

Harjoto, M., Laksmana, I. and Lee, R. (2015), "Board diversity and corporate social responsibility", *Journal of Business Ethics*, Vol. 132 No. 4, pp. 641-660, doi: 10.1007/s10551-014-2343-0.

Hasan, M., Roebuck, P.J. and Simnett, R. (2003), "An investigation of alternative report formats for communicating moderate levels of assurance", *AUDITING: A Journal of Practice and Theory*, Vol. 22 No. 2, pp. 171-187, doi: 10.2308/aud.2003.22.2.171.

Helfaya, A. and Moussa, T. (2017), "Do board's corporate social responsibility strategy and orientation influence environmental sustainability disclosure? UK evidence", *Business Strategy and the Environment*, Vol. 26 No. 8, pp. 1061-1077, doi: 10.1002/bse.1960.

Hong, Y. and Andersen, M.L. (2011), "The relationship between corporate social responsibility and earnings management: an exploratory study", *Journal of Business Ethics*, Vol. 104 No. 4, pp. 461-471, doi: 10.1007/s10551-011-0921-y.

Hsu, S., Woodside, A. and Marshall, R. (2013), "Critical tests of multiple theories of cultures' consequences", *Journal of Travel Research*, Vol. 52 No. 6, pp. 679-704, doi: 10.1177/0047287512475218.

Ioannou, I. and Serafeim, G. (2012), "What drives corporate social performance the role of nation-level institutions", *Journal of International Business Studies*, Vol. 43 No. 9, pp. 834-864, doi: 10.1057/jibs.2012.26.

Isaksson, L.E. and Woodside, A.G. (2016), "Modeling firm heterogeneity in corporate social performance and financial performance", *Journal of Business Research*, Vol. 69 No. 9, pp. 3285-3314, doi: 10.1016/j.jbusres.2016.02.021.

Jain, T. and Jamali, D. (2016), "Looking inside the black box: the effect of corporate governance on corporate social responsibility", *Corporate Governance: An International Review*, Vol. 24 No. 3, pp. 253-273, doi: 10.1111/corg.12154.

Jizi, M. (2017), "The influence of board composition on sustainable development disclosure", *Business Strategy and the Environment*, Vol. 26 No. 5, pp. 640-655, doi: 10.1002/bse.1943.

Jizi, M.I., Salama, A., Dixon, R. and Stratling, R. (2014), "Corporate governance and corporate social responsibility disclosure: evidence from the US banking sector", *Journal of Business Ethics*, Vol. 125 No. 4, pp. 601-615, doi: 10.1007/s10551-013-1929-2.

Jo, H. and Harjoto, M.A. (2011), "Corporate governance and firm value: the impact of corporate social responsibility", *Journal of Business Ethics*, Vol. 103 No. 3, pp. 351-383, doi: 10.1007/s10551-011-0869-y.

Jones, M.J. and Solomon, J.F. (2010), "Social and environmental report assurance: some interview evidence", *Accounting Forum*, Vol. 34 No. 1, pp. 20-31, doi: 10.1016/j.accfor.2009.11.002.

Kayed, S. and Meqbel, R. (2022), "Earnings management and tone management: evidence from FTSE 350 companies", *Journal of Financial Reporting and Accounting*, doi: 10.1108/JFRA-10-2021-0373.

Kayed, S., Meqbel, R., Arabiat, O., Al-Hazaima, H. and Ghaidan, E. (2022), "Differences in managers vs Audience tone: UK FTSE 350 earnings conference calls", *From the Internet of Things to the Internet of Ideas: The Role of Artificial Intelligence: Proceedings of EAMMIS 2022, Cham*, Springer International Publishing, pp. 637-645, doi: 10.1007/978-3-031-17746-0_50

Kend, M. (2015), "Governance, firm-level characteristics and their impact on the client's voluntary sustainability disclosures and assurance decisions", *Sustainability Accounting, Management and Policy Journal*, Vol. 6 No. 1, pp. 54-78, doi: 10.1108/SAMPJ-12-2013-0061.

Khan, H.R., Ali, M., Olya, H.G.T., Zulqarnain, M. and Khan, Z.R. (2018), "Transformational leadership, corporate social responsibility, organisational innovation, and organisational performance: symmetrical and asymmetrical analytical approaches", *Corporate Social Responsibility and Environmental Management*, Vol. 25 No. 6, pp. 1270-1283, doi: 10.1002/csr.1637.

Khan, A., Muttakin, M.B. and Siddiqui, J. (2013), "Corporate governance and corporate social responsibility disclosures: evidence from an emerging economy", *Journal of Business Ethics*, Vol. 114 No. 2, pp. 207-223, doi: 10.1007/s10551-012-1336-0.

Kolk, A. (2008), "Sustainability, accountability and corporate governance: exploring multinationals' reporting practices", *Business Strategy and the Environment*, Vol. 17 No. 1, pp., pp. 1-15, doi: 10.1002/bse.511.

Kolk, A. and Perego, P. (2010), "Determinants of the adoption of sustainability assurance statements: an international investigation", *Business Strategy and the Environment*, Vol. 19 No. 3, pp. 182-198, doi: 10.1002/bse.643.

Laguir, I., Stekelorum, R., Laguir, L. and Staglianò, R. (2021), "Managing corporate social responsibility in the bank sector: a fuzzy and disaggregated approach", *Corporate Social Responsibility and Environmental Management*, Vol. 28 No. 4, pp. 1324-1334, doi: 10.1002/csr.2142.

Laksmana, I. (2008), "Corporate board governance and voluntary disclosure of executive compensation practices", *Contemporary Accounting Research*, Vol. 25 No. 4, pp. 1147-1182, doi: 10.1506/car.25.4.8.

Lewellyn, K.B. and Fainshmidt, S. (2017), "Effectiveness of CEO power bundles and discretion context: unpacking the 'fuzziness' of the CEO duality puzzle", *Organization Studies*, Vol. 38 No. 11, pp. 1603-1624, doi: 10.1177/0170840616685364.

Liao, L., Lin, T. and Zhang, Y.Y. (2018), "Corporate board and corporate social responsibility assurance: evidence from China", *Journal of Business Ethics*, Vol. 150 No. 1, pp. 211-225, doi: 10.1007/s10551-016-3176-9.

Lombardi, R., Cosentino, A., Sura, A. and Galeotti, M. (2021), "The impact of the EU directive on non-financial information: novel features of the Italian case", *Meditari Accountancy Research*, Vol. 30 No. 6, pp. 1419-1448, doi: 10.1108/MEDAR-06-2019-0507.

McGuinness, P.B., Vieito, J.P. and Wang, M. (2017), "The role of board gender and foreign ownership in the CSR performance of Chinese listed firms", *Journal of Corporate Finance*, Vol. 42, pp. 75-99, doi: 10.1016/j.jcorpfin.2016.11.001.

Mardawi, Z., Seguí-Mas, E. and Tormo-Carbó, G. (2021), "Rethinking the accounting ethics education research in the post-COVID-19 context", *Cogent Business and Management*, Vol. 8 No. 1, p. 1984627, doi: 10.1080/23311975.2021.1984627.

Mardawi, Z., Seguí-Mas, E. and Tormo-Carbó, G. (2023), "Wave after wave: unboxing 40 years of auditing ethics research", *Meditari Accountancy Research*, doi: 10.1108/MEDAR-05-2022-1698.

Maroun, W. (2018), "Modifying assurance practices to meet the needs of integrated reporting: the case for "interpretive assurance", *Accounting, Auditing and Accountability Journal*, Vol. 31 No. 2, pp. 400-427, doi: 10.1108/AAAJ-10-2016-2732.

Maroun, W. (2019), "Exploring the rationale for integrated report assurance", *Accounting, Auditing and Accountability Journal*, Vol. 32 No. 6, pp. 1826-1854, doi: 10.1108/AAAJ-04-2018-3463.

Maroun, W. (2022), "Corporate governance and the use of external assurance for integrated reports", *Corporate Governance: An International Review*, Vol. 30 No. 5, pp. 584-607, doi: 10.1111/corg.12430.

Maroun, W. and Prinsloo, A. (2020), "Drivers of combined assurance in a sustainable development context: evidence from integrated reports", *Business Strategy and the Environment*, Vol. 29 No. 8, pp. 3702-3719, doi: 10.1002/bse.2606.

Maroun, W. and Atkins, J. (2015), "The challenges of assuring integrated reports: views from the South African auditing community. ACCA (association of chartered certified accountants)", available at: www.accaglobal.com/ca/en/technical-activities/technical-resources-search/2015/november/assuring-integrated-reports.html

Martínez-Ferrero, J. and García-Sánchez, I.M. (2017), "Sustainability assurance and assurance providers: corporate governance determinants in stakeholder-oriented countries", *Journal of Management and Organization*, Vol. 23 No. 5, pp. 647-670, doi: 10.1017/jmo.2016.65.

Martínez-Ferrero, J., Rodríguez-Ariza, L. and María García-Sánchez, I. (2017), "The strength of the board on sustainability assurance decisions: the moderating role of family business", *Journal of Small Business and Enterprise Development*, Vol. 24 No. 4, pp. 863-886, doi: 10.1108/JSBED-02-2017-0044.

Martínez-Ferrero, J. and García-Sánchez, I.M. (2018), "The level of sustainability assurance: the effects of brand reputation and industry specialisation of assurance providers", *Journal of Business Ethics*, Vol. 150 No. 4, pp. 971-990, doi: 10.1007/s10551-016-3159-x.

Miras-Rodriguez, M.D.M. and Di Pietra, R. (2018), "Corporate governance mechanisms as drivers that enhance the credibility and usefulness of CSR disclosure", *Journal of Management and Governance*, Vol. 22 No. 3, pp. 565-588, doi: 10.1007/s10997-018-9411-2.

Misangyi, V.F., Greckhamer, T., Furnari, S., Fiss, P.C., Crilly, D. and Aguilera, R. (2017), "Embracing causal complexity: the emergence of a neo-configurational perspective", *Journal of Management*, Vol. 43 No. 1, pp. 255-282, doi: 10.1177/0149206316679252.

Muslu, V., Mutlu, S., Radhakrishnan, S. and Tsang, A. (2019), "Corporate social responsibility report narratives and analyst forecast accuracy", *Journal of Business Ethics*, Vol. 154 No. 4, pp. 1119-1142, doi: 10.1007/s10551-016-3429-7.

Muttakin, M.B. and Subramaniam, N. (2015), "Firm ownership and board characteristics: do they matter for corporate social responsibility disclosure of Indian companies?", *Sustainability Accounting, Management and Policy Journal*, Vol. 6 No. 2, pp. 138-165, doi: 10.1108/SAMPJ-10-2013-0042.

Muttakin, M.B., Khan, A. and Mihret, D.G. (2018), "The effect of board capital and CEO power on corporate social responsibility disclosures", *Journal of Business Ethics*, Vol. 150 No. 1, pp. 41-56, doi: 10.1007/s10551-016-3105-y.

Nekhili, M., Nagati, H., Chtioui, T. and Nekhili, A. (2017), "Gender-diverse board and the relevance of voluntary CSR reporting", *International Review of Financial Analysis*, Vol. 50, pp. 81-100, doi: 10.1016/j.irfa.2017.02.003.

Omran, M.S.Y., Zaid, M.A.A. and Dwekat, A. (2021), "The relationship between integrated reporting and corporate environmental performance: a green trial", *Corporate Social Responsibility and Environmental Management*, Vol. 28 No. 1, pp. 427-445, doi: 10.1002/csr.2059.

Oware, K.M., Amoako, G.K. and Halidu, O.B. (2022), "Does the gender of board members influence the choice of sustainability report format of listed firms? Empirical evidence from India", *Managerial Finance*, Vol. 49 No. 3, pp. 492-511, doi: 10.1108/MF-05-2022-0242.

Oware, K.M. and Appiah, K. (2021), "CSR assurance practice and financial distress likelihood. Evidence from India", *Meditari Accountancy Research*, Vol. 30 No. 6, pp. 1470-1492, doi: 10.1108/MEDAR-10-2020-1055.

Paniagua, J., Rivelles, R. and Sapena, J. (2018), "Corporate governance and financial performance: the role of ownership and board structure", *Journal of Business Research*, Vol. 89, pp. 229-234, doi: 10.1016/j.jbusres.2018.01.060.

Perego, P. and Kolk, A. (2012), "Multinationals' accountability on sustainability: the evolution of third-party assurance of sustainability reports", *Journal of Business Ethics*, Vol. 110 No. 2, pp. 173-190, doi: 10.1007/s10551-012-1420-5.

Peters, G.F. and Romi, A.M. (2015), "The association between sustainability governance characteristics and the assurance of corporate sustainability reports", *Auditing: A Journal of Practice and Theory*, Vol. 34 No. 1, pp. 163-198, doi: 10.2308/ajpt-50849.

Post, C., Rahman, N. and Rubow, E. (2011), "Green governance: boards of directors' composition and environmental corporate social responsibility", *Business and Society*, Vol. 50 No. 1, pp. 189-223, doi: 10.1177/0007650310394642.

Pucheta-Martínez, M.C. and Chiva-Ortells, C. (2018), "The role of directors representing institutional ownership in sustainable development through corporate social responsibility reporting", *Sustainable Development*, Vol. 26 No. 6, pp. 835-846, doi: 10.1002/sd.1853.

Quick, R. and Inwinkl, P. (2020), "Assurance on CSR reports: impact on the credibility perceptions of nonfinancial information by bank directors", *Meditari Accountancy Research*, Vol. 28 No. 5, pp. 833-862, doi: 10.1108/MEDAR-10-2019-0597.

Radhouane, I., Nekhili, M., Nagati, H. and Paché, G. (2020), "Is voluntary external assurance relevant for the valuation of environmental reporting by firms in environmentally sensitive industries?", *Sustainability Accounting, Management and Policy Journal*, Vol. 11 No. 1, pp. 65-98, doi: 10.1108/SAMPJ-06-2018-0158.

Ragin, C.C. (1987), *The Comparative Method: Moving beyond Qualitative and Quantitative Strategies*, University of CA Press, Berkeley, CA, doi: 10.5565/rev/papers/v80n0.1835.

Ragin, C.C. (2000), *Fuzzy-Set Social Science*, University of Chicago Press, Chicago, IL, doi: 10.5565/rev/papers/v80n0.1835.

Ragin, C.C. (2008), *Redesigning Social Inquiry: fuzzy Sets and beyond*, University of Chicago Press, Chicago, IL.

Ragin, C.C. and Fiss, P.C. (2017), *Intersectional Inequality: Race, Class, Test Scores, and Poverty*, University of Chicago Press, Chicago, USA, GoogleBooks-ID: Q3SpDQAAQBAJ.

Ramon-Llorens, M.C., Garcia-Meca, E. and Pucheta-Martínez, M.C. (2021), "Female directors on boards. The impact of faultlines on CSR reporting", *Sustainability Accounting, Management and Policy Journal*, Vol. 12 No. 1, pp. 156-183, doi: 10.1108/SAMPJ-07-2019-0273.

Rao, K., Tilt, C.A. and Lester, L.H. (2012), "Corporate governance and environmental reporting: an Australian study", *Corporate Governance: The International Journal of Business in Society*, Vol. 12 No. 2, pp. 143-163, doi: 10.1108/14720701211214052.

Rossi, A. and Tarquinio, L. (2017), "An analysis of sustainability report assurance statements: evidence from Italian listed companies", *Managerial Auditing Journal*, Vol. 32 No. 6, pp. 578-602, doi: 10.1108/MAJ-07-2016-1408.

Ruhnke, K. and Gabriel, A. (2013), "Determinants of voluntary assurance on sustainability reports: an empirical analysis", *Journal of Business Economics*, Vol. 83 No. 9, pp. 1063-1091, doi: 10.1007/s11573-013-0686-0.

Santamaria, R., Paolone, F., Cucari, N. and Dezi, L. (2021), "Nonfinancial strategy disclosure and environmental, social and governance score: insight from a configurational approach", *Business Strategy and the Environment*, Vol. 30 No. 4, pp. 1993-2007, doi: 10.1002/bse.2728.

Schneider, C.Q. and Wagemann, C. (2010), "Standards of good practice in qualitative comparative analysis (QCA) and fuzzy-sets", *Comparative Sociology*, Vol. 9 No. 3, pp. 397-418, doi: 10.1163/156913210X12493538729793.

Sierra, L., Zorio, A. and García-Benau, M.A. (2013), "Sustainable development and assurance of corporate social responsibility reports published by ibex-35 companies", *Corporate*

Social Responsibility and Environmental Management, Vol. 20 No. 6, pp. 359-370, doi: 10.1002/csr.1303.

Sierra-Garcia, L., Garcia-Benau, M.A. and Bollas-Araya, H.M. (2018), "Empirical analysis of non-financial reporting by Spanish companies", *Administrative Sciences*, Vol. 8 No. 3, p. 29, doi: 10.3390/admsci8030029.

Simnett, R. and Huggins, A.L. (2015), "Integrated reporting and assurance: where can research add value?", *Sustainability Accounting, Management and Policy Journal*, Vol. 6 No. 1, pp. 29-53, doi: 10.1108/SAMPJ-09-2014-0053.

Simnett, R., Vanstraelen, A. and Chua, W.F. (2009), "Assurance on sustainability reports: an international comparison", *The Accounting Review*, Vol. 84 No. 3, pp. 937-967, doi: 10.2308/accr.2009.84.3.937.

Simoni, L., Bini, L. and Bellucci, M. (2020), "Effects of social, environmental, and institutional factors on sustainability report assurance: evidence from European countries", *Meditari Accountancy Research*, Vol. 28 No. 6, pp. 1059-1087, doi: 10.1108/MEDAR-03-2019-0462.

Sundarasen, S., Devi, D., Je-Yen, T. and Rajangam, N. (2016), "Board composition and corporate social responsibility in an emerging market", *Corporate Governance: The International Journal of Business in Society*, Vol. 16 No. 1, pp. 35-53, doi: 10.1108/cg-05-2015-0059.

Tarquinio, L. and Rossi, A. (2017), "Determinants of corporate social responsibility reporting and external assurance: evidence from Italian-listed companies", *International Journal of Accounting, Auditing and Performance Evaluation*, Vol. 13 No. 4, pp. 398-420, doi: 10.1504/IJAAPE.2017.087249.

The IIRC (International Integrated Reporting Council) (2013), *The International IR Framework*, available at: https://integratedreporting.org/wp-content/uploads/2013/12/13-12-08-THE-INTERNATIONAL-IR-FRAMEWORK-2-1.pdf (accessed 24 May 2023).

Tyson, T. and Adams, C.A. (2020), "Increasing the scope of assurance research: new lines of inquiry and novel theoretical perspectives", *Sustainability Accounting, Management and Policy Journal*, Vol. 11 No. 2, pp. 291-316, doi: 10.1108/SAMPJ-03-2018-0067.

Ullmann, A.A. (1985), "Data in search of a theory: a critical examination of the relationships among social performance, social disclosure, and economic performance of US firms", *The Academy of Management Review*, Vol. 10 No. 3, pp. 540-557, doi: 10.5465/amr.1985.4278989.

Uyar, A., Elbardan, H., Kuzey, C. and Karaman, A.S. (2022), "Audit and CSR committees: are they complements or substitutes in CSR reporting, assurance and GRI framework adoption?", *International Journal of Accounting and Information Management*, Vol. 31 No. 1, pp. 1-36, doi: 10.1108/IJAIM-04-2022-0086.

Velte, P. (2021), "Determinants and consequences of corporate social responsibility assurance: a systematic review of archival research", *Society and Business Review*, Vol. 16 No. 1, pp. 1-25, doi: 10.1108/SBR-05-2020-0077.

Woodside, A.G. (2013), "Moving beyond multiple regression analysis to algorithms: calling for adoption of a change in thinking from symmetric to asymmetric thinking in data analysis and crafting theory", *Journal of Business Research*, Vol. 66 No. 4, pp. 466-472, doi: 10.1016/j.jbusres.2012.12.021.

Zahra, S.A. and Stanton, W.W. (1988), "The implications of board of directors composition for corporate strategy and performance", *International Journal of Management*, Vol. 5 No. 2, pp. 229-236.

Zaman, R., Farooq, M.B., Khalid, F. and Mahmood, Z. (2021a), "Examining the extent of and determinants for sustainability assurance quality: the role of audit committees", *Business Strategy and the Environment*, Vol. 30 No. 7, pp. 2887-2906, doi: 10.1002/bse.2777.

Zaman, R., Jain, T., Samara, G. and Jamali, D. (2020), "Corporate governance meets corporate social responsibility: mapping the interface", *Business and Society*, Vol. 61 No. 3, pp. 690-752, doi: 10.1177/0007650320973415.

Zaman, R., Nadeem, M. and Carvajal, M. (2021b), "Corporate governance and corporate social responsibility synergies: evidence from New Zealand", *Meditari Accountancy Research*, Vol. 29 No. 1, pp. 135-160, doi: 10.1108/MEDAR-12-2019-0649.

Zorio, A., García-Benau, M.A. and Sierra, L. (2013), "Sustainability development and the quality of assurance reports: empirical evidence", *Business Strategy and the Environment*, Vol. 22 No. 7, pp. 484-500, doi: 10.1002/bse.1764.

Further reading

Casey, R.J. and Grenier, J.H. (2015), "Understanding and contributing to the enigma of corporate social responsibility (CSR) assurance in the United States", *Auditing: A Journal of Practice and Theory*, Vol. 34 No. 1, pp. 97-130, doi: 10.2308/ajpt-50736.

KMPG (2022), "The KPMG survey of corporate responsibility reporting 2017", available at: https://assets.kpmg/content/dam/kpmg/be/pdf/2017/kpmg-survey-of-corporate-responsibility-reporting-2017.pdf (accessed September 2021).

Moser, D.V. and Martin, P.R. (2012), "A broader perspective on corporate social responsibility research in accounting", *The Accounting Review*, Vol. 87 No. 3, pp. 797-806, doi: 10.2308/accr-10257.

About the authors

Zeena Mardawi is a part-time Assistant Professor of Accounting at An-Najah National University, having received her PhD in Accounting from Universitat Politècnica de València in 2023. Her research interests include accounting, business ethics, corporate governance, corporate social responsibility, and auditing. Mardawi has published numerous research papers in reputed academic journals such as Research in *International Business and Finance, Cogent Business and Management, Meditari Accountancy Research, and Economics & Politics*. Zeena Mardawi can be contacted at: zeena.dwekat@najah.edu

Aladdin Dwekat is an Assistant Professor of Accounting at An-Najah National University, Palestine. He received his PhD in Accounting from the Universitat Politècnica de València, Valencia, Spain, in 2021. In 2023, his thesis was recognized with the Extraordinary Thesis Award from the Universitat Politècnica de València. His main areas of expertise are corporate governance, corporate social responsibility, sustainability performance, and auditing. Dwekat has published many research papers in reputed academic journals such as *Corporate Social Responsibility and Environmental Management, Economic Research-Ekonomska Istraživanja, Research in International Business* and *Finance, and Meditari Accountancy Research*. Aladdin Dwekat is the corresponding author and can be contacted at: aladdin.dwekat@najah.edu

Rasmi Meqbel is an Assistant Professor of Accounting at The Hashemite University, Jordan. He received his PhD in Accounting from the University of Kent, UK, in 2020. His main areas of expertise are corporate governance, corporate social responsibility and earnings management. Meqbel has published various research papers in reputed academic journals such as *Business Ethics, the Environment and Responsibility* and *Journal of Financial Reporting and Accounting*.

Pedro Carmona Ibáñez is an Associate Professor of Accounting at Universitat de València. He has published numerous articles in several leading journals such as *Corporate Social Responsibility and Environmental Management, Research in International Business and Finance, International Review of Economics and Finance, Technological Forecasting and Social Change, Structural Change and Economic Dynamics, Journal of Business Research and Managerial Auditing Journal*. His research interests are in Business Failure, Machine Learning, Fs-QCA and Corporate Governance.