

Vig, Shinu

Article

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Impact of board characteristics and environmental commitment on adoption of voluntary integrated reporting: evidence from India

Shinu Vig 

Symbiosis Centre for Management Studies, Noida, Symbiosis International (Deemed) University, India

ABSTRACT

The main objective of the study is to examine the effect of board characteristics, such as board independence, board diversity (BDv) and absence of chairman-duality, and commitment to environmental disclosures on the voluntary adoption of integrated reporting (IR) in the Indian companies. India presents a unique setting for research study in terms of its voluntary framework and the accelerating adoption of IR framework by companies in India. The sample set comprised the companies listed in the Nifty 50 index of National Stock Exchange of India. The study employed a content analysis method to collect the data relating to board characteristics, environmental commitment (EC) and adoption of IR for the period 2014–2015 to 2020–2021. It was found that board independence, absence of chairman duality, EC, leverage (Lev), firm size and profitability were significantly related to the IR. BDv and firm age were not found to have any significant impact on IR by the sample companies. The study emphasizes the role of board independence (Bin) as an important determinant in explaining the reporting choices of a company. It makes a unique contribution to literature by investigating the impact of companies' EC on the adoption of IR.

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1. Introduction

Corporate reporting has undergone several changes in its form over time due to the shifting demands and conditions of the market. The public's heightened awareness of environmental issues necessitated that a company's long-term strategy for creating value for shareholders adheres to the requirement of social and environmental sustainability (Khatib, 2023; Vitolla et al., 2020; Garcia-Sanchez, 2020). It has also captured the interest of governmental entities, regulatory bodies, policy makers, organizations representing industries, investors and various other stakeholders (Giannarakis et al., 2020; Jitmaneroj, 2016). Consequently, companies engaged in sustainability reporting to communicate to the public the environmental and social impacts of their operations in the annual reports and other distinct standalone corporate reports (Gerged, 2021; Albitar et al., 2020; Agyei & Yankey, 2019).

However, studying various different reports such as annual Financial Reports, Sustainability Reports, Business Responsibility Reports (BRR), corporate social responsibility reports, etc., published by the companies around the world remains a tedious task for the investors. Thus, an integrated report (IR)

CONTACT Shinu Vig  shinu.vig@scmsnoida.ac.in  shinu17@gmail.com  Symbiosis Centre for Management Studies, Noida, Symbiosis International (Deemed) University, India.

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combining financial and non-financial information and providing a holistic view of the company to the stakeholders appears to be the best option (Thomas & Scandurra, 2023). Its purpose is to amalgamate the stakeholders' demands by illustrating how the firm generates and distributes value, how it follows sustainability goals associated with the Sustainable Development Goals (SDGs), and how it is progressing in the domains of environment, society and competition, along with profitability (e.g. Bebbington & Unerman, 2020; Haji and Anifowose, 2016). IR offers supplementary data that proves advantageous for the purpose of decision making, formulation of strategy (Adams, 2015) and assessment of the value of a firm (De Villiers et al., 2017; Del Baldo, 2017). Martin et al. (2019) asserted that the information disseminated *via* IR has an impact on the internal decision-making process of companies by comprehensively illustrating its sustainable growth. In the Discussion article released in September 2011, the IIRC presented the following explanation of integrated reporting (IR), a definition that remains applicable in the present day:

Integrated Reporting brings together the material information about an organization's strategy, governance, performance and prospects in a way that reflects the commercial, social and environmental context within which it operates. It provides a clear and concise representation of how an organization demonstrates stewardship and how it creates value, now and in the future. (IIRC, 2011)

Along with the developed nations, the developing countries have also embarked upon the journey of non-financial disclosures and there is an increasing trend in IR adoption. However, the overall levels of disclosure continue to be low because companies are unwilling to share information, particularly regarding the environmental indicators (Vig & Datta, 2021; Diab & Metwally, 2020; Belal & Cooper, 2011). Reporting under the IR framework is mandatory in some countries, such as South Africa (Conway, 2019). But it is largely voluntary and unregulated in developing countries like India. In 2017, the Securities and Exchange Board of India (SEBI), the capital market regulator, issued a circular advising the Top 500 listed companies to consider incorporating the utilization of the IR Framework for their annual reporting. It has been reported in several studies that Independent Directors and Board members emphasize contemporary reporting by the companies (Senani et al., 2022; Afeltra et al., 2022; Cerbioni & Parbonetti, 2007; Haniffa & Cooke, 2005). Many scholars have studied the influence of corporate governance mechanisms on the degree and qualitative aspect of voluntary disclosures pertaining to the environment (Nishitani et al., 2021; Islam, 2021; Rao et al., 2012; Chau & Gray, 2010; Barako et al., 2006). It has also been found that the board characteristics such as independence and diversity of the board have a significant effect on environmental disclosure and corporate reporting practices (Vig, 2024; Nerantzidis et al., 2022; Agyemang et al., 2020). These environmental disclosures by the companies show their board's environmental commitment (EC; Clarkson et al., 2013). The proportion of independent directors and women directors can also improve the decision-making by providing diverse insights and avoiding the problem of group-think (Kamalath, 2018). The research problem lies in the need to unravel the complexities surrounding the voluntary adoption of IR in India, examining how board characteristics and ECs interplay in influencing companies' decisions to embrace IR voluntarily. Understanding how these governance factors interact with a company's commitment to environmental disclosures is crucial in comprehending the broader dynamics impacting IR adoption. This investigation holds significance for both academic research and practical implications for corporate governance and reporting practices in the Indian business landscape. The study addressed the research question: What is the impact of board characteristics (board independence, board diversity (BDv) and absence of chairman duality) and commitment to environmental disclosures on the voluntary adoption of IR in Indian companies?

2. Integrated reporting in India

In recent years, India has made considerable efforts to improve its reporting and governance procedures. One of the measures implemented by the government to address this issue includes the Companies Act of 2013, along with the introduction of corporate governance regulations and criteria. The companies in India prepare several other reports, such as BRR, CSR reports, sustainability reports, etc. based on SEBI guidelines and international standards, such as UN Global Compact (UNGC) and Global Reporting

Initiative (GRI). Hence it was observed that implementing IR might contribute to the attainment of the more transparency in corporate reporting by mitigating the burden of excessive information resulting from the copious reports released by Indian companies. Similar to other nations, such as Japan, Bangladesh and the UK (Nishitani et al., 2021; Islam, 2021), India has maintained a voluntary approach toward the IR Framework for companies since 2013. In 2017, SEBI issued a circular advising the Top 500 listed companies to contemplate the adoption of the Framework for their annual reporting, as part of the requirement to prepare BRR reports.

According to a study conducted by PWC (2018), a significant majority of respondents, namely over 83%, concurred that IR would enhance their comprehension and portrayal of business risks and opportunities, ultimately facilitating more informed decision-making by investors. Additionally, 90% of the participants indicated that IR would enable the board of directors to gain insights into how the company generates value over time. Mishra (2020) conducted an analysis on 33 companies which adopted IR in India. It was deduced that the selected companies exhibited a satisfactory level of adherence to the prescribed Framework. However, the quantity of companies embracing IR in India was notably limited. Grant Thornton Bharat (2020) additionally carried out a survey in India, in which a significant majority of respondents, amounting to 70%, expressed their conviction regarding the potential enhancement of stakeholder value and corporate reporting through the adoption of IR. However, in a simultaneous manner, 57% of the participants conveyed their concerns pertaining to the insufficiency of information and awareness surrounding IR and its associated advantages. According to AICL (2020), a considerable number of Indian companies, approximately 80, have chosen to voluntarily disclose integrated reports.

In summary, India's unique setting for research on IR stems from its voluntary framework, diverse business landscape, accelerating adoption trends, regulatory influence and the global sustainability context. These factors make India a compelling and distinct case for studying the voluntary adoption of IR and contribute to the global understanding of corporate reporting practices.

3. Literature review and hypothesis development

3.1. Integrated reporting

The concept of IR has garnered the attention of both scholars and professionals ever since its inception in 2013 (Velte and Stawinoga, 2017). Nevertheless, there is an ongoing discourse regarding the advantages and the capacity to fulfill the requirements of various stakeholders. In accordance with the theory of creating value, it is projected that the amalgamation of environmental and social responsibility with companies' strategies and practices mitigates organizational risk and fosters the generation of long-term value (Yu & Zhao, 2015). Firms may potentially reap benefits from the concept of 'integrated thinking' as a potential outcome of IR and enhance their correlation between their value-drivers and strategic objectives (Simnett & Huggins, 2015). As a result, the integration of Environmental, Social, Governance, and Diversity (ESGD) considerations with financial reporting *via* IR will grant stakeholders a better insight of the organization and its future trajectory (Bernardi & Stark, 2018). As indicated by Eccles and Krzus (2010), the application of IR will demonstrate the company's genuine dedication to sustainability matters by incorporating sustainability concerns into the overall business strategy and long-term goals. This will lead to an enhancement in disclosure and transparency through streamlining processes, thereby benefiting all stakeholders.

Through the examination of existing literature, it is clear that in mandatory settings, the implementation of IR enhances the value of a firm (Moloi & Iredele, 2020; Cosma et al., 2018). The research studies have presented mixed findings regarding the significance of IR in a voluntary context. Some studies have indicated a positive impact on market value, return on assets and return on equity (ROE; Islam, 2021; Martinez, 2016), whereas others have reported no correlation or only a limited correlation between certain components of the integrated report and the value of the firm. There exists a level of doubt regarding the potential impact of the IR framework, thus leading firms to exhibit a slow response in voluntarily embracing it (Rabaya & Saleh, 2022). While the IR framework has currently been adopted by a substantial number of organizations but it has faced obstacles due to the lack of clarity surrounding its definitions and its pivotal concept of value creation and integrated thinking (Dumay & Dai, 2017). Furthermore,

adopters have encountered challenges such as the intricacy of processes (Lodhia, 2015), conflicting standards (Robertson & Samy, 2015), the need to balance the interests of multiple stakeholders (Lodhia, 2015; Parrot & Tierney, 2012) and the absence of clear guidance on measurement systems and metrics for integrated thinking and reporting (Dumay & Dai, 2017; Feng et al., 2017; Dumay et al., 2017; Robertson & Samy, 2015). These difficulties emphasize the importance of research that aims to gain insights into the justifications for adoption and the factors that either facilitate or hinder the extent of adoption. Also, there is a scarcity of previous research on the process of adoption (Gibassier et al., 2018). While some studies have considered the motivations behind the decision to adopt (Higgins et al., 2014), only a few (Stubbs & Higgins, 2014) have given attention to the factors that influence the extent of adoption. Further research is necessary to explore the practice of IR in various countries and with a broader spectrum of internal and external stakeholders (Robertson & Samy, 2020). This will contribute to a deeper comprehension of the factors that either facilitate or impede the adoption of IR in different contexts.

3.2. Theoretical framework

Various theories have been used for analysing the voluntary adoption of IR by companies from a theoretical perspective, including stakeholder theory (Dameri & Ferrando, 2022), legitimacy theory (Herbert & Graham, 2022), signaling theory (Elzahar & Hussainey, 2012), agency theory (Vitolla et al., 2019), resource-based theory (Barnabe et al., 2019) and voluntary-disclosure theory (Nishitani et al., 2021). Previous studies (Baalouch et al., 2019; Nishitani et al., 2021) have also employed multifaceted theoretical frameworks as there is a potential convergence among these theories. According to stakeholder theory, organizations must strive to achieve a harmonious balance among the diverse interests of shareholders, employees, customers, suppliers and the community. This theory emphasizes the importance of cultivating positive relationships with multiple stakeholders and ensuring that value is created for them. IR, in turn, aligns with stakeholder theory by prioritizing stakeholder interests. By taking into account the concerns of various stakeholders and presenting a comprehensive overview of the organization's impact, IR aims to foster more responsible and sustainable corporate reporting practices.

Legitimacy theory posits that legitimacy serves as a crucial resource necessary for the survival of an organization. The attribution of legitimacy to an organization is determined by society and is actively pursued by the organization. By employing various strategies pertaining to transparency, it can exert influence or impact the extent of legitimacy it receives from the society. (Cho & Patten, 2007; Janang et al., 2020). Ahmad and Tower (2011) discovered that the presence of legitimacy threats has a significant impact on firms, prompting them to increase their level of disclosure. Conversely, when firms are faced with mandatory requirements, they tend to maintain consistent levels of disclosure. Consequently, variability in environmental disclosures can be more effectively understood and explained through the lens of legitimacy theory. Another theory that is associated with IR is the resource-based theory, which posits that an organization comprises various resources and capabilities such as financial, physical, human, technological, reputational, organizational and intangible. The Framework introduced six capitals that establish a connection among the resources and capabilities utilized by firms to enhance their performance. Additionally, the value creation process outlined in the framework elucidates how organizations employ their diverse capitals as inputs and, through their business activities, transform them into outputs (i.e. products, services, by-products and waste).

In view of the prior research conducted in this field (Gerged, 2021; Tauringana & Chithambo, 2015; Hill & Jones, 1992), this article employs a stakeholder-agency theory framework to explore the association between board characteristics and IR adoption by the companies. This theory aligns the stakeholder and the management interests. The concept of agency theory places significant importance on the traditional principal-agent relationship. Elaborating on the principles of agency theory, the stakeholder-agency theory brings attention to the fact that in contemporary corporations, managers establish connections not only with shareholders but also with all the stakeholders involved (Hill & Jones, 1992; Kock et al., 2012; Gerged, 2021; Raimo et al., 2021). The adoption of IR by companies is a strategic decision that involves various stakeholders, including the board of directors as it is the board's responsibility to direct the company's strategy and long-term goals. IR is aligned with a more sustainable and long-term perspective, which can help the board in making informed decisions about the company's direction and

value creation over time. Independent directors can represent the interests of various stakeholders, including minority shareholders and the broader community. They can advocate for IR as a means to align the company's actions and disclosures with stakeholder expectations, which may extend beyond financial metrics. Bear et al. (2010) asserted that women directors frequently encourage enhanced participatory communication within the board, consequently suggesting that boards with diverse genders may possess a greater capacity to evaluate the requirements of the various stakeholders. Frias-Aceituno et al. (2013) observed that the diversity of genders on boards yields a favorable influence on the voluntary disclosure of comprehensive information. Hence, as the independent and women directors emphasize on more sustainable reporting by the companies, this article argues that they might impact the adoption of IR by the companies.

3.3. Board independence

The efficacy of corporate governance mechanisms in mitigating principal-agent conflicts relies on the constitution of boards of directors (Naciti, 2019). Boards typically consist of inside and outside (independent) members. From an agency viewpoint, boards with a greater proportion of independent directors are more proficient in supervising and regulating management and guiding them in the direction of long-term value creation. The remuneration of independent directors is not correlated with the short-term financial performance of a company, in contrast to the compensation of other members of the board (Jizi et al., 2014). As independent directors have a lesser degree of alignment with the management of the company, they may manifest a keen inclination to encourage companies to disclose higher levels of voluntary information (Michelon & Parbonetti, 2012). Consequently, if independent directors occupy a predominant position on a board, they may possess the authority to compel management to divulge a greater quantity of forward-looking information (Vig & Datta, 2018).

Non-executive board members are more inclined to respond to a request for information (García Sánchez et al., 2011) in comparison to executive members due to the absence of any connection between their actions and the competitors (Prado-Lorenzo & Garcia-Sanchez, 2010). Independent directors are considerably stakeholder orientated, which stems from their distinct nature and lack of financial stakes in the organization. The stakeholder-orientation that characterizes independent directors enables a harmonious balance between the company's expectations and of stakeholders, exceeding the mere interests of shareholders (Michelon & Parbonetti, 2012). Board independence (Bin) is generally determined by the ratio of independent directors to the total strength of the board (Cucari et al., 2018; Hossain & Reaz, 2007). Therefore, the following hypothesis was formed:

Hypothesis 1: Board independence positively impacts the adoption of IR

3.4. Board diversity

In recent times, one topic of discussion in corporate governance literature that is extensively debated is the gender diversity on boards (Ullah et al., 2022). Previous studies have showed that board gender diversity is associated with favorable outcomes in terms of non-financial, i.e. environmental, social and governance disclosures, as well as corporate social responsibility disclosure (Javaid Lone et al., 2016; Orazalin, 2020). In this context, stakeholder theory proposes that BDv might have a positive influence on environmental, social and governance disclosure. Additionally, resource dependence theory proposes that gender diversity enhances decision-making processes and facilitates alignment between the organization and its external environment which provides resources, thereby improving the firm performance (Agyemang-Mintah & Schadewitz, 2019). The presence of women on the boards of UK companies was found to have a positive impact on firm value and supported the government's efforts to promote greater gender equality within corporate boards (Agyemang-Mintah & Schadewitz, 2019).

In general, the presence of women on boards brings different perspectives to board discussions, thereby improving decision-making processes, including those related to environmental, social and governance issues. Stakeholder-agency theory also supports this argument that female directors encourage more participatory approach in board discussions, enabling gender diverse boards to

better understand the stakeholders' needs (Bear et al., 2010; Harjoto et al., 2015). Additionally, Frias-Aceituno et al. (2013) have observed a positive effect of BDv on the voluntary disclosure of comprehensive information. However, there are few studies that did not find significant relationship between board gender diversity and disclosures (Manita et al., 2018). The study conducted by Albitar et al. (2020) examined the possible moderating influence of gender diversity, and board strength on the association between ESG disclosures and firm performance. Their study aimed to explore whether firms' voluntary participation in IR can result in improved financial performance subsequent to the implementation of IR in the United Kingdom in 2013. Raimo et al. (2021) investigated the influence of corporate governance mechanisms on the extent to which environmental information is conveyed in integrated reports. The findings revealed a favorable correlation between the size and gender diversity of the board of directors and the extent of environmental disclosure. Following hypothesis was thus, formed:

Hypothesis 2: Board gender diversity positively impacts the adoption of IR.

3.5. Chairman-CEO duality

Agency theory does not endorse the notion of Chairman-CEO duality and contends that the separation of the roles of the chairman and CEO facilitates enhanced monitoring of managerial conduct, thereby resulting in better firm performance. A multitude of scholarly investigations have scrutinized CEO duality, specifically when the CEO also assumes the role of the chairman of the board (Vig, 2024; Goyal & Park, 2002). Duality undermines the supervisory role of the board, and with regards to transparency, scholars have discovered that chairman-CEO duality results in lower extent of voluntary disclosures (Chau & Gray, 2010; Donnelly & Mulcahy, 2008). CEO duality may engender the release of solely positive news to the stakeholders, consequently diminishing the levels of environmental disclosures (Kang et al., 2007). Pavlopoulos et al. (2017) examined the impact of CEO duality on IR quality and found that separating the two roles lead to better reporting quality. Consequently, this study establishes a connection between the absence of chairman-CEO duality (ACD) and the adoption of IR. Therefore, the subsequent hypothesis was formulated.

Hypothesis 3: Absence of chairman-CEO duality positively impacts the adoption of IR.

3.6. Environmental commitment

In certain countries such as South Africa and New Zealand, the disclosure of environmental information is mandatory, while it is voluntary in countries such as Japan, Bangladesh and India. The environmental issues of greenhouse gas (GHG) emissions and climate change present significant business risks for firms. These risks pose significant threats to firms' financial performance and consequently motivate them to invest in environmental initiatives (Hassan & Romilly, 2018) and respond by issuing voluntary disclosures regarding the environmental impacts of their operations. They employ various means to convey this information to their stakeholders, with the most prevalent method being the inclusion of such information in their annual reports (Depoers et al., 2016). Companies worldwide adopt different frameworks to disclose their environmental practices, such as the GRI (Thomas, 2019), Carbon Disclosure Project (CDP) (Ben-Amar et al., 2017) and the Bloomberg measure (Clarkson et al., 2013). This practice allows organizations to actively participate in the conservation of the environment, while simultaneously cultivating a harmonious relationship and establishing trust with stakeholders (Stuebs & Sun, 2015; Akbas, 2016). Environmental disclosures and environmental policy also show the firm's EC (Stanwick & Stanwick, 2000).

Voluntary disclosures pertaining to the environment have the potential to demonstrate a company's commitment to the environment across various dimensions, including the governance structure addressing environmental concerns, the systems in place to manage environmental matters, as well as the environmental vision and strategy conceived by management (Clarkson et al., 2013). Studies conducted in India have documented that the level of environmental disclosures is considerably low (Kansal et al.,

2014). Moreover, it has been observed that these disclosures primarily take the form of narratives (Chatterjee and Zaman Mir 2008), hence, lacking in quantitative information (Vig, 2024; Shukla & Vyas, 2013). But as the environmental disclosures and environmental policy are not mandatory for companies in India, and hence not a compliance strategy, voluntary disclosures might reflect the company's EC.

There has been an ongoing discussion regarding the extent to which and how IR promotes transparency in companies' commitment to sustainability (Adams, 2015; Flower, 2015). Numerous studies on sustainability reporting in recent years have addressed the issue of information disclosure being driven by the need for legitimacy rather than a genuine sense of responsibility or commitment to transparency (Nishitani et al., 2021; Hopwood, 2009). However, previous research has reported that the IR approach places great emphasis on the economic, social and ECs that form its foundation (Adams et al., 2016; Omran et al., 2021). While IR serves as a means of holding the organization accountable as a whole, efforts to further integrate the company's stated commitments into its internal operations have been motivated by their corporate governance practices. Firms might exhibit their commitment to sustainability to various stakeholders, which helps in the preservation of their social licence to operate while also showcasing their market dominance. The social and environmental concerns, which have typically been disregarded as 'externalities,' are now acknowledged as having the potential to significantly affect investors financially (Brown & Dillard, 2014). In the light of this discussion, this article argues that the companies that have already exhibited their EC are more likely to adopt IR. Hence, it was hypothesized:

Hypothesis 4: Environmental commitment positively impacts the adoption of IR.

4. Methodology

4.1. Sample

The sample set comprised the companies listed in the Nifty 50 index of National Stock Exchange (NSE) of India which consists of 50 stocks and represents the largest companies listed on NSE. Seven companies were operating in the banking and financial services field and were excluded due to the divergence in their business operations and the distinctive approach in which they present their financial records in comparison to non-financial enterprises. Hence, finally the data comprised a balanced sample of 43 companies. The study was conducted for the financial years 2014–2015 to 2020–2021. Several significant changes were introduced to the corporate governance regime in India through the implementation of the Companies Act, 2013. Therefore, data pertaining to the period after the implementation of new law was considered for this study. There were 301 firm year observations.

4.2. Data collection

The study employed a content analysis method to collect the data relating to board characteristics, EC and adoption of IR. The utilization of content analysis as a method for data collection is widely prevalent in studying corporate governance and disclosure of reporting practices of companies (Kilic & Kuzey, 2018; Sharma et al., 2020). This technique includes the systematic application of procedures to examine the contents of written documents (Halme & Huse, 1997), which in this study comprised the annual reports and corporate websites of the sample companies. The data utilized in this study were obtained from publicly available sources and do not involve human subjects. No ethical approval was required for this research. The data were collected from annual reports and sustainability reports of the sample listed companies which are publicly available on their websites. Access to the data is unrestricted and can be obtained from company websites. No rights or permissions are required to access or utilize the data for research purposes.

4.3. Definition and measurement of variables

4.3.1. Dependent variable: integrated reporting

The dependent variable for this study is the adoption of IR by the sample companies. It focused primarily on adoption or non-adoption of IR rather than the qualitative aspect of such reporting. Thus, the dependent variable has a binary value of 0 and 1 wherein the companies are awarded a score of 1 if

Table 1. Description of variables.

Variables	Variable description
Dependent variable	
Integrated reporting (IR)	Adoption or non-adoption of Integrated reporting
Independent variables	
Board independence (Bin)	% Of independent board members
Board diversity (BDv)	Number of female board members
Absence of Chairman-CEO duality (ACD)	Absence or presence of Chairman-CEO duality
Environmental commitment (EC)	Calculated on the basis of environmental disclosures made out of 10 expected disclosures
Control variables	
Leverage (Lev)	Ratio of total debts to total assets
Size (Siz)	Log of total assets
Firm profitability (FPro)	Return on equity
Firm age (Age)	Number of years since the establishment of the firm

they have adopted IR and 0 if they have not adopted it. The websites of the companies were analyzed to collect the data for the same.

4.3.2. Independent variables. This article investigated the effect of BIn, BDv and ACD along with EC on the adoption of IR. BIN and BDV are represented by continuous values, whereas ACD is represented by a binary value (0 or 1) (refer to Table 1). To normalize the variables with continuous values, the process of minimum–maximum normalization was employed. This methodology is commonly utilized in the computation of indices (Mishra & Nathan, 2018; Dinda & Ghosh, 2015), wherein the value of variable x_i is calculated as:

$$X = \frac{x_i - x_{\min}}{x_{\max} - x_{\min}}$$

BIn: It was calculated on the basis of percentage of independent directors on the board of a company.

BDv: It was calculated as the number of female directors on the board of a company.

ACD: It was measured on the basis of binary value of 0 and 1 wherein the companies are awarded a score of 1 if these two positions are separated and 0 if they are not separated.

EC: The proxy for EC in this study was the environmental disclosure index of the sample companies. The content analysis of the sustainability/BRR and annual reports of the companies was conducted in order to gather information pertaining to 10 key themes. These themes include carbon emissions, other emissions (Nox and Sox), total consumption of energy and renewable energy, total consumption of water, waste water management, waste segregation, hazardous waste generated, plastic waste generated and waste recycling (refer to Table 2). These themes were selected, as according to a report from the Climate Disclosure Standards Board of the World Business Council for Sustainable Development (2018), environmental reporting predominantly focused on waste, emissions, and pollution. Key subject areas for sustainability reporting in India encompassed waste, emissions, water, energy, and resources. All of these measures not only yield positive environmental outcomes but also contribute to the establishment of sustainable development, alongside financial benefits. The data used in this study was binary in nature, allowing for the classification of whether or not a company disclosed information on these environmental indicators. Consequently, scores were assigned based on the presence or absence of such disclosures. EC (proxied through environmental disclosure index) was calculated in the following manner:

$$EC = \text{Disclosures made} / \text{Total number of expected disclosures}$$

Control variables: The control variables of leverage (Lev), firm size, profitability and firm age have been examined by various scholars (Jackling & Johl, 2009; Vig, 2024). In multiple corporate governance studies, firm size has been considered as a control variable (Senani et al., 2022; Vitolla et al., 2019) as a company's size can potentially impact its environmental footprint. Lev was measured as the proportion of total debts to total assets and the company size (Siz) was considered as log of total assets (Kilic & Kuzey, 2018). Firm profitability (FPro) serves as a representative measure of financial performance, specifically evaluated through the calculation of ROE. This metric is widely recognized as a crucial determinant of disclosure quality. Depending on their level of profitability, organizations may choose to allocate varying amounts of resources toward the collection and dissemination of information (Vitolla et al. (2019). Firm

Table 2. Constituent variables of environmental commitment.

S. No	Environmental disclosures (binary)
1	Carbon emissions
2	Other emissions (Nox and Sox)
3	Total energy consumption
4	Renewable energy consumption
5	Total water consumption
6	Waste water management
7	Waste segregation
8	Hazardous waste generated
9	Plastic waste generated
10	Waste recycling

Table 3. Descriptive statistics.

	N	Minimum	Maximum	Mean	Std. deviation
IR	301	0.000	1.000	0.409	0.493
BIn	301	33.333	83.333	53.664	10.583
BDv	301	0.000	5.000	1.705	0.903
ACD	301	0.000	1.000	0.560	0.498
EC	301	0.167	1.000	0.781	0.295
Lev	301	0.000	0.508	0.140	0.153
Siz	301	10.723	15.865	12.990	1.208
FPro	301	-2.85	0.816	0.187	0.231
Age	301	24.00	114.00	58.02	22.39
Valid N (listwise)	301	-	-	-	-

Age (Age) is used as another control variable, which is calculated as the duration in years since the establishment of the firm. This measurement serves as an approximation for the level of stability and risk. The companies that have been in existence for a longer period of time may have a greater inclination toward the gathering and distribution of information (Raimo et al., 2021).

5. Analysis and findings

5.1. Descriptive statistics

Table 3 presents the descriptive statistics for the variables utilized in the investigation. The mean value for BIn is 53.664, suggesting that the average proportion of independent directors on the board was 53%. The number of female board members (BDv) ranges from 0 to 5, with an average of 1.705, signifying that, on average, companies in the sample appointed one woman director on the Board, which aligns with the minimum requirement stipulated by the Indian Companies Act 2013. The Age of companies ranges from 24 to 114, with a mean value of 58.02. The EC has a mean value of 0.781, implying that the sample companies exhibited environmental disclosures above the average level. The frequency analysis revealed that out of the sample 19 companies adopted IR and 25 companies had an absence of chairman duality.

5.2. Testing of data

This research employed multiple regression method to examine the influence of Board independence, BDv, ACD and EC on the adoption of IR. Prior to conducting the regression analysis and testing of the hypothesis, the data underwent testing to verify the fundamental assumptions of normality, stationarity and homoscedasticity (Buallay et al., 2021). The augmented Dickey–Fuller test (ADF test) was utilized to assess the unit root of all series, including IR, Board independence, BDv, ACD, EC, Lev, Firm size and FPro and Age while normality was assessed using the Jarque–Bera test. All the data series were found to exhibit both stationarity and normality.

Detecting endogeneity in a regression model involves assessing whether there is a correlation between the error term and the independent variables (Kilic et al., 2021). Residual analysis may help in detecting the endogeneity issues. Residuals (the differences between the observed and predicted values) were examined for patterns. Residuals were plotted against each independent variable to provide insights. No

Table 4. Spearman correlation matrix.

		Bln	ACD	BDv	Lev	Siz	FPro	Age	EC	IR
Bln	Correlation coefficient	1.000								
	Sig. (2-tailed)									
ACD	Correlation coefficient	0.248**	1.000							
	Sig. (2-tailed)	0.000								
BDv	Correlation coefficient	0.158**	0.236**	1.000						
	Sig. (2-tailed)	0.005	0.000							
Lev	Correlation coefficient	-0.063	-0.098	-0.034	1.000					
	Sig. (2-tailed)	0.273	0.085	0.554						
Siz	Correlation coefficient	-0.262**	-0.069	-0.125*	0.372**	1.000				
	Sig. (2-tailed)	0.000	0.230	0.029	0.000					
FPro	Correlation coefficient	0.1192*	0.1113*	0.012	0.158**	0.231**	1.000			
	Sig. (2-tailed)	0.005	0.000	0.073	0.005	0.000				
Age	Correlation coefficient	0.258**	0.136**	0.070	-0.2023**	0.119*	0.114*	1.000		
	Sig. (2-tailed)	0.015	0.000	0.005	0.000	0.005	0.000			
EC	Correlation coefficient	-0.015	0.129*	-0.196**	-0.105	0.298**	-0.186	0.118*	1.000	
	Sig. (2-tailed)	0.787	0.024	0.001	0.065	0.000	0.001	0.023		
IR	Correlation coefficient	0.004	0.197**	0.007	-0.043	0.183**	0.005	0.012	0.135*	1.000
	Sig. (2-tailed)	0.945	0.001	0.897	0.452	0.001	0.646	0.473	0.018	

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

systematic pattern in the residuals was observed, hence it did not indicate endogeneity. Also, the Jarque-Bera test was used to check the normality of residuals. Departures from normality might suggest issues with the error term, including endogeneity (Vig, 2024).

5.3. Correlation analysis

Spearman's correlation analysis, a nonparametric method, was utilized to examine the linear relationships between the included variables. This was necessary as some variables of interest, such as IR and ACD are categorical binary variables (Kilic et al., 2021). The resulting Spearman's correlation coefficients for each pair of variables are presented in Table 4. The findings indicate that IR is positively associated with Bln, BDv, Siz, FPro, Age and EC while it exhibits a negative relationship with Lev.

5.4. Panel data regression analysis

In examining the influence of various board characteristics – board independence, BDv, ACD and EC on the adoption of IR, a panel regression model was employed. This model is particularly suitable for analyzing data that involves multiple observations over time for the same firms, thereby allowing us to account for both time-invariant and time-variant factors (Hsiao, 2014; Alipour et al., 2019). Various researchers have employed ordinary least squares (OLS) regression to estimate this association (Kilic & Kuzey, 2018; Omran et al., 2021). However, a limitation of this approach is the failure to account for heterogeneity over time or across groups. According to Wooldridge (2010), pooled OLS is employed when a different sample is selected for each year/period of the panel data. Fixed effects or random effects are employed when the same sample of entities, companies in this case, are observed. The use of panel data allows to investigate both the dynamic relations and cross-section heterogeneity. With panel data, it is to be identified that whether to use a random effect or a fixed effects model. In order to test that which estimation approach is more appropriate in the present research study, both the random effects and fixed effects estimation approaches were used to estimate the regression equation. Consequently, Hausman test was used to identify that which approach is more appropriate.

Table 5. Regression analysis.

Variable	Fixed effects model				Random effects model			
	Coefficients	Std. error	t-Statistic	Prob	Coefficients	Std. error	t-Statistic	Prob
(Constant)	-0.96	0.328	-2.929	0.004	-0.84	0.418	-2.718	0.007
Bin	-0.001	0.002	-0.696	0.015	-0.001	0.012	-0.696	0.018
BDv	0.02	0.029	0.706	0.48	0.019	0.037	0.617	0.536
ACD	0.186	0.052	3.604	0.001	0.172	0.066	2.611	0.011
EC	-0.015	0.092	-0.162	0.032	-0.015	0.089	-0.261	0.012
Lev	-0.455	0.182	-2.506	0.013	-0.315	0.198	-2.515	0.013
Siz	0.096	0.024	3.953	0.000	0.085	0.027	3.887	0.000
FPro	0.093	0.022	4.175	0.000	0.099	0.012	4.286	0.001
Age	0.004	0.031	0.465	0.824	0.001	0.021	0.368	0.713
Adjusted R ²	0.4635				0.3258			
F-Statistic	4.351				3.805			
Prob (F-statistic)	0.000				0.0016			

Table 6. Hausman test statistics.

Test summary	Chi-Sq. statistic	Chi-Sq. d.f	Prob
Cross-section random	5.123	3	0.027

$$IR = \alpha + \beta_1 Bin_{it} + \beta_2 BDv_{it} + \beta_3 ACD_{it} + \beta_4 EC_{it} + \beta_5 Lev_{it} + \beta_6 Siz_{it} + \beta_7 FPro_{it} + \beta_8 Age_{it} + \varepsilon_{it}$$

where,

IR=Adoption of Integrated Reporting

Bin=Board independence

BDv=Board gender diversity

ACD=Absence of chairman duality

EC=Environmental Commitment

Lev=Leverage

Siz=Firm size

FPro=Firm profitability

Age=Firm age

α is constant, β_1 β_8 are coefficients calculated for firm i (1, 2, ...43) for the time period t (2015 ...2021), ε is the error term and other variables are discussed above.

The regression model examined the impact of board independence, board's gender diversity, the ACD and EC on the adoption of IR in sample companies. The empirical outcome of panel regression analysis has been presented in Table 5. Hausman test was applied to determine which model- fixed effects or random effects, better explains the impact of board characteristics on IR adoption. The specification test proposed by Hausman (1978) is the most widely accepted procedure to select the appropriate model in this case. Hausman test has been widely used in the extant literature in the field of corporate governance (Khatib & Nour, 2021). The null hypothesis of Hausman test is that the preferred model is random effects; the alternate hypothesis is that the preferred model is fixed effects. Table 6 shows the results of Hausman test which indicates that fixed effects model is more appropriate and the random effects model is not preferred. As the p value is less than the significance level, it would reject the null hypothesis in favor of the alternative hypothesis, suggesting that the fixed effects model is more appropriate due to its efficiency gains. The explanatory power of the fixed effect model within the firms, over the years, as expressed by adjusted R² is calculated to be 46.35%. The acceptance of the fixed effects model indicates a recognition of the importance of individual-specific effects and their role in shaping the observed patterns within the sample over time. It contributes to a more nuanced and internally valid analysis, providing insights into the impact of time-invariant characteristics on the dependent variable.

As per the results in Table 5, fixed effect model indicates that Bin displayed a p value of 0.015, signifying a highly significant association with IR. The p value of BDv is 0.48, i.e. greater than 0.05. It means that BDv does not have any significant impact on IR. p Value for ACD is 0.001. Thus, the results of the analysis show that ACD had a positive and significant influence on IR. In the same model the p value for EC is 0.032 which means that it has significant impact on IR. Liv and Siz were also found to have

significant impact on IR. FPro also has a significant impact on IR. While Age was found to have no significant impact on IR, with a p value of 0.824.

The results of panel analysis are consistent with the notion that independent directors demand the firm's management to disclose a greater amount of forward-looking information and impact the adoption of IR. BIn and EC were also found to have significant association with adoption of IR. This supports the literature that independent directors are an effective means of implementing corporate governance practices (Mallin et al., 2014; Amran et al., 2013). According to Janang et al. (2020), the presence of independent directors has an impact on the disclosure and reporting practices as directors play a critical part in the decision-making process regarding communication strategies with stakeholders. According to the stakeholder-agency theory perspective the article also found that in instances where a company acknowledges the legitimacy of stakeholder's demands, the company is inclined to voluntarily demonstrate higher EC, which is then significantly associated to its voluntary adoption of IR. BDv was not found to have any significant impact on IR by the sample companies, as contrary to the other studies (Kilic & Kuzey, 2018; Chouaibi et al., 2022). This insignificant relation may be due to the fact that the level of female representation on corporate boards in India is considerably low. The Indian Company law mandated all the listed companies to appoint at least one female director on the board. But, in response to the regulatory pressure, top management has adhered to a superficial approach, appointing female directors merely as a symbolic gesture. Consequently, it is highly probable that a single female director on the board might conform to the collective behavior of the group rather than exercise her own individual agency. This observation lends support to the critical mass theory, which posits that the interactions among minority groups within a board will deepen once the size of the group surpasses a certain threshold or 'critical mass' (Sanan, 2018). Hence, our research underlines importance of increasing gender diversity within Indian corporate boards. The most significant variables that impacted adoption of IR were absence of chairman duality, firm size and profitability (ROE), with the values of 0.00. These findings are consistent with the findings of Ward and Forker (2017) and Chouaibi et al. (2022) who suggested that the separation in the roles of CEO and chairman might enhance the quality of control and thus increase transparency and more disclosure of information. Furthermore, in accordance with agency theory, Fama and Jensen (1983) proposed that the existence of CEO duality impedes the board's capacity to oversee management, consequently exacerbating the agency dilemma.

Findings reveal that company size measured through total assets yielded significant findings, demonstrating that larger companies possess greater resources to allocate substantial investments toward IR. The enhanced visibility of these companies compels them to adopt better reporting practices (Vurro & Perrini, 2011). When the act of disclosing incurs costs, only the companies that can sufficiently disclose positive information will deem it worthwhile to bear the costs of disclosure. Also, larger companies exhibit a greater reliance on capital markets compared to smaller enterprises, thereby expanding the significance of incorporating integrated disclosures to engage with diverse stakeholders (Frías-Aceituno et al., 2013). Findings show that the company's profitability plays a significant role in adoption of IR, given the substantial expenses incurred during the preparation phase. The profitability of a firm influences the strategic decisions made by organizations, whereby they may opt to allocate varying levels of resources toward the process of creating integrated reports (Vitolla et al., 2020). However, firm's age did not have any impact on IR adoption. This indicates that IR adoption might be influenced by a variety of factors beyond firm age, such as industry characteristics, business strategies and stakeholder expectations.

6. Implications

The findings of this study have several research implications. It contributes to the scant literature on voluntary IR as most of the previous studies concentrate on the countries that have mandated IR (Conway, 2019; Steyn, 2014). As per author's knowledge it is the first article investigating the impact of companies' EC on their adoption of IR. In a developing nation like India companies adopt environmental disclosures and IR on a voluntary basis as they have not been mandated by any regulation. Thus, the adoption of IR depends on their board's decision and also their EC. The article emphasizes the role of BIn as an important determinant in explaining the reporting choices of a company. Hence, the study complements the prior literature highlighting the impact of independent directors and independent chairman on the adoption of IR.

The study has practical implications. By investigating the factors influencing the voluntary adoption of IR in Indian companies, the research contributes to enhancing corporate transparency. This transparency is vital for stakeholders, including investors, regulators and the public, to make informed decisions and hold companies accountable for their environmental and governance practices. With the adoption of IR frameworks, companies can increase transparency and would also benefit from a decrease in information asymmetry and agency costs. The study also has implications for policy makers as they might push for more independent and strong boards and the inclusion of female directors as it has been shown to have positive impact on adoption of IR practices and thus, better reporting and disclosures. This might be a better approach rather than mandating the adoption of IR which might encourage tokenism but not ensure better quality disclosures.

7. Conclusion

The significance of integrated reports is increasing as a means of corporate communication and disclosure. IR represents an innovative instrument that enables the amalgamation of financial and non-financial information within a single report. Over the course of the previous few years, India has witnessed remarkable advancements in the realm of corporate reporting and disclosures. Within the context of an emerging economy, India presents a unique research setting as IR is adopted by Indian companies on a voluntary basis. Though the number of companies adopting IR framework is growing, yet it is limited in India. The inconsistencies in reporting among the companies are, to some extent, attributable to the relatively lower significance of climate change and governance concerns in the reporting framework in India. Moreover, though IR is advantageous, its implementation is fraught with challenges. One such challenge pertains to the task of determining and quantifying non-financial metrics and aligning them with financial performance. The sources of non-financial information are diverse and inconsistent, and the systems for consolidating and reporting of such information are less automated in India compared to financial data, which is relatively easier to capture.

The primary aim of this study was to examine the factors, namely board independence, BDv, chairman independence and EC, that determine the adoption of IR in India. The study also examined whether the companies that have already exhibited their EC are more likely to adopt IR. It was found that board independence, absence of chairman duality, EC, Lev and firm size were significantly related to the IR. Hence it shows that in a voluntary setting, the board of directors, particularly independent board members, plays a crucial role in the phase of integrated thinking and adoption of IR. Separation of the roles of chairmen and CEO also had an impact of adoption of IR. It was also found that the firm size had a significant impact on IR and the larger companies were willing to voluntarily adopt IR. The study lends support to the extant literature by expanding the discourse on IR in emerging economies. It also expands the boundaries of stakeholder-agency theory, a theoretical framework that is not much utilized in explaining phenomena related to IR. It is also the first study to examine the impact of firms' EC on their adoption of IR.

With the overall increase in awareness and the provision of more explicit guidelines, it is expected that greater number of companies in India might embrace IR in the forthcoming years. It is crucial to generate awareness regarding the advantages of IR in India. In view of the important role of independent directors' regulators might provide training to them in order to equip them with the necessary skills and knowledge for the successful implementation of IR and to cultivate awareness.

The study has a few limitations. As the companies adopting IR framework is very low in India, hence, the study relies on a small sample. Due to the same reason, the study focused on the adoption of IR rather than the quality of reporting under this framework. Moreover, as the study is based on only one emerging economy, i.e. India, the future research might be focused on making a comparative study between voluntary setting and mandatory setting. Future studies might also expand the research by drawing sample from other emerging economies.

Author contribution statement

The author confirms sole responsibility for the following: study conception and design, data collection, analysis and interpretation of results, and manuscript preparation.

Disclosure statement

There is no conflict of interest to be reported for this manuscript.

About the author

Shinu Vig is currently working as an Associate Professor at Symbiosis Centre for Management Studies, Noida, India. She has been awarded her Ph.D. at T ERI School of Advanced Studies, India. She is a qualified Company Secretary and a law and commerce graduate, having an experience of more than fourteen years in corporate and academics. Her research interests are corporate governance, business sustainability, and corporate social responsibility.

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ORCID

Shinu Vig  <http://orcid.org/0000-0002-0063-0470>

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Data sharing is not applicable to this article as no new data were created or analyzed in this study.

References

- Adams, C. A. (2015). The international integrated reporting council: A call to action. *Critical Perspectives on Accounting*, 27(2), 23–28. <https://doi.org/10.1016/j.cpa.2014.07.001>
- Adams, C. A., Potter, B., Singh, P. J., & York, J. (2016). Exploring the implications of integrated reporting for social investment (disclosures). *The British Accounting Review*, 48(3), 283–296. <https://doi.org/10.1016/j.bar.2016.05.002>
- Afeltra, G., Alerasoul, A., & Usman, B. (2022). Board of directors and corporate social reporting: A systematic literature network analysis. *Accounting in Europe*, 19(1), 48–77. <https://doi.org/10.1080/17449480.2021.1979609>
- Agyei, S. K., & Yankey, B. (2019). Environmental reporting practices and performance of timber firms in Ghana: Perceptions of practitioners. *Journal of Accounting in Emerging Economies*, 9(2), 268–286. <https://doi.org/10.1108/JAEE-12-2017-0127>
- Agyemang, A. O., Yusheng, K., Ayamba, E. C., Twum, A. K., Chengpeng, Z., & Shaibu, A. (2020). Impact of board characteristics on environmental disclosures for listed mining companies in China. *Environmental Science and Pollution Research International*, 27(17), 21188–21201. <https://doi.org/10.1007/s11356-020-08599-2>
- Agyemang-Mintah, P., & Schadewitz, H. (2019). Gender diversity and firm value: Evidence from UK financial institutions. *International Journal of Accounting & Information Management*, 27(1), 2–26. <https://doi.org/10.1108/IJAIM-06-2017-0073>
- Ahmad, R. A. R., & Tower, G. (2011). Regulatory and industry influences on the communication of environmental information: A comparative study of top French and Australian firms. *Journal of the Asia-Pacific Centre for Environmental Accountability*, 17(1), 5–27. https://www.unisa.edu.au/siteassets/episerver-6-files/global/business/centres/cags/docs/apcea/apcea_2011_171_ahmad_tower.pdf
- AICL. (2020). *India adopts IR*. <https://www.integratedreporting.org/wp-content/uploads/2020/12/IndiaAdoptsIR-2020.pdf>
- Akbas, F. (2016). The calm before the storm. *The Journal of Finance*, 71(1), 225–266. <https://doi.org/10.1111/jofi.12377>
- Albitar, K., Hussainey, K., Kolade, N., & Gerged, A. M. (2020). ESG disclosure and firm performance before and after IR: The moderating role of governance mechanisms. *International Journal of Accounting & Information Management*, 28(3), 429–444. <https://doi.org/10.1108/IJAIM-09-2019-0108>
- Alipour, M., Ghanbari, M., Jamshidinavid, B., & Taherabadi, A. (2019). Does board independence moderate the relationship between environmental disclosure quality and performance? Evidence from static and dynamic panel data. *Corporate Governance: The International Journal of Business in Society*, 19(3), 580–610. <https://doi.org/10.1108/CG-06-2018-0196>
- Amran, A., Zain, M. M., Sulaiman, M., Sarker, T., & Ooi, S. K. (2013). Empowering society for better corporate social responsibility (CSR): The case of Malaysia. *Kajian Malaysia* 31 (1), 57. <http://hdl.handle.net/10072/54808>.
- Baalouch, F., Ayadi, S. D., & Hussainey, K. (2019). A study of the determinants of environmental disclosure quality: Evidence from French listed companies. *Journal of Management and Governance*, 23(4), 939–971. <https://doi.org/10.1007/s10997-019-09474-0>

- Barako, D. G., Hancock, P., & IZan, H. Y. (2006). Factors influencing voluntary corporate disclosure by Kenyan companies. *Corporate Governance: An International Review*, 14(2), 107–125. <https://doi.org/10.1111/j.1467-8683.2006.00491.x>
- Barnabè, F., Giorgino, M. C., & Kunc, M. (2019). Visualizing and managing value creation through integrated reporting practices: A dynamic resource-based perspective. *Journal of Management and Governance*, 23(2), 537–575. <https://doi.org/10.1007/s10997-019-09467-z>
- Bear, S., Rahman, N., & Post, C. (2010). The impact of board diversity and gender composition on corporate social responsibility and firm reputation. *Journal of Business Ethics*, 97(2), 207–221. <https://doi.org/10.1007/s10551-010-0505-2>
- Bebbington, J., & Unerman, J. (2020). Advancing research into accounting and the UN sustainable development goals. *Accounting, Auditing & Accountability Journal*, 33(7), 1657–1670. <https://doi.org/10.1108/AAAJ-05-2020-4556>
- Belal, A. R., & Cooper, S. (2011). The absence of corporate social responsibility reporting in Bangladesh. *Critical Perspectives on Accounting*, 22(7), 654–667. <https://doi.org/10.1016/j.cpa.2010.06.020>
- Ben-Amar, W., Chang, M., & McIlkenny, P. (2017). Board gender diversity and corporate response to sustainability initiatives: Evidence from the carbon disclosure project. *Journal of Business Ethics*, 142(2), 369–383. <https://doi.org/10.1007/s10551-015-2759-1>
- Bernardi, C., & Stark, A. W. (2018). Environmental, social and governance disclosure, integrated reporting, and the accuracy of analyst forecasts. *The British Accounting Review*, 50(1), 16–31. <https://doi.org/10.1016/j.bar.2016.10.001>
- Brown, J., & Dillard, J. (2014). Integrated reporting: On the need for broadening out and opening up. *Accounting, Auditing & Accountability Journal*, 27(7), 1120–1156. <https://doi.org/10.1108/AAAJ-04-2013-1313>
- Buallay, A., Al Hawaj, A. A., & Hamdan, A. (2021). Integrated reporting and performance: A cross-country comparison of GCC Islamic and conventional banks. *Journal of Islamic Marketing*, 12(8), 1619–1636. <https://doi.org/10.1108/JIMA-08-2017-0084>
- Cerbioni, F., & Parbonetti, A. (2007). Exploring the effects of corporate governance on intellectual capital disclosure: An analysis of European biotechnology companies. *European Accounting Review*, 16(4), 791–826. <https://doi.org/10.1080/09638180701707011>
- Chatterjee, B., & Zaman Mir, M. (2008). The current status of environmental reporting by Indian companies. *Managerial Auditing Journal*, 23(6), 609–629. <https://doi.org/10.1108/02686900810882138>
- Chau, G., & Gray, S. J. (2010). Family ownership, board independence and voluntary disclosure: Evidence from Hong Kong. *Journal of International Accounting, Auditing and Taxation*, 19(2), 93–109. <https://doi.org/10.1016/j.intaccudtax.2010.07.002>
- Cho, C. H., & Patten, D. M. (2007). The role of environmental disclosures as tools of legitimacy: A research note. *Accounting, Organizations and Society*, 32(7–8), 639–647. <https://doi.org/10.1016/j.aos.2006.09.009>
- Chouaibi, S., Chouaibi, Y., & Zouari, G. (2022). Board characteristics and integrated reporting quality: Evidence from ESG European companies. *EuroMed Journal of Business*, 17(4), 425–447. <https://doi.org/10.1108/EMJB-11-2020-0121>
- Clarkson, P. M., Fang, X., Li, Y., & Richardson, G. (2013). The relevance of environmental disclosures: Are such disclosures incrementally informative? *Journal of Accounting and Public Policy*, 32(5), 410–431. <https://doi.org/10.1016/j.jaccpubpol.2013.06.008>
- Climate Disclosure Standards Board. (2018). *Sustainability reporting landscape in India*. https://www.cdsb.net/sites/default/files/sustainability_india_report_web.pdf
- Conway, E. (2019). Quantitative impacts of mandatory integrated reporting. *Journal of Financial Reporting and Accounting*, 17(4), 604–634. <https://doi.org/10.1108/JFRA-08-2018-0066>
- Cosma, S., Soana, M. G., & Venturelli, A. (2018). Does the market reward integrated report quality? *African Journal of Business Management* 12(4), 78–91. <https://doi.org/10.5897/AJBM2017.8469>
- Cucari, N., Esposito de Falco, S., & Orlando, B. (2018). Diversity of board of directors and environmental social governance: Evidence from Italian listed companies. *Corporate Social Responsibility and Environmental Management*, 25(3), 250–266. <https://doi.org/10.1002/csr.1452>
- Dameri, R. P., & Ferrando, P. M. (2022). Value creation disclosure: The international integrated reporting framework revisited in the light of stakeholder theory. *Meditari Accountancy Research*, 30(3), 739–761. <https://doi.org/10.1108/MEDAR-11-2020-1103>
- De Villiers, C., Hsiao, P. C. K., & Maroun, W. (2017). Developing a conceptual model of influences around integrated reporting, new insights and directions for future research. *Meditari Accountancy Research*, 25(4), 450–460. <https://doi.org/10.1108/MEDAR-07-2017-0183>
- Del Baldo, M. (2017). The implementation of integrating reporting <IR> in SMEs: Insights from a pioneering experience in Italy. *Meditari Accountancy Research*, 25(4), 505–532. <https://doi.org/10.1108/MEDAR-11-2016-0094>
- Depoers, F., Jeanjean, T., & Jérôme, T. (2016). Voluntary disclosure of greenhouse gas emissions: Contrasting the carbon disclosure project and corporate reports. *Journal of Business Ethics*, 134(3), 445–461. <https://doi.org/10.1007/s10551-014-2432-0>
- Diab, A., & Metwally, A. B. M. (2020). Institutional complexity and CSR practices: Evidence from a developing country. *Journal of Accounting in Emerging Economies*, 10(4), 655–680. <https://doi.org/10.1108/JAEE-11-2019-0214>
- Dinda, S., & Ghosh, D. (2015). A search for backward blocks in Burdwan District, West Bengal: An application of composite development index.
- Donnelly, R., & Mulcahy, M. (2008). Board structure, ownership, and voluntary disclosure in Ireland. *Corporate Governance: An International Review*, 16(5), 416–429. <https://doi.org/10.1111/j.1467-8683.2008.00692.x>

- Dumay, J., Bernardi, C., Guthrie, J., & La Torre, M. (2017). Barriers to implementing the international integrated reporting framework: A contemporary academic perspective. *Meditari Accountancy Research* 25(4), 461–480. <https://doi.org/10.1108/MEDAR-05-2017-0150>
- Dumay, J., & Dai, T. (2017). Integrated thinking as a cultural control? *Meditari Accountancy Research*, 25(4), 574–604. <https://doi.org/10.1108/MEDAR-07-2016-0067>
- Eccles, R. G., & Krzus, M. P. (2010). *One report: Integrated reporting for a sustainable strategy*. John Wiley & Sons.
- Elzahar, H., & Hussainey, K. (2012). Determinants of narrative risk disclosures in UK interim reports. *The Journal of Risk Finance*, 13(2), 133–147. <https://doi.org/10.1108/15265941211203189>
- Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *The Journal of Law and Economics* 26(2), 301–325. <https://www.journals.uchicago.edu/doi/abs/10.1086/467037> <https://doi.org/10.1086/467037>
- Feng, T., Cummings, L., & Tweedie, D. (2017). Exploring integrated thinking in integrated reporting—an exploratory study in Australia. *Journal of Intellectual Capital* 18(2), 330–353. <https://doi.org/10.1108/JIC-06-2016-0068>
- Flower, J. (2015). The international integrated reporting council: A story of failure. *Critical Perspectives on Accounting*, 27, 1–17. <https://doi.org/10.1016/j.cpa.2014.07.002>
- Frias-Aceituno, J. V., Rodríguez-Ariza, L., & Garcia-Sanchez, I. M. (2013). The role of the board in the dissemination of integrated corporate social reporting. *Corporate Social Responsibility and Environmental Management*, 20(4), 219–233. <https://doi.org/10.1002/csr.1294>
- Frias-Aceituno, J. V., Rodríguez-Ariza, L., & da Conceição Marques, M. (2013). Divulgación de información sostenible: ¿ se adapta a las expectativas de la sociedad? [Sustainability disclosure: Does it adapt to society's expectations?] *Revista de Contabilidad* 16(2), 147–158. <https://revistas.um.es/rcsar/article/view/367961> <https://doi.org/10.1016/j.rcsar.2013.07.004>
- García-Sánchez, I. M. (2020). The moderating role of board monitoring power in the relationship between environmental conditions and corporate social responsibility. *Business Ethics: A European Review*, 29(1), 114–129. <https://doi.org/10.1111/beer.12242>
- García Sánchez, I., Rodríguez Domínguez, L., & Gallego Álvarez, I. (2011). Corporate governance and strategic information on the internet: A study of Spanish listed companies. *Accounting, Auditing & Accountability Journal* 24(4), 471–501. <https://doi.org/10.1108/09513571111133063>
- Gerged, A. M. (2021). Factors affecting corporate environmental disclosure in emerging markets: The role of corporate governance structures. *Business Strategy and the Environment*, 30(1), 609–629. <https://doi.org/10.1002/bse.2642>
- Giannarakis, G., Andronikidis, A., & Sariannidis, N. (2020). Determinants of environmental disclosure: Investigating new and conventional corporate governance characteristics. *Annals of Operations Research*, 294(1–2), 87–105. <https://doi.org/10.1007/s10479-019-03323-x>
- Gibassier, D., Rodrigue, M., & Arjaliès, D. L. (2018). Integrated reporting is like God: No one has met him, but everybody talks about him: The power of myths in the adoption of management innovations. *Accounting, Auditing & Accountability Journal*, 31(5), 1349–1380. <https://doi.org/10.1108/AAAJ-07-2016-2631>
- Goyal, V. K., & Park, C. W. (2002). Board leadership structure and CEO turnover. *Journal of Corporate Finance*, 8(1), 49–66. [https://doi.org/10.1016/S0929-1199\(01\)00028-1](https://doi.org/10.1016/S0929-1199(01)00028-1)
- Grant Thornton Bharat. (2020). *Integrated reporting in India*. <https://www.grantthornton.in/globalassets/1.-member-firms/india/assets/pdfs/integrated-reporting-in-india-december-2020.pdf>
- Haji, A., & Anifowose, M. (2016). Audit committee and integrated reporting practice: Does internal assurance matter? *Managerial Auditing Journal*, 31(8–9), 915–948. <https://doi.org/10.1108/MAJ-12-2015-1293>
- Halme, M., & Huse, M. (1997). The influence of corporate governance, industry and country factors on environmental reporting. *Scandinavian Journal of Management*, 13(2), 137–157. [https://doi.org/10.1016/S0956-5221\(97\)00002-X](https://doi.org/10.1016/S0956-5221(97)00002-X)
- Haniffa, R. M., & Cooke, T. E. (2005). The impact of culture and governance on corporate social reporting. *Journal of Accounting and Public Policy*, 24(5), 391–430. <https://doi.org/10.1016/j.jaccpubpol.2005.06.001>
- Harjoto, M. A., Laksmana, I., & Lee, R. (2015). The impact of demographic characteristics of CEOs and directors on audit fees and audit delay. *Managerial Auditing Journal*, 30(8–9), 963–997. <https://doi.org/10.1108/MAJ-01-2015-1147>
- Hassan, O. A., & Romilly, P. (2018). Relations between corporate economic performance, environmental disclosure and greenhouse gas emissions: New insights. *Business Strategy and the Environment*, 27(7), 893–909. <https://doi.org/10.1002/bse.2040>
- Hausman, J. A. (1978). Specification tests in econometrics. *Econometrica* 46(6), 1251–1271. <https://doi.org/10.2307/1913827>
- Herbert, S., & Graham, M. (2022). Applying legitimacy theory to understand sustainability reporting behaviour within South African integrated reports. *South African Journal of Accounting Research*, 36(2), 147–169. <https://doi.org/10.1080/10291954.2021.1918481>
- Hill, C. W., & Jones, T. M. (1992). Stakeholder-agency theory. *Journal of Management Studies*, 29(2), 131–154. <https://doi.org/10.1111/j.1467-6486.1992.tb00657.x>
- Higgins, C., Stubbs, W., & Love, T. (2014). Walking the talk (s): Organisational narratives of integrated reporting. *Accounting, Auditing & Accountability Journal* 27(7), 1090–1119. <https://doi.org/10.1108/AAAJ-04-2013-1303>
- Hopwood, A. (2009). Accounting and the environment. *Accounting, Organisations and Society*, 34(3–4), 433–439. <https://doi.org/10.1016/j.aos.2009.03.002>

- Hossain, M., & Reaz, M. (2007). The determinants and characteristics of voluntary disclosure by Indian banking companies. *Corporate Social Responsibility and Environmental Management*, 14(5), 274–288. <https://doi.org/10.1002/csr.154>
- Hsiao, C. (2014). *Analysis of panel data* (Vol. 54). Cambridge University Press.
- International Integrated Reporting Council (IIRC). (2011). *Towards integrated reporting. Communicating value in the 21st century*. www.theiirc.org/the-integratedreporting-discussion-paper/ (accessed June 10, 2023)
- Islam, M. S. (2021). Investigating the relationship between integrated reporting and firm performance in a voluntary disclosure regime: Insights from Bangladesh. *Asian Journal of Accounting Research*, 6(2), 228–245. <https://doi.org/10.1108/AJAR-06-2020-0039>
- Jackling, B., & Johl, S. (2009). Board structure and firm performance: Evidence from India's top companies. *Corporate Governance: An International Review*, 17(4), 492–509. <https://doi.org/10.1111/j.1467-8683.2009.00760.x>
- Janang, J. S., Joseph, C., & Said, R. (2020). Corporate governance and corporate social responsibility society disclosure: The application of legitimacy theory. *International Journal of Business and Society*, 21(2), 660–678. <https://doi.org/10.33736/ijbs.3281.2020>
- Javaid Lone, E., Ali, A., & Khan, I. (2016). Corporate governance and corporate social responsibility disclosure: Evidence from Pakistan. *Corporate Governance: The International Journal of Business in Society*, 16(5), 785–797. <https://doi.org/10.1108/CG-05-2016-0100>
- Jitmaneroj, B. (2016). Reform priorities for corporate sustainability: Environmental, social, governance, or economic performance? *Management Decision* 54(6), 1497–1521. <https://doi.org/10.1108/MD-11-2015-0505>
- Jizi, M. I., Salama, A., Dixon, R., & Stratling, R. (2014). Corporate governance and corporate social responsibility disclosure: Evidence from the US banking sector. *Journal of Business Ethics*, 125(4), 601–615. <https://doi.org/10.1007/s10551-013-1929-2>
- Kamalath, A. (2018). Gender diversity as the antidote to 'groupthink' on corporate boards. *Deakin Law Review*, 22(1), 85–106. <https://doi.org/10.21153/dlr2017vol22no1art723>
- Kang, H., Cheng, M., & Gray, S. J. (2007). Corporate governance and board composition: Diversity and independence of Australian boards. *Corporate Governance: An International Review* 15(2), 194–207. <https://doi.org/10.1111/j.1467-8683.2007.00554.x>
- Kansal, M., Joshi, M., & Batra, G. S. (2014). Determinants of corporate social responsibility disclosures: Evidence from India. *Advances in Accounting*, 30(1), 217–229. <https://doi.org/10.1016/j.adiac.2014.03.009>
- Khatib, S. F. (2023). The role of share repurchases for firms' social and environmental sustainability. *Social and Environmental Accountability Journal*, 183, 1–3. <https://doi.org/10.1080/0969160X.2023.2281904>
- Khatib, S. F., & Nour, A. (2021). The impact of corporate governance on firm performance during the COVID-19 pandemic: Evidence from Malaysia. *Journal of Asian Finance, Economics and Business*, 8(2), 0943–0952. <https://ssrn.com/abstract=3762393>
- Kılıç, M., & Kuzey, C. (2018). Determinants of forward-looking disclosures in integrated reporting. *Managerial Auditing Journal*, 33(1), 115–144. <https://doi.org/10.1108/MAJ-12-2016-1498>
- Kılıç, M., Uyar, A., Kuzey, C., & Karaman, A. S. (2021). Does institutional theory explain integrated reporting adoption of Fortune 500 companies? *Journal of Applied Accounting Research*, 22(1), 114–137. <https://doi.org/10.1108/JAAR-04-2020-0068>
- Kock, C. J., Santaló, J., & Diestre, L. (2012). Corporate governance and the environment: What type of governance creates greener companies? *Journal of Management Studies*, 49(3), 492–514. <https://doi.org/10.1111/j.1467-6486.2010.00993.x>
- Lodhia, S. (2015). Exploring the transition to integrated reporting through a practice lens: An Australian customer owned bank perspective. *Journal of Business Ethics*, 129(3), 585–598. <https://doi.org/10.1007/s10551-014-2194-8>
- Manita, R., Bruna, M. G., Dang, R., & Houanti, L. H. (2018). Board gender diversity and ESG disclosure: Evidence from the USA. *Journal of Applied Accounting Research*, 19(2), 206–224. <https://doi.org/10.1108/JAAR-01-2017-0024>
- Mallin, C., Farag, H., & Ow-Yong, K. (2014). Corporate social responsibility and financial performance in Islamic banks. *Journal of Economic Behavior & Organization* 103, S21–S38. <https://doi.org/10.1016/j.jebo.2014.03.001>
- Martin, E., Benedikt, S., & Andreas, W. (2019). Does integrated reporting information influence internal decision making? An experimental study of investment behavior. *Business Strategy and the Environment*, 28(1), 599–610. <https://doi.org/10.1002/bse.2267>
- Martinez, C. (2016). Effects of integrated reporting on the firm's value: Evidence from voluntary adopters of the IIRC's framework. Available at SSRN 2876145. <https://dx.doi.org/10.2139/ssrn.2876145>
- Michelon, G., & Parbonetti, A. (2012). The effect of corporate governance on sustainability disclosure. *Journal of Management & Governance*, 16(3), 477–509. <https://doi.org/10.1007/s10997-010-9160-3>
- Mishra, N. (2020). Integrated reporting: A structured analysis of application and gaps in India. *Texila International Journal of Management*, 24–30. <https://doi.org/10.21522/TIJMG.2015.SE.19.02.Art004>
- Mishra, S., & Nathan, H. S. K. (2018). A manush or humans characterisation of the human development index. *Journal of Human Development and Capabilities* 19(3), 398–415. <https://doi.org/10.1080/19452829.2017.1422703>
- Mohammad, N., & Rahman, M. M. (2021). The impact of integrated reporting disclosure on financial performance: Evidence from listed firms in Bangladesh. *Journal of Banking & Financial Services*, 173–196.
- Moloi, T., & Iredele, O. O. (2020). Firm value and integrated reporting quality of South African listed firms. *Academy of Strategic Management Journal*, 19(1), 1–12.

- Naciti, V. (2019). Corporate governance and board of directors: The effect of a board composition on firm sustainability performance. *Journal of Cleaner Production*, 237, 117727. <https://doi.org/10.1016/j.jclepro.2019.117727>
- Nerantzidis, M., Tzeremes, P., Koutoupis, A., & Pourgiaris, A. (2022). Exploring the black box: Board gender diversity and corporate social performance. *Finance Research Letters*, 48, 102987. <https://doi.org/10.1016/j.frl.2022.102987>
- Nishitani, K., Unerman, J., & Kokubu, K. (2021). Motivations for voluntary corporate adoption of integrated reporting: A novel context for comparing voluntary disclosure and legitimacy theory. *Journal of Cleaner Production*, 322, 129027. <https://doi.org/10.1016/j.jclepro.2021.129027>
- Omran, M. S., Zaid, M. A., & Dwekat, A. (2021). The relationship between integrated reporting and corporate environmental performance: A green trial. *Corporate Social Responsibility and Environmental Management*, 28(1), 427–445. <https://doi.org/10.1002/csr.2059>
- Orazalin, N. (2020). Board gender diversity, corporate governance, and earnings management: Evidence from an emerging market. *Gender in Management: An International Journal*, 35(1), 37–60. <https://doi.org/10.1108/GM-03-2018-0027>
- Parrot, K. W., & Tierney, B. X. (2012). Integrated reporting, stakeholder engagement, and balanced investing at American electric power. *Journal of Applied Corporate Finance*, 24(2), 27–37. <https://doi.org/10.1111/j.1745-6622.2012.00375.x>
- Pavlopoulos, A., Magnis, C., & Iatridis, G. E. (2017). Integrated reporting: Is it the last piece of the accounting disclosure puzzle? *Journal of Multinational Financial Management*, 41, 23–46. <https://doi.org/10.1016/j.mulfin.2017.05.001>
- Prado-Lorenzo, J. M., & Garcia-Sanchez, I. M. (2010). The role of the board of directors in disseminating relevant information on greenhouse gases. *Journal of Business Ethics*, 97(3), 391–424. <https://doi.org/10.1007/s10551-010-0515-0>
- PWC. (2018). *Integrated reporting: What is your value creation story?* <https://www.pwc.com/my/en/assets/publications/2018/ir-report-2018-final-web.pdf> (accessed July 21, 2023)
- Rabaya, A. J., & Saleh, N. M. (2022). The moderating effect of IR framework adoption on the relationship between environmental, social, and governance (ESG) disclosure and a firm's competitive advantage. *Environment, Development and Sustainability*, 24(2), 2037–2055. <https://doi.org/10.1007/s10668-021-01519-5>
- Raimo, N., de Nuccio, E., & Vitolla, F. (2021). Corporate governance and environmental disclosure through integrated reporting. *Measuring Business Excellence*, 26(4), 451–470. <https://doi.org/10.1108/MBE-05-2021-0066>
- Rao, K. K., Tilt, C. A., & Lester, L. H. (2012). Corporate governance and environmental reporting: An Australian study. *Corporate Governance: The International Journal of Business in Society*, 12(2), 143–163. <https://doi.org/10.1108/14720701211214052>
- Robertson, F. A., & Samy, M. (2020). Rationales for integrated reporting adoption and factors impacting on the extent of adoption: A UK perspective. *Sustainability Accounting, Management and Policy Journal*, 11(2), 351–382. <https://doi.org/10.1108/SAMPJ-02-2019-0042>
- Robertson, F., & Samy, M. (2015). Factors affecting the diffusion of integrated reporting – a UK FTSE 100 perspective. *Sustainability Accounting, Management and Policy Journal*, 6(2), 190–223. <https://doi.org/10.1108/SAMPJ-07-2014-0044>
- Sanan, N. K. (2018). Influence of board characteristics on CSR: a study of Indian firms. *International Journal of Corporate Governance* 9(3), 300–315. <https://doi.org/10.1504/IJCG.2018.094516>
- Senani, K. G. P., Ajward, R., & Kumari, J. S. (2022). Determinants and consequences of integrated reporting disclosures of non-financial listed firms in an emerging economy. *Journal of Financial Reporting and Accounting*. Ahead-of-print. <https://doi.org/10.1108/JFRA-03-2022-0083>
- Sharma, P., Panday, P., & Dangwal, R. C. (2020). Determinants of environmental, social and corporate governance (ESG) disclosure: A study of Indian companies. *International Journal of Disclosure and Governance*, 17(4), 208–217. <https://doi.org/10.1057/s41310-020-00085-y>
- Shukla, A., & Vyas, N. (2013). Environmental accounting & reporting in India (A comparative study of Bharat Petroleum Company Limited and Oil & Natural Gas Company Limited). *Pacific Business Review International*, 5(7), 52–59. http://www.pbr.co.in/2013/2013_month/January/8.pdf
- Simnett, R., & Huggins, A. L. (2015). Integrated reporting and assurance: Where can research add value? *Sustainability Accounting, Management and Policy Journal*, 6(1), 29–53. <https://doi.org/10.1108/SAMPJ-09-2014-0053>
- Stanwick, S. D., & Stanwick, P. A. (2000). The relationship between environmental disclosures and financial performance: An empirical study of US firms. *Eco-Management and Auditing*, 7(4), 155–164. [https://doi.org/10.1002/1099-0925\(200012\)7:43.3.CO;2-Y](https://doi.org/10.1002/1099-0925(200012)7:43.3.CO;2-Y)
- Steyn, M. (2014). Organisational benefits and implementation challenges of mandatory integrated reporting: Perspectives of senior executives at South African listed companies. *Sustainability Accounting, Management and Policy Journal*, 5(4), 476–503. <https://doi.org/10.1108/SAMPJ-11-2013-0052>
- Stubbs, W., & Higgins, C. (2014). Integrated reporting and internal mechanisms of change. *Accounting, Auditing & Accountability Journal*, 27(7), 1068–1089. <https://doi.org/10.1108/AAAJ-03-2013-1279>
- Stuebs, M., & Sun, L. (2015). Corporate governance and social responsibility. *International Journal of Law and Management*, 57(1), 38–52. <https://doi.org/10.1108/IJLMA-04-2014-0034>
- Tauringana, V., & Chithambo, L. (2015). The effect of DEFRA guidance on greenhouse gas disclosure. *The British Accounting Review*, 47(4), 425–444. <https://doi.org/10.1016/j.bar.2014.07.002>

- Thomas, A., & Scandurra, G. (2023). The transition toward sustainability of airport operators. Evidence from Italy. *Journal of Air Transport Management*, 112, 102470. <https://doi.org/10.1016/j.jairtraman.2023.102470>
- Thomas, E. A. (2019). How useful is the Global Reporting Initiative (GRI) reporting framework to identify the non-financial value of Corporate Social Performance (CSP)? *Responsible business in uncertain times and for a sustainable future* (pp. 37–87). Springer International Publishing.
- Ullah, F., Jiang, P., Ntim, C. G., Shahab, Y., & Jiang, X. (2022). Female directors' foreign experience and environmental and sustainable performance. *Asia-Pacific Journal of Financial Studies*, 51(2), 169–193. <https://doi.org/10.1111/ajfs.12369>
- Velte, P., & Stawinoga, M. (2017). Integrated reporting: The current state of empirical research, limitations and future research implications. *Journal of Management Control*, 28(3), 275–320. <https://doi.org/10.1007/s00187-016-0235-4>
- Vig, S. (2024). Environmental disclosures by Indian companies: Role of board characteristics and board effectiveness. *International Journal of Disclosure and Governance*, 21(1), 16–31. <https://doi.org/10.1057/s41310-023-00174-8>
- Vig, S., & Datta, M. (2018). Corporate governance and value creation: A study of selected Indian companies. *International Journal of Indian Culture and Business Management*, 17(3), 259–282. <https://doi.org/10.1504/IJICBM.2018.094582>
- Vig, S., & Datta, M. (2021). The impact of corporate governance on sustainable value creation: A case of selected Indian firms. *Journal of Sustainable Finance & Investment*, 14(3), 689–707. <https://doi.org/10.1080/20430795.2021.1923337>
- Vitolla, F., Raimo, N., Rubino, M., & Garzoni, A. (2019). The impact of national culture on integrated reporting quality. A stakeholder theory approach. *Business Strategy and the Environment*, 28(8), 1558–1571. <https://doi.org/10.1002/bse.2332>
- Vitolla, F., Raimo, N., & Rubino, M. (2020). Board characteristics and integrated reporting quality: An agency theory perspective. *Corporate Social Responsibility and Environmental Management*, 27(2), 1152–1163. <https://doi.org/10.1002/csr.1879>
- Vurro, C., & Perrini, F. (2011). Making the most of corporate social responsibility reporting: Disclosure structure and its impact on performance. *Corporate Governance: The International Journal of Business in Society* 11(4), 459–474. <https://doi.org/10.1108/14720701111159280>
- Yu, M., & Zhao, R. (2015). Sustainability and firm valuation: An international investigation. *International Journal of Accounting and Information Management*, 23(3), 289–307. <https://doi.org/10.1108/IJAIM-07-2014-0050>
- Ward, A. M., & Forker, J. (2017). Financial management effectiveness and board gender diversity in member-governed, community financial institutions. *Journal of Business Ethics* 141(2), 351–366. <https://doi.org/10.1007/s10551-015-2699-9>
- Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data*. MIT Press.