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Responsible governance and environmental disclosure quality: The moderating role of media exposure and media legitimacy

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Abstract

Research Question: What's the extent voluntary and timely disclosure of environmental information could be explained by the corporate governance? And what's the extent can the media exposure affect the relationship between corporate governance and the quality of disclosure of environmental information on the one hand, and what's the extent can media legitimacy affect this relationship on the other hand?

Motivation: The majority of the literature has examined the effect of corporate governance on the voluntary environmental disclosure while neglecting their effect on the timely disclosure of environmental information. Our study seeks to fill this gap by testing the moderating effect of media exposure and media legitimacy on the relationship between responsible governance measured by an index and the quality of environmental disclosure as measured by voluntary disclosure and timely disclosure. This paper is the first comprehensive attempt to analyses the interaction between media exposure and media legitimacy and responsible governance with environmental disclosure quality

Idea: This study examines how media exposure and media legitimacy moderate the relationship between the responsible governance and environmental disclosure quality as measured by voluntary and timely disclosure.

Data: The data were collected from the reference documents available on the Thomson Reuters Eikon database, including annual reports and sustainability reports. Thus, we collected the data from the Datastream database and from Factiva Database.

Tools: This study uses a sample of 81 French non-financial companies listed on the SBF 120 index for the period 2014-2019. Feasible Generalized Least Square (FGLS) regression method is used to estimate the econometric models.

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Findings: The results obtained show that, for 486 French firm-year observations during the period 2014–2019, show that the media exposure moderates the relationship between the responsible governance and the quality of environmental disclosure as measured by voluntary and timely disclosure. Our results show also that the media legitimacy did not moderate the relationship between the responsible governance and the quality of environmental information.
Contribution: The originality of our work consists of the fact that it is one of the first works that deals with the moderator effect of media exposure and media legitimacy on the relationship between responsible governance measured by an index and the quality of disclosure of environmental information measured by voluntary disclosure and timely disclosure. To our knowledge, no empirical study has been done this relationship on the timely disclosure of environmental information in the French context or in other contexts.

Keywords: Media exposure, Media legitimacy, responsible governance, voluntary disclosure, timely disclosure, environmental information.

JEL codes: M41, M42, M48

1. Introduction

Today, no one doubts the decisive place of the concept of environmental information which has become ubiquitous at the heart of economic, social and political debates which has aroused the interest of several researchers and practitioners as an important area for both the academic literature and the business world (Gerged *et al.*, 2021; Solikhah & Maulina, 2021; Gerged, 2020; Ala, 2019; Li *et al.*, 2018). Thus, aware of the importance of the quality of environmental information disclosure, for fear of losing the usefulness of this information for decision-making and to fully fulfill its informational usefulness, companies are increasingly committing to a better quality of environmental disclosure in an effort to build a favorable environmental reputation to strengthen the company's overall reputation (Morales- Raya *et al.*, 2018; Cao *et al.*, 2017). In this context, voluntary and timely disclosure appears to be a factor influencing the disclosure quality.

Indeed, the beginning of the 2000s was marked everywhere in the world by a need to restore the confidence of investors in matters of financial and extra-financial transparency following the financial scandals that arose around the world, such as those of Enron, of WorldCom in the States-Unis, Vivendi in France etc. Faced with this situation, and to create a climate of trust, in order to guarantee credible results in terms of environmental protection, and in order to improve the image of reliability of the quality of the information disclosed, responsible governance appears to be a key element in this field because it can guide the scope and method of disclosure made by companies (Solikhah & Maulina, 2021; Gerged, 2020; Farooq & De Villiers, 2019; Odoemelam & Okafor, 2018....). The responsible governance is meant to tackle not only traditional corporate governance issues - aimed at correcting inappropriate or irresponsible behavior - but should also consider how to approach broader issues of sustainability, aimed at driving and stimulating responsible behavior and positive.

A good number of researchers have provided empirical evidence on the relationship between environmental reporting and corporate governance (Van Tulder &Van Mil, 2020).

To a great extent, the level of environmental reporting to investors and other segments of the society depends on corporate governance structure (Gerged *et al.*, 2021; Solikhah & Maulina, 2021; Gerged, 2020; Xie *et al.*, 2019; Odoemelam & Okafor, 2018; Ezhilarasi & Kabra, 2017; Meniaoui *et al.*, 2016).

Thus, one of the reasons why companies will be encouraged to provide better environmental disclosures is the effect of reputation (Solikah & Maulina, 2021; Morales-Raya *et al.*, 2018; Cao *et al.*, 2017) which is a valuable asset to public opinion and media critics. In this respect, the media is a central player in the field of reputation that can replace regulation to effectively constrain companies and their controlling shareholders (Lauterbach & Pajuste, 2017). As such, in order to boost investor confidence, and while giving the media a training role, companies have faced increasing media pressure to disclose more environmental information to protect their reputation and legitimacy (Morales-Raya *et al.*, 2018) as the media present sentinels of transparency and political accountability. In this vein, the huge wave of economic upheaval that has swept through and continues to sweep the quality of disclosure of environmental information, could not avoid noticing the importance of the role that played and continue to play the media. Thus, the role of media in managing the environmental behavior of companies, including corporate governance, to ensure a good reputation has been the subject of increasing attention; as a result, the role of the media cannot be neglected.

The objectives of this paper are twofold. First, it aims to examine the relationship between environmental disclosure quality and corporate governance. Second, unlike previous studies, this research also investigates the effect of media exposure and media legitimacy on this relationship, as well as the role of media exposure in improving the relationship between corporate governance and environmental disclosure quality on the one hand, and the role of media legitimacy in improving the relationship between corporate governance and environmental disclosure quality on the other hand.

In the context of the French companies that make up the SBF 120 index covering the six-year period from 2014 to 2019, two questions arise: To what extent the voluntary and timely disclosure of environmental information could be explained by the corporate governance? And to what extent can the media exposure affect the relationship between corporate governance and the quality of disclosure of environmental information on the one hand, and what extent can media legitimacy affect this relationship on the other hand?

To answer these questions, this study seeks to rely on a multiple theory framework, agency theory, signaling theory, stakeholders' theory, legitimacy theory and "media agenda setting theory". This study is based on multi-theoretical framework because environmental disclosure is a complex and multidimensional phenomenon that cannot be explained by a single theory (Gray & Handley, 2015).

Our study contributes to literature in the following ways. Firstly, to our knowledge, this is the first such study undertaken in France that sheds new light on the quality of environmental disclosure measured by voluntary and timely disclosure and their relationships with corporate governance measured by an index, media exposure and media legitimacy. Besides voluntary disclosure of environmental information, our research extends the literature by measuring the quality of environmental disclosure by timely disclosure. To our knowledge, our study is the first to have focused on the timely disclosure of environmental information. The study of the timely disclosure of environmental information allows professional accountants and stock

market authorities and the users of environmental information to know the factors associated with late publication of environmental information, and this is in order to improve the efficiency of those producing the audit and the disclosure service. An important contribution of our study is the important role played by media exposure and media legitimacy on the relationship between responsible governance and the quality of environmental information disclosure. Previous studies was limited to the study of the direct effect of media exposure and media legitimacy on the quality of disclosure of environmental information, research testing the indirect effect of the latter on the relationship between responsible governance as measured by an index and the quality of environmental information disclosure, especially timely disclosure, are very rare or even non-existent. Second, the study allows the French legislator to be more aware of all the factors that disrupt the timely disclosure of extra-financial information, specifically environmental information to better guide reforms and improve the functioning of the financial market, as the audited financial statements and sustainability report together with audit reports are the only reliable sources available to investors and other external users of accounting, the financial and non-financial information. Third, the findings of this study shows that the quality of environmental information disclosure represents for some companies an important means available to managers to influence the external perceptions of their company and a strategic tool for managing its legitimacy. Our research is conducted in the French context over an extended period of time. The choice of the French context, specifically companies constituting the SBF 120 index, is motivated by the fact that France has given more importance to the disclosure of non-financial information, including environmental information. The quality of environmental information disclosure meets the expectation of stakeholders, including investors, who are likely to influence the company by causing it to produce and disclose environmental information useful for decision making. Additionally, listed companies often exceed the legal obligations of publication by adopting an essentially voluntary environmental disclosure (VED) strategy.

The remainder of the paper is organized as follows. The next section presents a survey of theoretical and empirical literature in order to develop our hypothesis. The Sect. 3 illustrates the research methodology in term of sample, data and models. The Sect. 4 is dedicated to empirical findings. The final section offers a discussion of our findings, the limits of our research and directions for future research.

2. Theoretical framework and hypotheses development

Increasingly stringent regulations, stronger external pressures, mean that a company must provide more information about its practices, environmental policies and ecological performance. Therefore, the manager must ensure the dissemination of environmentally reliable and comprehensive information in a timely way. Consequently, better involvement of governance systems within companies improves the scope of information, its quality of dissemination and this from the various mechanisms implemented. This section aims to explore prior research related to corporate governance, media exposure, media legitimacy and environmental disclosure quality, in order to develop our hypotheses.

2.1 Conceptual and theoretical framework

Gray & Handley (2015) argue that CSR is a multidimensional complex activity which cannot be explained by a single theoretical perspective because it depends on complementary forces.

In this study, several theories are used to explain the quality of disclosure of environmental information: agency theory, signal theory, stakeholder theory, legitimacy theory and agenda setting theory. From an agency theory perspective, non financial disclosure is a response of companies to information asymmetry and to the information needs of capital markets (Mio *et al.*, 2020). This theory formalized by Fama & Jensen (1983), Jensen & Meckling (1976) sees that environmental disclosure presents as a way for companies to reduce information asymmetries, to share more information with shareholders and investors, and, ultimately, to lower the cost of capital. So, companies use the voluntary disclosure of environmental information in environmental reports in order to maintain a better assessment of the full value of the company and thus generate an additional value (costs <benefits). However, timely disclosure allows the problem of information asymmetry to be mitigated and limits the risk of expropriation by company managers. Increasingly,

voluntary disclosure plays a vital role in the management of media visibility. Therefore, media conveying a part of the image of companies. The latter respond to public concerns, which exert pressure, through increased disclosure of environmental information (Cormier & Magnan, 2015).

From the perspective of signal theory, insiders obtain both positive and negative private information, and they must decide whether to communicate this information to outsiders. Signaling theory focuses primarily on the deliberate communication of positive information in an effort to convey positive organizational attributes (Certo *et al.,* 2001; Certo, 2003; Connelly *et al.*, 2011). Therefore, the disclosure of environmental information is a real signaling tool available to company executives. In this vein, media coverage constitutes an important signaling environment for the public (Zhang & Liao, 2015). Then it is obvious that more media coverage that a business receives, the more the observability of the signal is high. The stakeholder theory, founded by Freeman (1984), is the dominant reference in the literature on CSR. It indicates that the company is not an entity that only operates for its own sake but also must benefit its stakeholders and explains that organizations focus on broad concepts of overall accountability to various stakeholders (Baalouch *et al.*,2019).

The relationship between the company and stakeholders has yielded pressure on the company to accommodate the interests and needs of its stakeholders. Managers are obliged to explain themselves to stakeholders through disclosure to have sustainable access to critical resources that may be controlled in the future (Wakaisuka-Isingoma *et al.,* 2016). Environmental disclosure is a form of corporate responsibility to the society as the accountability of fulfilling the information needs of the company for investors, shareholders, customers, and other parties (Solikhah & Maulina, 2021). Among these other parties, we cite the media which present a fundamental stakeholder in the environmental aspect which rely on the informational lever, that is to say, on information they provide about companies to stakeholders. On the other hand, legitimacy theory has served as a theoretical framework for several studies in environmental responsibility and is probably the most widely used theory to explain the role played by environmental disclosure practices in the legitimization of firms' environmental management (Radhouane *et al.,* 2020). In an effort to appear legitimate, the environmental disclosure can be a way for companies to enhance their legitimacy and a response to different institutional pressures. Among these pressures we cite media pressure. However, the media have a central player in the legitimation field and in the environmental field because they contribute to shaping public opinion as it has an important stakeholder for the company (Morales-Raya *et al.*,2018; Lauterbach & Pajuste, 2017…).

From the perspective of the media Agenda Setting theory formalized by McComb and Shaw (1972), the essential affirmation of this theory is that the key issues are transferred from the media agenda to the public agenda, and the establishing that the agenda should be considered a public awareness by a media (Pollach, 2014) which makes journalists guardians of information to attract public attention. This means that society uses the most relevant news media to organize its own agenda and to decide what topics or which people are the most relevant at a given moment. In this research, the chosen approach is to use a multitheoretical and complementary framework as environmental disclosure is multidimensional while combining contractual and institutional theories.

2.2 Literature review and hypotheses development

Transparency in company disclosure has become an important component of corporate governance principles issued by organizations throughout the world (Solikhah & Maulina, 2021). In this context, the disclosure of environmental information makes it possible to respond to stakeholder requests in terms of transparency and accountability (Lagasio & Cucari, 2019). In order to achieve this, corporate governance must intervene to guide the scope and method of disclosure made by companies for reasons of prestige or reputation. However, to delimit the powers and influence the decisions of the managers, in particular as regards the voluntary disclosure of environmental information, governance mechanisms are put in place at the company level, namely the ownership structure and the board of directors. These different attributes of governance - board of directors, ownership structure - are taken into account together to study their effects on the quality of environmental disclosure, namely voluntary disclosure and timely disclosure.

2.2.1 Corporate governance and environmental disclosure quality

As a mechanism for resolving agency problems, corporate governance presents a mechanism to balance the economic and social interests of companies, thus balancing shareholder's interest with the society at large (Giannarakis *et al.*, 2019; Cin, & Lee, 2016). Giannarakis *et al.,* (2019) argued that disclosure of information or transparency is an integral part of CG because higher disclosure can reduce information asymmetry, which not only clarifies the conflicts of interests between shareholders and management but also makes management more accountable. In this context, disclosure and the quality of CG system are appreciated as closely related concepts (Khaireddine *et al.,* 2020). Solikhah & Maulina (2021) indicate that voluntary environmental disclosures will be optimally disclosed if the company applies the CG principles. Different CG arrangements, such as board composition and ownership structures, can play a substantial role in safeguarding the interests of stakeholder during the process of decision making (Ashfaq & Rui, 2019).

The board of directors is the core of an internal governance mechanism that aims at minimizing agency problems and is responsible for hiring, firing and compensating the top level decision managers and approving crucial strategic initiatives (Fama & Jensen, 1983). It plays a crucial role in influencing company disclosure (Khaireddine *et al.*, 2020), it is responsible to handle and provide information to stakeholders not only for purely financial but also for non- financial information including environmental information. Certainly, the first quality of a board of directors is in its composition.

However, the quality of its composition depends on the degree of independence of these directors, its size, duality, as well as the presence of women on the board.Previous studies provided empirical evidence of the existence of a positive relationship between the proportion of independent board members and the level of environmental reporting (Khaireddine *et al.*, 2020; Giannarkis *et al.*, 2019; Lagasio & Cucari, 2019; Bajahar & Al-Hajili, 2017; Iatridis, 2013;). Nevertheless, Baalouch *et al.*, (2019) reported that the presence of independent directors on the board is significant but negatively associated with quality of environmental disclosure, thus confirming that these directors do not enhance non-financial disclosure.

Regarding the size of the board, it refers to the number of both inside and outside directors that serve on a corporate board. Some studies indicate a positive relationship between the board size and the level of environmental reporting (Bahajar & Al-Hajili, 2017; Mahmood *et al.*, 2018; Trireksani & Djajadikerta, 2016). Meniaoui *et al.*, (2016) and Odoemelam & Okafor (2018), in the Canadian context, showed the lack of an association between board size and environmental reporting. While diversity creates better performance and is a factor of economic efficiency, the feminization of a board is a key consideration in CSR good governance practices (Ben-Amar *et al.*, 2017). Thus, gender diversity became recognized characteristic of board diversity (Mahmood *et al.*, 2018). Khaireddine *et al.* (2020), Baalouch *et al.* (2019), Giannarakis *et al.* (2019), Lagasio & Cucari (2019), Ben-Amar *et al.* (2017), Liao *et al.* (2015) and Rupley *et al.* (2012) found that the quality of voluntary reporting of environmental information is positively associated with the presence of women on the board.

Khaireddine *et al.* (2020) suggest that women show a more responsible behavior concerning environmental disclosure to attract resources from powerful stakeholders. Always, in the context of CSR, the dual CEO function and the Chairman have a shared governance structure, but the results in this area have been mixed. *Meniaoui et al.* (2016) found that a greater measure of societal reporting including environmental reporting is associated with the separation of the two functions. In addition to the board, another pillar of responsible governance was highlighted by the agency theory, namely the ownership structure which has the following characteristics: concentration of ownership, managerial ownership and institutional ownership. Yusoff *et al.* (2015) found that there is no significant relationship between concentration of ownership and environmental disclosure. In the Malaysian context, Buniamin *et al.* (2008) found that managerial ownership has no significant effect on environmental disclosure. Also, over the past two decades, the role played by institutional investors in responsible governance has been considerable. Some studies support a positive association, claiming that the oversight role of institutional investors would encourage companies to report the disclosure of better quality financial and non-financial environmental information (Barako *et al.,* 2006; Chau & Gray, 2010; Iatridis, 2013; Rao *et al.,* 2012). Rupley *et al.* (2012) found no relationship between institutional ownership and voluntary disclosure of environmental information. Ezhilarasi & Kabra (2017) in the Indian context found that the ownership of foreign investors has a positive and significant impact on the extent of environmental disclosure but they found that domestic institutional ownership has no effect on the extent environmental disclosure. Cong & Freedman (2011) examined the relationships between good corporate governance practices and environmental performance and environmental reporting. The results indicated that there is no relationship between good governance measured by a governance index developed by Brown & Caylor (2006) and a good performance in terms of pollution. In addition, good governance was positively related to the reporting of pollution in the first years after Sarbanes Oxley.

However, this correlation does not hold when governance has been improved by Sarbanes Oxley also, much of the current literature on financial information pays particular attention to earnings timeliness (Abdelsalam & El-Masry, 2008; Afify, 2009; Al Daoud *et al.,* 2015; Alfatih *et al.,* 2017; Eslami *et al.,* 2016; Kachouri & Jarboui, 2017), but, to our knowledge, no study has investigated the relationship between timely reporting of environmental information and corporate governance. Alfatih *et al.* (2017) noted that a firm with a larger board of directors, more independent directors and separation of CEO and Chairman were more likely to produce financial statements on time. Thus, we propose the following hypothesis.
H1. *Environmental reporting quality is positively associated with the level of corporate governance quality.*

2.2.2 Media exposure and media legitimacy as moderator factor on the relationship between corporate governance and environmental disclosure quality

Nowadays, the media play an important role in our lives. Investors see and interpret the companies through media, mainly TV and newspapers, but increasingly also through websites, social media, blogs, and so on. It can be used as a strategic instrument in terms of public scrutiny to provide psychological pressure to companies, so that awareness of social-environmental issues arises, and it is expected to encourage companies to disclose more environmental and social activities (Alfariz & Widiastuti, 2021). Unquestionably, recent anecdotic evidence suggests that the media can play a part determining in the detection and the diffusion of irresponsible behavior of a company as long as it presents an external governance mechanism (Bednar, 2017). This potentially powerful governance role stems largely from the media's ability to broadcast information and make evaluative judgments of firms and mangers.El Ghoul *et al.* (2016) attest that the media can supervise and regulate the behavior of companies through the reputation mechanism or by encouraging the participation of administrative agencies. Thus, the corporate governance concept refers directly to the influence strategic decisions on the creation of value. At this stage, environmental communication is at the heart of value creation and is the responsibility of managers, as long as it reduces the existing information asymmetry between managers and all stakeholders (Ory and Petitjean , 2014) and is the best way for the company to protect their reputation. In order to stimulate the confidence of the investors, and while granting to the media a role of trainer, the companies faced an increasing media pressure to disclose more environmental information in order to protect their reputation and their legitimation (Morals-Raya *et al.,* 2018). However, the media have a central player in the legitimation field and in the environmental field because they contribute to shaping public opinion as it has an important stakeholder for the company (Morales-Raya *et al.*, 2018; Lauterbach & Pajuste, 2017…).

2.2.2.1 Media exposure as moderator factor on the relationship between corporate governance and environmental disclosure quality

Several academic studies have examined the link between media exposure and the disclosure of environmental information (Solikhah & Maulina,2021; Li *et al.*, 2018, Pollach, 2014; Zeler & Capriotti, 2018; Araujo & Kollat, 2018; Lee, 2017; Cormier & Magnan (2015,2013); Alarussi *et al.*, 2009; Gillet 2010, 2015).

Solikhah & Maulina (2021) in a first time, demonstrate that media coverage has a significant positive effect on the quality of environmental disclosure. They indicate that the more positive media coverage, the better quality of environmental disclosure. So, they have shown that Media coverage proven to be able to increase the public attention to environmental issues and indicate when the company under public scrutiny, the company will respond by making quality environmental disclosures. These authors added that environmental disclosure serves as a form of confirmation of news published by the media in order to re-gain public trust. Thus, these latter in a second time, they tested the moderating role of governance principles on the relationship between media coverage and environmental disclosure.

Their results indicate that the implementation of the principle of CG would strengthen the influence of media coverage and environmental award on the quality of environmental disclosure. Furthermore, El Ghoul *et al.* (2016) tested the interaction relationship between media freedom, the independence of the board and the commitment to social and environmental responsibility. They found that companies with more independent boards of directors were more committed to social and environmental responsibility in countries with greater media freedom. In addition, Garcia-Sanchez *et al.* (2014) analyzed the hypothesis that media exposure moderates the behavior of independent directors, which negatively affects the disclosure of information on environmental and social responsibility practices. Their results show that when companies are more visible through the media, the behavior of independent directors changes and they tend to reduce the disclosure of standardized information on CSR practices. An important part of the writings in the press surrounding the representation of the feminization of the Board. In this regard, Rupley *et al.* (2012) explored the media interaction on the relationship between the percentage of women on the board of directors and the quality of environmental information disclosure of compliance, prevention of pollution and responsible management of products as well as a measure of global indicators for the disclosure of environmental information. They found that the interaction of the variables Women and NEG_MEDIA was not significant in any of the models, while it was slightly significant in the compliance model.

Thus, they found that the Women * Neg_MEDIA variable is positively associated with the voluntary disclosure of environmental information in the responsible product management model. They explain this finding by the fact that gender diversity on the board, specifically the presence of women, has an impact on the voluntary disclosure of environmental information, in the presence of bad publicity. Similarly, Aguilera et al (2015) show that the media can promote effective governance by increasing transparency and reducing information asymmetries between management and stakeholders. These authors have shown that the media have a moderating effect on the internal mechanisms of corporate governance (board of directors, ownership structure and managerial incentives) and can interact with these mechanisms to influence the effectiveness of governance and other important results for the company. They show that various ownership structure agreements might be exposed differently in the media and that the media can interact with ownership to influence the results of various companies. They add that journalism scholars have long been concerned about the concentration of ownership in media companies and its impact on subsequent reporting. However, this potential relationship has not received significant attention in the management literature. In sum, we argue that the media exposure may influence the relationship between corporate governance and environmental disclosure quality. However, to our knowledge, no previous study has investigated the moderating effect of media exposure on the relationship between responsible governance and timely disclosure of environmental information. Therefore we predict that:

H2.1 *Media exposure has a moderating effect on the relationship between the responsible governance and voluntary disclosure of environmental information.*
H2.2 *Media exposure has a moderating effect on the relationship between the responsible governance and the timely disclosure of environmental information.*

2.2.2.2 Media legitimacy as moderator factor on the relationship between corporate governance and environmental disclosure quality

The legitimacy of a company is measured through the optics of the media (Cormier & Magnan, 2015). In order to stimulate the confidence of the investors, and while granting to the media a role of trainer, the companies faced an increasing media pressure to disclose more environmental information in order to protect their reputation and their legitimation (Morales-Raya *et al.* 2018). However, the public opinion pays attention not only to the substantial contents of the media coverage, but also to its emotional contents, in other words its tone. For this reason, some researchers were not satisfied to measure only the media level of media exposure but have studied the contents and the opinion of these media to knowing: favorable, unfavourable or neutral (Cormier & Magnan 2015; Garcia-Sanchez et al., 2014; Iatridis ,2013; Rupley *et al*,. 2012; Aerts & Cormier, 2009). This classification of the emotional contents of the media measures media legitimacy (Gillet, 2015).

Bednar *et al.* (2013) tested the interaction between the negative press coverage and the proportion of independent directors on the board of directors and strategic change. The results show that the interaction between negative press coverage and the proportion of outside directors was positive and significant. They explain this result by the fact that the effect of negative press coverage is greater when the board is made up of a higher percentage of outside directors. Thus, they approve that the combination of independent advice and negative press coverage appears to lead to greater strategic change. Rupley *et al.* (2012), show that there is a negative association between the variable "board independence * Negative media" and voluntary disclosure of environmental information in the pollution prevention level model. They explain this result by the fact that the independent members of the board of directors do not wish to attract more media attention to environmental problems at the level of pollution prevention.

Thus, for the other models (compliance, responsible product management, and full disclosure of environmental information), the results show that board independence is associated with greater voluntary disclosure of environmental information when there is an absence of bad advertising. Thus, they found that the interaction of the variables Women and NEG_MEDIA was not significant in any of the models, while it was slightly significant in the compliance model. Thus, they found that the Women * Neg_MEDIA variable is positively associated with the voluntary disclosure of environmental information in the responsible product management model. They explain this finding by the fact that gender diversity on the board, specifically the presence of women, has an impact on the voluntary disclosure of environmental information, in the presence of bad publicity. In this case, media legitimacy as measured by the Janis Fadner coefficient indicates that negative media coverage interacts with the relationship between the percentage of women on the board and the quality of environmental information disclosure.

Still with these authors, their results also show that the interaction of the variables percentage of short-term institutional investors * NEG_MEDIA is significantly positive. They explain this result by the fact that short-term institutional investors are only interested in the disclosure of information by companies when there is negative publicity.

In this case, these investors can actually lobby for environmental disclosure. In addition, they found that the interaction between the percentage of long-term institutional investors and negative publicity is significantly positive in the models of product management and total disclosure. These results are consistent with the fact that long-term investors only speak up when bad publicity is present. However, all of these studies cited above have examined the relationship between media legitimacy, governance mechanisms treated in isolation from each other, and voluntary disclosure of environmental information. So, perhaps surprisingly, there has not been, to our knowledge, any research examining the role of media legitimacy on the association of governance mechanisms as measured by a governance score and the quality of disclosure of the media environmental information namely voluntary disclosure and timely disclosure.

At this point, it would be interesting to wonder about the relationship between media legitimacy, governance score and the quality of environmental information disclosure. So, the specificity of our work consists in analyzing the hypothesis in which media legitimacy play the role of moderating variable on the relationship between the responsible governance score and the quality of environmental information disclosure.
Therefore, we assume:
H3.1 *Media legitimacy has a moderating effect on the relationship between the responsible governance and voluntary disclosure of environmental information.*
H3.2 *Media legitimacy has a moderating effect on the relationship between the responsible governance and the timely disclosure of environmental information.*

3. Research methodology

3.1 Data and variables' measurement

3.1.1 Sample

Our initial sample comprises all the companies belonging to the SBF 120 index (French stock exchange companies) over the 2014-2019 periods. It should be noted that companies belonging to the financial sector (banks, financial services, insurance companies, etc.) are supposed to be excluded from the beginning because they have a specific financial regime as well as different CSR policies. Also, companies that lack the necessary data for our analysis in the Datastream database are removed from our sample. As shown in table no.1, in total, 81 companies were selected. As a result, our overall sample includes 324 firm-year observations. Based on the sample assembled, we collected the data from the reference documents available on the Thomson Reuters Eikon database, including annual reports and sustainability reports. Thus, we collected the data from the Datastream database. For variables that affect the media exposure and media legitimacy, we used the database Factiva.

Table 1. Sample selection

Sample	**Number of firms**
Initial sample	120
Financial firms	(18)
Firms with insufficient data	(21)
Final sample	81
Duration of study	6
Total	**486**

3.2 Measurement of variables

The dependent, independent and control variables selected are presented in Appendix.

3.2.1 Regression Models

To understand the interaction between responsible governance, environmental disclosure quality, media exposure and media legitimacy, we specify the following equations:

- ***The relationship between responsible governance and environmental disclosure quality***

Model 1:

$$VED = \alpha + \beta 1\ GOV\ SCORE + \beta 2\ SIZE + \beta 3\ DEBT + \beta 4\ ACCRUALS + \beta 5\ INDUSTRY + \varepsilon i.$$

Model 2:

$$TED = \alpha + \beta 1\ GOV\ SCORE + \beta 2\ SIZE + \beta 3\ DEBT + \beta 4\ ACCRUALS + \beta 5\ INDUSTRY + \varepsilon i.$$

- ***The moderating role of media exposure on the relationship between the responsible governance and the environmental disclosure quality***

Model 3:

$$VED = \beta_0 + \beta_1 GOV\ SCORE + \beta_2\ MEDIA + \beta_3\ (GOV\ SCORE*MEDIA) + \beta_4\ SIZE + \beta_5\ DEBT + \beta_6 ACCRUALS + \beta_7 INDUSTRY + \varepsilon.$$

Model 4:

$TED = \beta_0 + \beta_1 GOV\ SCORE + \beta_2\ MEDIA + \beta_3\ (GOV\ SCORE*MEDIA) + \beta_4\ SIZE + \beta_5\ DEBT + \beta_6\ ACCRUALS + \beta_7 INDUSTRY + \varepsilon.$

- ***The moderating role of media legitimacy on the relationship between the responsible governance and environmental disclosure quality***

Model 5:

$VED = \beta_0 + \beta_1 GOV\ SCORE + \beta_2\ J\text{-}F + \beta_3\ (GOV\ SCORE*J\text{-}F) + \beta_4\ SIZE + \beta_5\ DEBT + \beta_6\ ACCRUALS + \beta_7 INDUSTRY + \varepsilon.$

Model 6:

$TED = \beta_0 + \beta_1 GOV\ SCORE + \beta_2\ J\text{-}F + \beta_3\ (GOV\ SCORE*J\text{-}F) + \beta_4\ SIZE + \beta_5\ DEBT + \beta_6\ ACCRUALS + \beta_7 INDUSTRY + \varepsilon.$

With:

VED: represents the level of voluntary disclosure of environmental information.

TED: represents the difference between the year-end and the date of the signing of one of the statutory auditors', who is appointed as independent third party on social, environmental and societal information.

GOV SCORE: represents corporate governance index composite of 51 items;

MEDIA: represents the level of media exposure measured by the number of articles.

J-F: represents the level of media legitimacy measured by the coefficient of Janis Fadner

SIZE: represents the size of the company

DEBT: represents the level of indebtedness of the company

ACCRUALS: represents the level of discretionary accruals

INDUSTRY: represents the business sector of the company

α: represents the model constant

β: represents the parameters of the model that we wish to estimate

εi: represents an unobservable random term

4. Empirical findings and discussion

4.1 Descriptive analysis

Descriptive statistics of all variables used in the analysis are shown in Table 2 and Table 3.

4.1.1 Descriptive analysis of the dependent variable: The voluntary disclosure of environmental information and timely disclosure

Tables 2 provide the minimum, maximum, mean and the standard deviation of the dependent variables. The results of the descriptive analysis are summarized in table no. 3, in this context, the average score for voluntary disclosure of environmental information (VED) is 72.89%, with a minimum rate of 50% and a maximum rate of

90%, which means that practices of voluntary disclosure of environmental information have increased very significantly for French companies composing the SBF 120 index in recent year. With regard to the timeliness of environmental disclosure, the results show that the average number of days to disclose environmental disclosure is 72 days, with a minimum of 36 days and a maximum of 174 days after the end of the fiscal year. We can note that the timely disclosure of environmental information was almost stable between 2014 and 2019. Then there is not a big difference in the date of publication of environmental information in this period (on average 74 days in 2014 and 69 days in 2019). It should be noted that French regulations require listed companies to publish their annual report within 4 months (120 days) of the end of the fiscal year. However, the publication of environmental information follows the same publication schedule as the management report or the reference document, if applicable, and meets the same time constraints. So, the ultimate goal of timely disclosure of listed French companies is to satisfy the demand of the shareholders, particularly foreign investors (Khoufi & Khoufi, 2018).

Table 2. Characteristics of the dependent variables

Variable	N	Min	Max	Mean
VED	486	0.5	0.9	0.728
TED	486	36	174	71.41

VED: *Number of items voluntarily disclosed / total number of items.*
TED: *The difference between the year-end and the date of the signing of one of the statutory auditors', who is appointed as independent third party on social, environmental and societal information*

4.1.2 Descriptive Analysis of Continuous Independent Variables

The table no. 3 shows a disparity in the number of publications of press articles devoted to the companies in our sample. The maximum number of news articles published for a company is 231, and in contrast, some companies have not had any press articles published about them. Thus, the average number of appearances of press articles is 11.59%. This result can be explained by the media attention of certain companies in the field of environmental information and the quality of its disclosure in relation to other companies in order to meet the new needs of the various stakeholders, as media coverage plays a role a convincing role in shaping public opinion, especially since journalists, concerned about their audience, see environmental news as profitable news. Regarding media legitimacy measured by the Janis-Fadner coefficient, the results show that this coefficient varies from a minimum of -1 to a maximum of 1 with an average of 0.44 and dispersion of 0.5. This result is explained by the existence of some companies that have unfavorable media coverage (-1), that is to say, the content of press articles contains information on the news of the company which indicates that corporate operations and strategies are harmful to the environment. Thus, the maximum value is equal to 1 emerges from the existence of certain companies that have favorable media coverage, that is, the content of press articles contains information about the activity of the company that indicate that the company's operations and strategies are beneficial to the environment. An average of this coefficient of 0.44 shows that the companies in our sample are characterized by favorable media coverage and suffer somewhat from unfavorable coverage. The descriptive statistics show that control variables on average reveals that the firms in our sample are of different sizes (ln (total assets was 16.33) with a minimum of 13.82 and a maximum of 19.43. The average debt ratio of the companies in the sample is 24.48% with a minimum of 0% and a maximum of 59.8%. The average of the earnings management measured by the discretionary accruals is 0.045. The minimum value of the earnings management is 0 and the maximum value in absolute value is 0.446. These results allow us to deduce that French companies representing the SBF 120 index on average have low earnings management.

Table 3. Characteristics of continuous independent variables

Variables	N	Minimum	Maximum	Mean	Std.dev
Media	486	0	231	11.59	26.616
J-F	486	-1	1	0.44	0.50
DEBT(%)	486	0	59.8%	24.4%	0.131
SIZE	486	13.821	19.436	16.331	1.250
ACCRUAl	486	0	0.446	0.045	0.054

MEDIA: *the level of media exposure measured by the number of articles****; J-F:*** *the level of media legitimacy measured by the coefficient of Janis Fadner* ***SIZE:*** *is calculated as a natural logarithm of total assets****; DEBT:*** *is calculated as the ratio of total debt to total assets;* ***ACCRUALS:*** *discretionary accruals measured according to the model of Raman and Shahrur (2008).*

4.1.3 Correlation analysis

The table 4 below illustrates the Pearson correlation matrix and variance inflation factor (VIF), this summary statistic is to ensure the absence of the problem of correlation between variables of models. The results of the correlation matrix demonstrate a no significant correlation problem. The correlation coefficients between variables are less than (0.6). This finding suggests the absence of multi-collinearity problem (Chatterjee et al., 2000).

Table 4. Pearson correlation matrix of explanatory variables

Variables	CGV INDEX	MEDIA	J-F	DEBT	SIZE	ACCRUAL	INDUSTRY
CGVINDEX	1.000						
MEDIA	0.138	1.000					
J-F	0.133	0.098	1.000				
		1.000					
DEBT	-0.059**	-0.005**	-0.05**	1.000			
		-					

Variables	CGV INDEX	MEDIA	J-F	DEBT	SIZE	ACCRUAL	INDUSTRY
SIZE	0.289	0.454	0.222	0.130	1.000		
ACCRUALS	-0.112	-0.113	-0.106	0.029***	-0.242	1.000	
INDUSTRY	0.155	-0.026	0.013***	-0.312	-0.124	-0.026***	1.000

Notes: **, ** and *** denote significantly different from zero at 0.10, 0.05 and 0.01 thresholds, respectively.*

VED*: Number of items voluntarily disclosed / total number of items.* ***TED:*** *The difference between the year-end and the date of the signing of one of the statutory auditors', who is appointed as independent third party on social, environmental and societal information.****CGV INDEX: Σ*** *Firm i item value/total items (51 items);****MEDIA:*** *the level of media exposure measured by the number of articles****; J-F:*** *the level of media legitimacy measured by the coefficient of Janis Fadner* ***SIZE****: is calculated as a natural logarithm of total assets;* ***DEBT****: is calculated as the ratio of total debt to total assets;* ***ACCRUALS****: discretionary accruals measured according to the model of Raman and Shahrur (2008);* ***INDUSTRY****: 1 if the company is part of a sensitive sector and = 0 otherwise.*

Moreover, we tested the heteroscedasticity in our empirical models. In this sense, the Breusch–Pagan test is conducted. Breusch–Pagan results show a probability lower than the 1 per cent threshold for all models, indicating that the models are heteroscedastic. Given this type of an error structure, our regressions will be estimated by the Generalized Least Squares method.

4.2 Regression analysis

Table 5 shows the results of estimating the model (1) and (2) to test the relationship between the responsible governance and the environmental disclosure quality with voluntary disclosure of environmental information as a dependent variable of the first model, and timely disclosure as a dependent variable of the second model.

As shown in the table below, we found that the coefficient of the responsible governance index (CGV INDEX) is positive and very significant (at 1%) for the model with the voluntary disclosure of environmental information as the dependent variable. This result is in line with the findings of Cong & Freedman (2011) which have shown that there is a positive relationship between good governance measured by a governance index developed by Brown and Caylor (2006) and pollution disclosure in the first years after SOX. However, this found result does not corroborate the results found by Kachouri & Jarboui (2017) in the context of financial information who found that no significant link was found between the corporate governance index and the index of voluntary disclosure of financial information. For model 2, the coefficient of the governance index was found to be negative and significant at 1%.

This suggests that there is a significant relationship between the responsible governance index and the time of disclosure of environmental information. This result is compatible with the results found by Alfatih *et al.* (2017) in the context of financial reporting which pointed out that companies with a larger board, more independent directors and the separation of roles of CEO and chairman are more likely to produce financial statements on time. Thus, our results are consistent with studies by Eslami *et al.* (2016) confirming that there is a significant correlation between board size and timely disclosure of financial reports in companies. Their results show that there is a significant relationship between institutional ownership, family ownership and the concentration of ownership and the speed of disclosure of financial information. However, our results do not support the results found by Kachouri & Jarboui (2017) in the context of financial reporting who found no association between timely disclosure of financial information and the governance index. Then, from the result found, our first hypothesis is accepted and we can conclude that the responsible governance index does have a factor influencing the voluntary and timely disclosure of environmental information.

Table 5. Summary of results for model 1 and 2:

	Model 1 : VED		**Model 2 : TED**	
	Coefficients	P>|z|	Coefficients	P>|z|
CGV INDEX	0.043***	0.000	-15.476***	0.000
DEBT	0.059***	0.000	10.908***	0.012
SIZE	0.008***	0.000	-1.607***	0.000
ACCRUALS	0.523***	0.000	-42.559***	0.000
INDUSTRY	0.021***	0.000	-0.090	0.919
N	486		486	
R-Squared	0.3139		0.050	
Wald Khi-2	202.20***		531.07***	
Prob > Chi-2	0.000		0.000	

VED: Number of items voluntarily disclosed / total number of items.
TED: The difference between the year-end and the date of the signing of one of the statutory auditors', who is appointed as independent third party on social, environmental and societal information. ***CGV INDEX:*** ***Σ*** *Firm i item value/total items (51 items);* **DEBT**: is calculated as the ratio of total debt to total assets; **ACCRUALS**: discretionary accruals measured according to the model of Raman and Shahrur (2008); **INDUSTRY**: 1 if the company is part of a sensitive sector and = 0 otherwise.
*, **, *** denote significant differences from zero at 0.10, 0.05 and 0.01 levels, respectively.

Among the control variables, starting with firm size, the results show a statistically significant relationship between the size of the firm and the quality of environmental disclosure quality as measured by voluntary and timely disclosure. Regarding the relationship between the debt level and the quality of environmental disclosure quality, we have found that there is a significant at 1% effect respectively on the voluntary and the timely disclosure of environmental information. So, we can say in this case, companies with a high debt level firm tend to delay the disclosure of environmental information on time. Besides, it has been found that the coefficient of the variable Accruals is positive and significant at 1%. This is consistent with the result of several studies, i.e. (Mohamed & Faouzi, 2014; Prior *et al.*, 2008). Also, the results show that the coefficient of the variable Accruals is negative and significant at 1% with the timely disclosure of environmental information. This result does not support the result found by Masoud & Talebbeydokhti (2015) who show that the earnings management had no significant effect on disclosure on time. Finally, regarding the relationship between the industry and the environmental disclosure quality, the result showed a significant relationship for voluntary disclosure and is reported to have an insignificant relationship for timely.

Table 6. The moderator effect of media exposure on the relationship between responsible governance and environmental disclosure quality

	Model 3 : VED		**Model 4 : TED**	
	Coefficients	P>|z|	Coefficients	P>|z|
CGV INDEX	0.062***	0.000	-21.204***	0.000
MEDIA	0.002***	0.000	-0.710***	0.000
CGVINDEX*MEDIA	-0.003***	0.000	1.028***	0.000
DEBT	0.055***	0.000	11.148***	0.011
SIZE	0.008***	0.000	-2.290***	0.000
ACCRUALS	0.404***	0.000	-51.921***	0.000
INDUSTRY	0.018***	0.000	0.611	0.524
N	486		486	
R-Squared	0.088		0.103	
Wald Khi-2	212.40***		490.57***	
Prob > Chi-2	0.000		0.000	

VED: *Number of items voluntarily disclosed / total number of items.*
TED: *The difference between the year-end and the date of the signing of one of the statutory auditors', who is appointed as independent third party on social, environmental and societal information.* ***CGV INDEX:*** *Σ Firm i item value/total items (51 items);* ***MEDIA:*** *the level of media exposure measured by the number of articles* ***DEBT***: *is calculated as the ratio of total debt to total assets;* ***ACCRUALS***: *discretionary accruals measured according to the model of Raman and Shahrur (2008);* ***INDUSTRY***: *1 if the company is part of a sensitive sector and = 0 otherwise.*
, **, * denote significant differences from zero at 0.10, 0.05 and 0.01 levels, respectively.*

In terms of the moderator effect of the media exposure on the relationship between the responsible governance and the voluntary disclosure of environmental information, as shown in the table no.6 above, we found that the interaction term between media exposure and the responsible governance is negative and significant at 1% for model 3. Such a result leads us to confirm our H2.1: Media exposure has a moderating effect on the relationship between responsible governance and voluntary disclosure of environmental information. However, this relationship supports the substitution of media exposure and responsible governance for the voluntary disclosure of environmental information. This means that media exposure and responsible governance have not together produced a positive synergistic effect that allows for increased environmental disclosure. Our results corroborate the results found by Garcia-Sanchez *et al.* (2014) who analyzed the hypothesis that media exposure moderates the behavior of independent directors, which negatively affects the disclosure of environmental and social information on accountability practices.

Their results show that when companies are more visible through the media, the behavior of independent directors changes and they tend to reduce the disclosure of standardized information on CSR practices. They explain this result by the fact that independent directors, as external professionals, do not have a thorough knowledge of the management of the company (Patton & Baker, 1987) nor of its social and environmental impacts (Baysinger & Hoskisson, 1990). Their fear of bad news does not make them supportive of information disclosure. Bad news damages their professional reputation, the main feature that motivates independent directors (Fama & Jensen, 1983; Lorsch & Maciver, 1989), which is decisive for their future directorships in other companies (Fahlenbrach *et al.* 2010).Thus, our results corroborate the results of Aguilera *et al.* (2015) who showed that the media have a moderating effect on the internal mechanisms of corporate governance (board of directors, ownership structure and managerial incentives) and can interact with these mechanisms to influence the effectiveness of governance and other important business outcomes. They show that various ownership structure agreements might be exposed differently in the media and that the media can interact with ownership to influence the results of various companies. So, the simultaneous presence of media exposure and responsible governance through these different determinants (board of directors, ownership structure, etc.) negatively affects the voluntary disclosure of environmental information. This means that responsible governance and increased media exposure does not imply voluntary disclosure of environmental information. Also, the coefficient of the interactive effect between media exposure and responsible governance (x4 * z1) is positive and significant at 1% for model 2 with DAT as the dependent variable. So media exposure moderates the relationship between responsible governance and timely disclosure of environmental information.

This leads us to confirm our H.2.2: Media exposure has a moderating effect on the relationship between responsible governance and timely disclosure of environmental information. So, this result shows a complementary relationship between media exposure and responsible governance explaining the timely disclosure of environmental information. So the simultaneous presence of responsible governance with media exposure affects the mitigation of timely disclosure of environmental information. So, the simultaneous presence of media exposure with responsible governance moderates the voluntary and timely disclosure of environmental information.

Regarding the moderating effect of media legitimacy on the relationship between responsible governance and the voluntary disclosure of environmental information, the table below shows that the interaction effect (GOV SCORE * JF) is negative and not significant. Such a result leads us to invalidate our H3.1. This result can be explained by the fact that the quality of responsible governance is not associated with high voluntary disclosure of environmental information when there is media legitimacy. Furthermore, responsible governance does not imply better voluntary disclosure of environmental information in the presence of media legitimacy. So the simultaneous presence of responsible governance with media legitimacy does not affect the voluntary disclosure of environmental information. However, this insignificant association is consistent with the work of Rupley *et al*. (2012) who explored the interaction of negative media coverage on the relationship between the percentage of women on the board and the quality of disclosure of the board environmental information on compliance, prevention, pollution and responsible management of products.

However, this result contradicts the results found by Bednar *et al.* (2013) which showed that the interaction between negative press coverage and the proportion of outside directors was positive and significant explaining the strategic change. Also, the coefficient of the interactive effect between media legitimacy and responsible governance (x4 * z2) is positive and not significant for model 2 with DAT as the dependent variable. So media legitimacy does not moderate the relationship between responsible governance and timely disclosure of environmental information. This leads us to invalidate our H.3.2: Media legitimacy has a moderating effect on the relationship between responsible governance and the timely disclosure of environmental information. So the simultaneous presence of responsible governance with media legitimacy does not affect the timely disclosure of environmental information. So the simultaneous presence of media legitimacy with responsible governance does not moderate either the voluntary disclosure or the timely disclosure of environmental information.

Table 7. The moderator effect of media legitimacy on the relationship between responsible governance and environmental disclosure quality

	Model 5 : VED		**Model 6 : TED**	
	Coefficients	P>|z|	Coefficients	P>|z|
CGV INDEX	0.045***	0.000	-17.030***	0.000
J-F	0.002	0.695	-1.583	0.470
CGVINDEX*J-F	-0.006	0.552	3.316	0.295
DEBT	0.055***	0.001	13.085**	0.005
SIZE	0.008***	0.000	-1.295***	0.000

	Model 5 : VED		**Model 6 : TED**	
	Coefficients	P>|z|	Coefficients	P>|z|
ACCRUALS	0.387***	0.000	-39.953***	0.000
INDUSTRY	0.020***	0.000	0.437	0.632
N	486		486	
R-Squared	0.079		0.058	
Wald Khi-2	187.62***		267.68***	
Prob > Chi-2	0.000		0.000	

***VED**: Number of items voluntarily disclosed / total number of items.*
***TED:** The difference between the year-end and the date of the signing of one of the statutory auditors', who is appointed as independent third party on social, environmental and societal information. **CGV INDEX:** **Σ** Firm i item value/total items (51 items); **J-F:** the level of media legitimacy measured by the coefficient of Janis Fadner **DEBT**: is calculated as the ratio of total debt to total assets; **ACCRUALS**: discretionary accruals measured according to the model of Raman and Shahrur (2008); **INDUSTRY**: 1 if the company is part of a sensitive sector and = 0 otherwise.*
, **, * denote significant differences from zero at 0.10, 0.05 and 0.01 levels, respectively.*

5. Conclusion

This study provided fresh evidence on the relationship between the responsible governance and the environmental disclosure quality while taking into account the moderator effect of media exposure and media legitimacy in this relationship of a sample of French listed companies composing the SBF 120 index.

The results of the empirical study of the impact of responsible governance and the quality of the disclosure of environmental information, namely voluntary disclosure and timely disclosure, show that the responsible governance as measured by an index, the size of the firm, the level of debt and the earnings management are systematically significant determinants of the quality disclosure of environmental information. However, our findings support the predicted positive and significant relation between the industry and the voluntary environmental disclosure but failed to support the predictive relationship with the timely disclosure.

We, then, test the interaction between responsible governance, environmental disclosure quality, and media exposure and media legitimacy. The results show that the media exposure plays the role of moderator between the responsible governance and the voluntary disclosure of environmental information. Thus, our results show media exposure moderates the relationship between responsible governance and timely disclosure of environmental information.

For moderator role of media legitimacy, the results show that the media legitimacy did not moderate the relationship between the responsible governance and the quality

of environmental information disclosure as measured by voluntary and timely disclosure.
This study is a good reference on the fundamental role of the media in improving environmental disclosure quality. This paper contributes to the literature on environmental disclosure quality by using a new measure of environmental disclosure quality by incorporating timely disclosure. This differentiates our study from previous studies that measured environmental disclosure quality by voluntary disclosure only (Solikhah *et al.*, 2021; Khaireddine *et al.*, 2020; Rupley *et al.*, 2012). This paper also contributes to the literature on governance and the media by using the interaction between the media and responsible governance measured by a composite index of internal and external governance mechanisms, which is more robust than individual governance measures; this also differentiates our study from previous studies (Aguilera *et al.*, 2015; Garcia-Sanchez *et al.*, 2014; Rupley *et al.*, 2012).

This present study contributes to the literature on the quality of disclosure of environmental information, the responsible governance, the media exposure and the media legitimacy.

In this regard, it has a theoretical, methodological, managerial and practical implication.

From a theoretical point of view, despite the plurality of research work on the voluntary disclosure of environmental information, our work, to our knowledge, is the first to have focused on the timely disclosure of environmental information. Thus, the dual contractual and institutional theoretical framework seems to us to be very relevant for this type of research. A second theoretical contribution is the importance of the role played by media exposure and media legitimacy on the relationship between responsible governance and the quality of environmental information disclosure.

Methodologically, our contribution lies in the integration of media exposure and media legitimacy as two moderating variables, as yet little explored on the relationship between responsible governance and the quality of environmental information disclosure. To our knowledge, our work is the first to have studied the moderating role of media exposure and the moderating role of media legitimacy on the relationship between the responsible governance and the voluntary and timely disclosure of environmental information in the French context. Indeed, while there is an abundant literature dealing with the direct effect of media exposure and media legitimacy on the quality of disclosure of environmental information, research testing the indirect effect of the latter on the relationship between responsible governance as measured by an index and the quality of environmental information disclosure, especially timely disclosure, are very rare or even non-existent. This is especially useful for companies to create a positive image and maintain a good reputation.

From a managerial point of view, the study of the timely disclosure of environmental information allows professional accountants and stock market authorities and the users of environmental information to know the factors associated with late publication of environmental information, and this is in order to improve the efficiency of those producing the audit and the disclosure service. In addition, the study allows the French legislator to be more aware of all the factors that disrupt the timely disclosure of extra-financial information, specifically environmental information to better guide reforms and improve the functioning of the financial market, as the audited financial statements and sustainability report together with audit reports are the only reliable sources available to investors and other external users of accounting, the financial and non-financial information. In fact, practically the findings of this study shows that the quality of environmental information disclosure represents for some companies an important means available to managers to influence the external perceptions of their company and a strategic tool for managing its legitimacy.

While our research makes several contributions, two limitations need to be considered. First, with a small sample size, caution must be applied, as the findings might not be generalized. Also, the choice of the corporate governance index must include more cognitive proxies. This research has thrown up many questions in need of further investigation. This study is only a starting point from the relationship between the corporate governance measured by an index, the media exposure, and the voluntary disclosure of environmental information. Further work needs to be done to make a comparative study with other contexts dealing with this subject. In addition, our research could also be extended by case studies that allowed us to highlight other proxies for the corporate governance index by integrating cognitive items to provide better performing indices.

References

Abba, M., Said, R. M., Abdullah, A., & Mahat, F., (2018) “The relationship between environment operational performance and environmental disclosure of nigerian listed companies”, *Journal of Environmental Accounting and Management*, vol. 6, no. 1: 1-15.

Abdelsalam,O. & El-Masry, A. (2008), “The impact of board independence and ownership structure on thetimeliness of corporate internet reporting of Irish-listed companies”, *Managerial Finance*, vol. 34, no. 12: 907-918.

Aerts, W., Cormier, D., & Magnan, M., (2009) “Corporate environmental disclosure, financial markets and the media: An international perspective”, *Ecological Economics*, vol. 4*6, no.*3:643-659.

Aguilera, R. V., Desender, K., Bednar, M. K., & Lee, J. H. (2015) "Connecting the dots: Bringing external corporate governance into the corporate governance puzzle", The *Academy of Management Annals*, vol. 9, no. 1: 483-573.

Al Arussi. S, A., Hisyam Selamat, M., & Mohd Hanefah, M. (2009) "Determinants of financial and environmental disclosures through the internet by Malaysian companies", *Asian Review of Accounting*, vol. 17, no.1: 59-76.

Al Daoud, K.A., Ismail, K.N.I.K. & Lode, N.A. (2015) "The impact of internal corporate governance on the timeliness of financial reports of Jordanian firms: evidence using audit and management report lags", *Mediterranean Journal of Social Sciences*, vol. 6, no. 1: 205-231.

Alfatih, A., Sartika, D.D., Enh, D.H. & Can, N.T. (2017) "The effectiveness of Kambang Iwak Besak park as a public spaces, in palembang city", *Advanced Science Letters*, vol. 23, no. 5: 4904-4907.

Alipour, M., Ghanbari, M., Jamshidinavid, B. and 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*, vol. 19, no. 3: 580-610.

Araujo, T., & Kollat, J. (2018) "Communicating effectively about CSR on Twitter", *Internet Research,* vol. 28, no. 2: 419-431.

Ashfaq, K., & Rui, Z. (2019) "Revisiting the relationship between corporate governance and corporate social and environmental disclosure practices in Pakistan", *Social Responsibility Journal*, vol.15, no.1: 90-119.

Afify, H.A.E. (2009) "Determinants of audit report lag: does implementing corporate governance have any impact? Empirical evidence from Egypt", *Journal of Applied Accounting Research*, vol. 10, no. 1: 56-86.

Ala' Mohammad, R. (2019) "Board characteristics and environmental disclosure: Evidence from Jordan*", International Journal of Business and Management,* vol. 14, no. 2: 57-65.

Alfariz, R., & Widiastuti, H. (2021) "The Influence of Media Exposure, Managerial Ownership, and the Indonesia Sustainability Reporting Award on Corporate Social Responsibility (CSR) Disclosure", *4th International Conference on Sustainable Innovation 2020-Accounting and Management (ICoSIAMS 2020)*, pp. 259-266.

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*, vol.23, no.4: 939-971.

Bajahar, M.S. & Al-Hajili, A.H. (2017) "The impact of the board of directors' structure on the level of voluntary disclosure in cement companies listed on the Saudi stock exchange", *Arab Journal of Administrative Sciences*, vol. 24, no. 3: 383-410.

Barako, D. G., Hancock, P., & Izan, H. Y. (2006)" Factors influencing voluntary corporate disclosure by Kenyan companies", *Corporate Governance: An International Review, vol.* 14, no.2: 107-125.

Bednar, M. K. (2017) "The role of the media in corporate governance", *Oxford Research Encyclopedia of Business and Management*

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*, vol. 142, no. 2: 369-383.

Bednar, M. K., Boivie, S., & Prince, N. R. (2013) "Burr under the saddle: How media coverage influences strategic change", *Organization Science*, vol. 24, no. 3: 910-925.

Brown, L.D. & Caylor, M.L. (2006) "Corporate governance and firm valuation", *Journal of Accounting and Public Policy*, vol. 25, no. 4: 409-434.

Buniamin, S., Alrazi, B., Johari, N. H., & Abd Rahman, N. R. (2008) "An investigation of the association between corporate governance and environmental reporting in Malaysia", *Asian Journal of Business and Accounting*, vol. 1, no. 2: 65-99.

Cao, Y., Cassell, C. A., Myers, L. A., & Omer, T. C. (2017) "Does company reputation matter for voluntary disclosure quality? Evidence from management earnings forecasts", *Evidence from Management Earnings Forecasts, March 1, 2017*.

Certo, S. T. (2003) "Influencing initial public offering investors with prestige: Signaling with board structures", *Academy of Management Review*, vol. *28*, no. 3: 432-446.

Certo, S. T., Daily, C. M., & Dalton, D. R. (2001) "Signaling firm value through board structure: An investigation of initial public offerings", *Entrepreneurship Theory and Practice*, vol. 26, no. 2: 33-50.

Chau, G., & Gray, S. J. (2010) "Family ownership, board independence and voluntary disclosure: Evidence from Hong Kong", *Journal of International Accounting, Auditing and Taxation*, vol.19, no .2: 93-109.

Clarkson, P. M., Li, Y., Richardson, G. D., & Vasvari, F. P., (2008) "Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis" *Accounting, Organizations and Society*, vol. *33, no.* 4: 303-327.

Cong, Y. & Freedman, M. (2011) "Corporate governance and environmental performance and disclosures", *Advances in Accounting*, vol. 27, no. 2: 223-232.

Connelly, B.L., Certo, S.T., Ireland, R.D., Reutzel, C.R., (2011) "Signaling theory: a review and assessment", *Journal of Management*, vol. 37, no. 1: 39-67.

Cormier, D., & Magnan, M. (2015) "The economic relevance of environmental disclosure and its impact on corporate legitimacy: An empirical investigation", *Business Strategy and the Environment*, vol. 24, no.6: 431-450.

El Ghoul, S., Guedhami, O., Nash, R., & Patel, A. (2019) "New evidence on the role of the media in corporate social responsibility", *Journal of Business Ethics*, vol. 154: 1051-1079.

Eslami, R., Armin, A. & Jaz, H.R. (2016) "A study on the effect of corporate governance on the timeliness of financial reports of listed firms on Tehran stock exchange", *Academic Journal of Accounting and Economic Researches,* vol. 4, no. 4: 2333- 0783.

Ezhilarasi, G., & Kabra, K. C. (2017) "The impact of corporate governance attributes on environmental disclosures: Evidence from Indi", *Indian Journal of Corporate Governance*, vol. 10, no. 2: 24-43.

Farooq, M. B., & de Villiers, C. (2019) "Sustainability assurance: Who are the assurance providers and what do they do?", *Challenges in Managing Sustainable Business: Reporting, taxation, ethics and governance*: 137-154.

Garcia-Sanchez, I. M., Cuadrado-Ballesteros, B., & Sepulveda, C. (2014) "Does media pressure moderate CSR disclosures by external directors?", *Management Decision*, vol. 52, no. 6: 1014-1045.

Gerged, A. M. (2021) "Factors affecting corporate environmental disclosure in emerging markets: The role of corporate governance structures", *Business Strategy and the Environment*, vol.30, no.1: 609-629.

Gerged, A. M., Albitar, K., & Al-Haddad, L. (2021) "Corporate environmental disclosure and earnings management-the moderating role of corporate governance structures", *International Journal of Finance & Economics*, pp. 1-22.

Giannarakis, G., Andronikidis, A., & Sariannidis, N. (2019) "Determinants of environmental disclosure: Investigating new and conventional corporate governance characteristics", *Annals of Operations Research*: 1-19.

Gillet-Monjarret, C. (2015) "Assurance of sustainability information: A study of media pressure", *Accounting in Europe*, vol. 12, no. 1: 87-105.

Gray, J. V., & Handley, S. M. (2015)" Managing contract manufacturer quality in the presence of performance ambiguity", *Journal of Operations Management*, vol. 38: 41-55

Guidara, A., Khlif, H., & Jarboui, A., (2014) "Voluntary and timely disclosure and the cost of debt: South African evidence, *Meditari Accountancy Research*, vol. 22, no. 2: 149-164

Hooks, J., & van Staden, C. J., (2011) "Evaluating environmental disclosures: The relationship between quality and extent measures", *The British Accounting Review*, vol. 43, no. 3: 200-213

Iatridis, G. E., (2013) "Environmental disclosure quality: Evidence on environmental performance, corporate governance and value relevance", *Emerging Markets Review*, vol.14: 55-75.

Jensen, M. C., & Meckling, W. H., (1976) "Theory of the firm: Managerial behavior, agency costs and ownership structure", *Journal of Financial Economics*, vol. 3, no. 4: 305-360.

Kachouri, M. & Jarboui, A. (2017) “Exploring the relation between corporate reporting and corporate governance effectiveness”, *Journal of Financial Reporting and Accounting*, vol. 15, no. 3: 347-366.

Khaireddine, H., Salhi, B., Aljabr, J., & Jarboui, A. (2020) “Impact of board characteristics on governance, environmental and ethical disclosure”, *Society and Business Review*, vol. 15, no. 3: 273- 295.

Khoufi, N., & Khoufi, W., (2018) “An empirical examination of the determinants of audit report delay in France” *Managerial Auditing Journal*, vol. 33, no. 8/9: 700-714.

Kuo, L., & Yi-Ju Chen, V. (2013) “Is environmental disclosure an effective strategy on establishment of environmental legitimacy for organization?”, *Management Decision*, vol. 51, no.7: 1462-1487.

Lagasio, V., & Cucari, N. (2019) “Corporate governance and environmental social governance disclosure: A meta-analytical review”, *Corporate Social Responsibility and Environmental Management*, vol. 26, no. 4: 701-711.

Lauterbach, B., & Pajuste, A. (2017) “The media and firm reputation roles in corporate governance improvements: Lessons from European dual class share unifications”, *Corporate Governance: an International Review*, vol. 25, no. 1: 4-19.

Lee, K.-H., Cin, B. C., & Lee, E. Y. (2016)” Environmental responsibility and firm performance: The application of an environmental, social and governance model”, *Business Strategy and the Environment*, vol. 25, no. 1: 40-53.

Lee, K. H. (2017) “Does size matter? Evaluating corporate environmental disclosure in the Australian mining and metal industry: A combined approach of quantity and quality measurement”, *Business Strategy and the Environment*, vol. 26, no. 2: 209-223.

Li, D., Huang, M., Ren, S., Chen, X., & Ning, L. (2018)” Environmental legitimacy, green innovation, and corporate carbon disclosure: Evidence from CDP China 100”, *Journal of Business Ethics*, vol. 150, no.4: 1089-1104.

Liao, L., Luo, L., & Tang, Q. (2015) “Gender diversity, board independence, environmental committee and greenhouse gas disclosure”, *The British Accounting Review*, vol. 47, no.4: 409-424.

Mahmood, Z., Kouser, R., Ali, W., Ahmad, Z., & Salman, T. (2018) “Does corporate governance affect sustainability disclosure? A mixed methods study”, *Sustainability*, vol. *10, no.*1: 207.

McCombs, M. E., & Shaw, D. L. (1972) “The agenda-setting function of mass media”, *Public opinion quarterly*, vol. 36, no. 2: 176-187.

Meniaoui, Z., Halioui, KH., & Zehri, F (2016)” CSR Disclosure and Corporate Governance: A By-Contextual Analysis”, *International Journal of Business & Economic Strategy* (IJBES). vol.4: 1-7

Mio, C., Fasan, M., Marcon, C., & Panfilo, S. (2020) “The predictive ability of legitimacy and agency theory after the implementation of the EU directive on non-financial information”, *Corporate Social Responsibility and Environmental Management*, vol. 27, no. 6: 2465-2476.

Mohamed, T., & Faouzi, P. J. (2014) "Le Rôle Instrumental Et Incitatif Du Reporting Sociétal Dans La Gestion Des Résultats", *Global Journal of Management And Business Research*, vol. 13, no. 5: 25-39.

Morales-Raya, M., Martín-Tapia, I., & Ortiz-de-Mandojana, N. (2018) "To Be or to Seem: The Role of Environmental Practices in Corporate Environmental Reputation", *Organization & Environment*, vol. 32, no. 3:309-330.

Odoemelam, N., & Okafor, R. G. (2018) "The influence of corporate governance on environmental disclosure of listed non-financial firms in Nigeria", *Indonesian Journal of Sustainability Accounting and Management*, vol. 2, no. 1: 25-50.

Ory, J. F., & Petitjean, J. L. (2014) "RSE et performance financière: une approche par la communication des entreprises", *La Revue des Sciences de Gestion*, vol. 3: 69-78.

Peters, G. F., & Romi, A. M., (2014) "Does the voluntary adoption of corporate governance mechanisms improve environmental risk disclosures? Evidence from greenhouse gas emission accounting", *Journal of Business Ethics*, vol.125, no.4: 637-666.

Pollach, I. (2014) "Corporate environmental reporting and news coverage of environmental issues: An agenda-setting perspective", *Business Strategy and the Environment*, vol. 23, no.5: 349-360.

Radhouane, I., Nekhili, M., Nagati, H., & 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: 65-98.

Rao, K.K., Tilt, C.A.& Lester, L.H. (2012) "Corporate governance and environmental reporting: an Australian study", *Corporate Governance,* vol. 12, no. 2: 143-163.

Rupley, K.H., Brown Et, D. & Marschall, R.S. (2012) "Governance, media and the quality of of environmental disclosure" *Journal of Accounting and Public Policy*, vol. 31, no.6: 610-640

Shahab, Y., & Ye, C. (2018) "Corporate social responsibility disclosure and corporate governance: empirical insights on neo-institutional framework from China", *International Journal of Disclosure and Governance*, vol. 15, no. 2: 87-103. https://doi.org/10.1057/s41310-018-0038-y

Solikhah, B., & Maulina, U. (2021) "Factors influencing environment disclosure quality and the moderating role of corporate governance", *Cogent Business & Management*, vol.*8, no.*1: 1876543.

Trireksani, T., & Djajadikerta, H. G. (2016)" Corporate Governance and Environmental Disclosure in the Indonesian Mining Industry", *Australasian Accounting, Business and Finance Journal*, vol. 10, no. 1: 18.

Van Tulder, R., & van Mil, E. (2020) "Responsible governance: Broadening the corporate governance discourse to include positive duties and collective action", *Research Handbook of Responsible Management*: 175-194.

Wakaisuka-Isingoma, J., Aduda, J., Wainaina, G., & Mwangi, C. I. (2016) "Corporate governance, firm characteristics, external environment and performance of financial institutions in Uganda: A review of literature", *Cogent Business & Management*, vol. *3*, no. 1: 1261526.

Welbeck, E. E., Owusu, G. M. Y., Bekoe, R. A., & Kusi, J. A., (2017)" Determinants of environmental disclosures of listed firms in Ghana", *International Journal of Corporate Social Responsibility*, vol. 2, no.1: 11.

Xie, J., Nozawa, W., Yagi, M., Fujii, H. and Managi, S. (2019) "Do environmental, social, and governance activities improve corporate financial performance?", *Business Strategy and the Environment*, vol. 28, no. 2: 286-300.

Yusoff, H., Darus, F., & Rahman, S. A. A. (2015) "Do corporate governance mechanisms influence environmental reporting practices? Evidence from an emerging country", *International Journal of Business Governance and Ethics*, vol. 10, no. 1:76-96.

Zeler, I., & Capriotti, P. (2018)" Interactive management of the CSR communication of Argentinian companies on Facebook", *RETOS. Revista de Ciencias de la Administración y Economía*, vol. *8*, no. 16:7-18.

Zhang, Y. & Liao, L. (2015) "Corporate social responsibility assurance: theory, regulations an environmental disclosure*", Journal of Accounting and Public Policy*, vol. 31, no. 6: 610-640.

Appendix: measurement of the variables

Variables	Symbol	Measures
Dependent variables		
Voluntary reporting of Environmental Information	VED: Number of items voluntarily disclosed / total number of items.	This variable is measured by a reporting index used by Clarkson et al. (2008); and supplemented by the GRI indicators in its fourth version (G4) and by some criteria inspired by Hooks and Van Staden (2011). $$TD \cdot j = \frac{\sum \cdot Xij}{nj}$$ With: TD = the score of voluntary reporting of environmental information nj = number of items for jth company is equal to 65. Xij = number of items disclosed by the company.
Timeliness environmental disclosure	TED:	The difference between the year-end and the date the report was signed, one of the statutory auditors, designated independent third party, on social, environmental and societal information
Variables related to responsible governance		
Responsible governance	GOV score	**Σ** Firm i item value/total items (51 items) In this study, we chose an analysis grid based on the governance index developed by Brown and Caylor (2006). This index is composed of 51 internal and external items that individually measure the structured governance mechanisms according to the eight ISS categories: audit, the board of directors, charter/regulations, director training, compensation of officers and directors, the structure of the group ownership, progressive practices and state of constitution. We use a score as a variable to measure characteristics of governance.

Variables	Symbol	Measures
		The total index is a percentage corresponding to the equally-weighted average of the eight sub-indices. Each sub-index is calculated as the percentage of dispositions for which we put 1, out of the total number of dispositions in the sub-index. Therefore, the maximum value of the index is 100% It is collected from the reference documents
The variables related to moderating variables: Media exposure and Media legitimacy		
Media exposure	Media	Number of the articles published in the French press "Les Echos" for each company for the six-year period from 2014 to 2019
Media ligitimacy	J-F	Janis-Fadner Coefficient = $(e^2 - ce) / t^2$ if e >c = $(ec - c^2) / t^2$ if c >e = 0 if e = c This coefficient can take values between -1 (negative) and +1 (favorable), with 0 indicating neutral appearance (equilibrium). With: **e** is the number of favorable articles for a given year. **c** is the number of unfavorable articles for a given year. **t** is the sum of c and e.
Control variables		
The size of the company	**SIZE**	The natural logarithm of total assets
The level of debt	**DEBT**	Total debts / Total assets
Earnings management	**Accruals**	<u>**Model Raman and Shahrur (2008):**</u>
		$TAit/Ai_{t-1} = \boldsymbol{\alpha 1}\ (1/Ai_{t-1}) + \boldsymbol{\alpha 2}\ ((\Delta\ REVit - \Delta\ RECit)/Ai_{t-1}) + \boldsymbol{\alpha 3}\ (PPEit/Ai_{t-1}) + \boldsymbol{\alpha 4}\ ROAit + \boldsymbol{\alpha 5}\ BMTit + \varepsilon it$
		Avec: i: means the company in the sample t: means fiscal year TA: represents total accruals that are approximated by the difference between net profit and operating cash flow. Ai_{t-1}: the total assets $_{t-1}$

Variables	Symbol	Measures
		Δ REVit: is the change in revenues from the preceding year (REVt – REVt–1) Δ REC it : is the change in net accounts receivables from the preceding year (REVt – REVt–1) PPEit: stands for the gross value of property, plant and equipment. ROA: represents the return on assets of firm i in year t. BM: is the book-to-market ratio of firm i in year t. εit: represents the error term which serves as our proxy for discretionary accruals in year t α1, α2, α3, α4, α5 : are parameter to be estimated.
The industry	**industry**	1: if the company belongs to a sensitive sector 0: otherwise