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**REPUTATION, REGULATION AND CORPORATE
GOVERNANCE AS DETERMINANTS OF THE
IMPROVEMENT OF NON-FINANCIAL
INFORMATION REPORTING**

TESIS DOCTORAL

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*A María José y Sebastiana,
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CHAPTER 1: INTRODUCTION

Reputation, regulation and corporate governance as determinants of the improvement of NFI reporting

1.1 INTRODUCTION AND MOTIVATION OF THE RESEARCH TOPIC

Many years have passed since corporate social responsibility (CSR) and the disclosure of non-financial information (NFI) aroused interest in very few organizations (Hąbek & Wolniak, 2016). Today, they are part of the main priorities for the most important companies in the world, and they are seen as an important part of the strategy due to the many benefits associated with them (Castilla-Polo & Sánchez-Hernández, 2020).

In the last decades, it has become evident the relevance that NFI reporting has worldwide. It can be seen through the evolution of the issuance of this type of reports. We can make a comparison between 2002 (Kolk & van der Veen, 2002) and 2022 (KPMG, 2022) thanks to some studies made by KPMG. In 2002, 45% of the G250¹ companies published a separate report. It can seem a high number of firms reporting on a time when disclosure was voluntary. However, 73% of the reports that were published covered just health and safety aspects. Only 10% addressed environmental and social matters at the same time. If we have a look two decades after, in 2022, the numbers show that 96% of the G250 companies report on ESG matters. For the N100² companies, 23% of the firms disclosed NFI information in 2002, while in 2022 it is 79%.

Not only the percentage of firms that disclose has risen, but the diversity of aspects that they disclose information about too. Also, the verification of the report by a third party has increased: from 29% of the reports disclosed by the G250 companies in 2002, to 63% in 2022. In Spain the percentage is even higher: 85% of the N100 Spanish companies disclosed NFI in 2020 (KPMG, 2020), and 94% of these firms have the report verified by an external auditor.

¹ top 250 companies of the Global Fortune 500 companies

² top 100 companies by revenue in each of the X countries. (In 2002, X=19; In 2022, X=58)

Reporting NFI, that started as a voluntary action from firms, is becoming a critical aspect for them. The first attempt to make mandatory reporting in Europe was addressing large firms. The EU Directive 2014/95/UE was enacted by the European Parliament in 2014. This directive attempted to improve transparency by requiring firms to report information on six topics: environmental; social; employee matters; respect for human rights; anti-corruption; and bribery matters. However, recent regulatory pressures have been making it mandatory progressively for more firms, regardless of their size. On the 5th of January (2023) the Directive (EU) 2022/2464 (European Parliament, 2022) came into force and will require approximately 50.000 large and listed SMEs in total to report on sustainability. These directives are sending a clear message to organizations about the political commitment with transparency, extent, quality, and liability of NFI.

NFI reporting has gained great prominence not only because of the increase of the legislation, but also due to the growing interest of different stakeholders. The actual business context involves corporate scandals (Hąbek & Wolniak, 2016) including corruption, financial fraud, child labour, negative environmental impacts, etc. Consequently, stakeholders such as governments, investors, shareholders, consumers, or local communities are increasing their demands. They demand that companies go beyond their legal obligations, take responsibility for their impacts, and increase transparency (Hąbek & Wolniak, 2016). One way to meet stakeholders' needs is by communicating through NFI reports (Martínez-Ferrero et al., 2016) the firm's social or environmental performance, for instance: how they deal with social inequalities, reduce their negative externalities, avoid workforce risks, etc. In a survey conducted in 2021 by EY (EY, 2021), it was found that 78% of the surveyed investors conduct a structured and methodical evaluation of ESG disclosures compared to 32% three years earlier.

Although there has been progress in terms of quality and extent of the reports, especially since the directives were enacted, there is still a long

way to improve. The relevance that sustainability reporting has nowadays for firms makes it a crucial object of study. The NFI reports still lack maturity when compared to the financial statements (EY, 2022). For example, as we can see in the study conducted by EY (2022) on the IBEX35 firms, the firms disclose information on all the aspects indicated by the law, however some of the aspects are poorly developed. The governance aspect, which is the most developed one, is rated with a 2.9 out of 5, but aspects such as employees or human rights are rated with a 1.9 and 1.7 out of 5 respectively. Furthermore, even though 94% of the N100 Spanish firms verify their report by an independent auditor, the report by KPMG (2020) shows that only 12% verified the full report, while 80% verified only some specific indicators. Also, the level of verification in 85% of the firms is the most limited one. The fact that the reports are only partially and limited verified could create doubts about the credibility of the reports. These studies bring to light the deficiencies in terms of quality and extension of the information provided in the reports.

Another problem involves the heterogeneity and incomparability of the NFI on the reports. This is due to different reasons: the existence of different reporting standards and measurements makes it difficult to compare the information between different firms (EY, 2022). As KPMG (2022) indicates “the diverse range of reporting standards currently used around the world makes comparison across companies and markets challenging. As the world attempts to collectively address issues such as climate change and inequality, it is increasingly important that we all speak the same way about sustainability.” (p. 23). Also, the law allows organizations to follow any of the available international reporting standards or guidelines, such as the Global Reporting Initiative (GRI), International Integrated Reporting (IR) Framework, the UN Global Compact, or the Sustainability Accounting Standards Board (SASB) Standards. “One of the major issues is the absence of a mandatory common standard framework” (Turzo et al., 2022, p. 9). This lack of a mandatory standard and the existence of multiple choices to follow by firms have been a major challenge for the comparability of the information. More consistent and comparable

information will be beneficial not only for external stakeholders, but for the firms themselves, as it will allow them to set targets, measure progress, benchmark and compete (KPMG, 2022).

To overcome these challenges, it requires efforts on all fronts: firms, by committing to disclose information; regulators by establishing clearer regulatory frameworks; and scholars by focusing research efforts to deepen the knowledge on which drivers help to improve the disclosure of NFI. We have seen that firms are already reporting, they are disclosing NFI, and due to recent regulatory changes, even more organizations will start disclosing soon. The question nowadays is not only if firms are disclosing or why; but the question is also how can firms improve the quality and extent of their reports. Research that focuses on what improves quality and quantity of the report is needed (Ali et al., 2017), as there is still a lot of progress to make in this matter.

1.2 OBJECTIVES OF THE DOCTORAL THESIS

The main objective of this doctoral dissertation is to deepen and advance the knowledge on the topic of NFI reports and the drivers for their improvement in terms of quantity and quality. To achieve it, we divide this general objective into more specific research questions.

The topic of our study can be considered relatively recent, and also it has experienced an exponential growth in the last decade (Grueso-Gala & Camisón, 2022). The vast number of new studies and the broad focus of CSR causes the generation of multiple terms to refer to the documents where companies issue information about their CSR actions, plans, results, etc. Some examples of the terms are: social report, environmental disclosure, CSR report, sustainability report, IR, corporate responsibility disclosure, or corporate governance report, among others. This number of different terms and the exponential growth of research made it difficult to evaluate the current state of the topic. Also, previous literature review studies (Erkens et al., 2015) indicate the need to provide a holistic view of the topic using

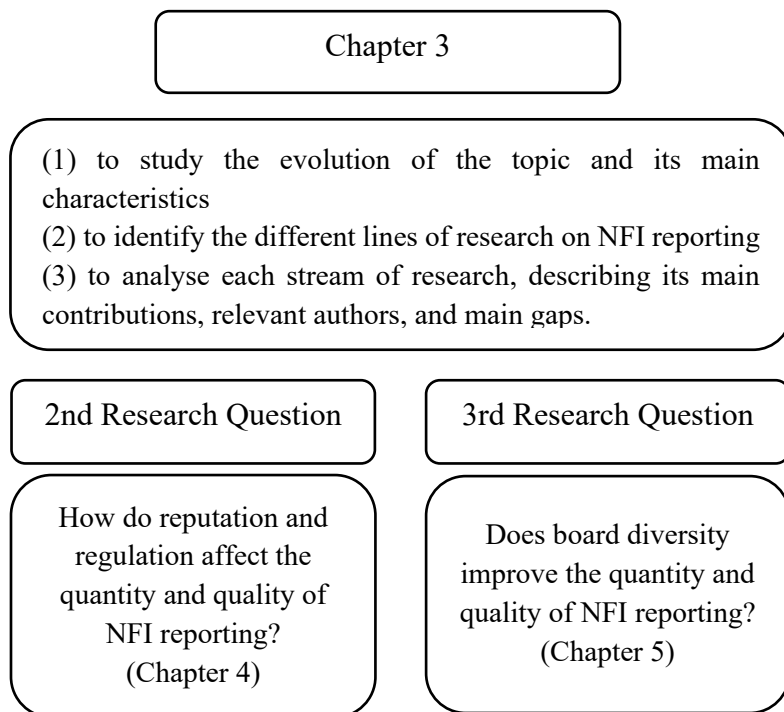
quantitative techniques. Hence, the objectives in chapter 3 are to study the evolution of the topic, and to structure the knowledge to be able to identify the different lines of research along with their main contributions and gaps.

From our bibliometric analysis we identify the need for deeper analysis on certain variables. The biggest research line (regarding the number of elements) is the study of the determinants of reporting. In previous literature reviews of the determinants of NFI reporting, we find that internal aspects such as size, profitability or industry have been more studied than external aspects (Ali et al., 2017; Fifka, 2013). Also, in our study we find that aspects such as regulation and reputation are not present in such cluster which means that they have not been largely studied. Therefore, this leads us to our first empirical study which is chapter 4, in which our objective is to determine which is the influence as a determinant of regulation and reputation on the firm's NFI report.

Finally, our last goal is to study which is the effect that the board composition has on NFI reports. Following previous authors that indicate that this relationship needs more attention (Cucari et al., 2018) we aim to deepen the knowledge on it, specifically we study three variables of the board of directors (BoD): independent, proprietary and women directors. Independent and women directors have been studied before, however they still present mixed results (Frias-Aceituno et al., 2013; Giannarakis, 2014). Finally, regarding proprietary directors, we have found very little empirical evidence on its impact on NFI reports. Thus, we also contribute by studying it.

In Figure 1.1 we can see a summary of the specific research questions of the dissertation, referred to each chapter.

Figure 1.1. Research questions of the thesis dissertation



Source: Own elaboration

1.3 METHODOLOGY

In this section we are going to describe the sample and the analysis techniques that we followed in the different chapters.

1.3.1 Sample

The sample of our study includes the firms that were part of the Ibex35 in the period 2015-2019. The Ibex35 is an index that comprises the 35 most liquid companies traded on the Spanish stock exchange. This index is the main reference of the Spanish stock market, and it is a representative of the Spanish economic development (Odriozola & Baraibar-Diez, 2017). The list of the firms included in the index is revised every 6 months, therefore the composition can change. Even

though some firms were part of the index for the whole period of our study, other ones were taken out of the index and new ones joined it. To increase our sample, we included all the firms that were part of the index, even for just one period. The total number of firms in our study is 40.

For the data collection we used different sources. All the information regarding the sector, size, and profitability was extracted from the ORBIS database. Then we downloaded all the reports (annual reports, sustainability reports or IR) that were available on the firms' webpages. Finally, we manually analysed them one by one to obtain the data that we needed for the study of the NFI reports.

In the next tables we can see some general descriptions of the sample. Regarding the sector, a great number of the firms belong to labour intensive industries, as we can see in Table 1.1.

Table 1.1. Sector distribution of the sample

Sector	N° of firms
Basic materials, industry, and building	12
Petroleum and energy	7
Financial services	7
Consumer services	5
Technology and telecommunications	4
Consumer goods	3
Real estate services	2

Source: Own elaboration

In Table 1.2 we can see some of the information that we extracted from the NFI reports for every year. The GRI reporting standards are followed by almost all the firms in each of the periods. There are other reporting standards or principles that firms also adhere to, however not as much as the GRI. For example, we can see that around half of the firms are adhered to the UN Global Compact, and also half of them disclose their NFI in an IR. There has also been an increase in the number of firms who have a specific CSR committee in the organization, reaching 24 firms in the last year; and on the number of

firms who have external assurance on their reports too, which are almost all of them in 2019.

Table 1.2. Evolution of NFI reports indicators

	GRI	UN Global Compact	AA1000	IR	Other standards	Assurance	CSR committee
2015	37	19	13	14	3	29	20
2017	39	22	16	19	4	34	20
2019	39	17	10	17	8	38	24

Source: Own elaboration

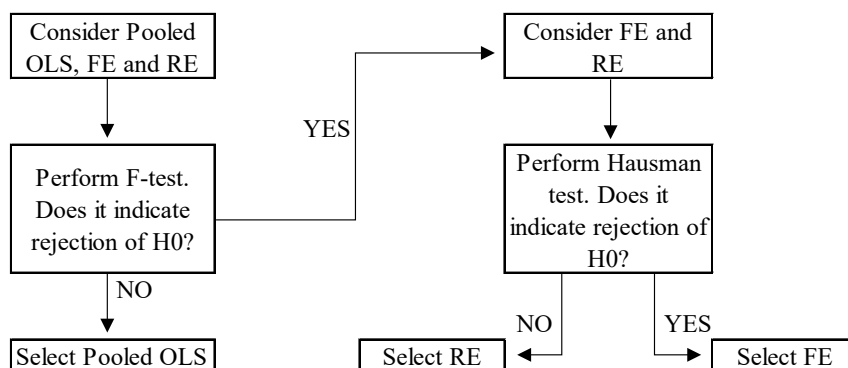
1.3.2 Techniques

In this thesis dissertation we employ different methodologies.

Chapter 3 includes the literature review, which was conducted with a bibliometric analysis. Bibliometric analyses are considered a quantitative method (Broadus, 1987), because they use statistical and mathematical tools to analyse data. The reason why we conducted a bibliometric study is because the advantages of this technique serve the purpose of our study. We wanted to map the topic, being able to identify the most relevant studies and authors, among other different characteristics; and also, to establish which are the lines of research on this topic up to date. This involves processing a large number of documents: first, because we wanted to include articles since the origin of the topic, which implies having an extensive period of study; and second, due to the exponential growth of studies on NFI reporting in the last decade. Therefore, it “would pose a major challenge if it were to be undertaken using traditional qualitative methods” (Sánchez-Riofrío et al., 2015, p.1922). The benefit of this method is that it can help to analyse a large amount of data, which in our case were 3113 documents. We performed different analyses such as co-authorship, co-occurrence, citation, bibliographic coupling, and co-citation. These analyses helped to pave the way to a better understanding of the knowledge on the topic.

In chapters 4 and 5 we employ panel data analysis techniques. Panel data consists of data that contains time series observations of a number of individuals. It involves two dimensions: a cross-sectional dimension, and a time series dimension. Collecting panel data is more costly than collecting time series or cross-sectional data, however, it also presents several advantages compared to them (Hsiao, 2007). It has greater capacity for capturing complexity, this means that it allows testing more complicated hypothesis. It also allows to control the impact of omitted variables because it contains information about the individuality of the entities and the intertemporal dynamics (Hsiao, 2007). Finally, among many other advantages, it provides more accurate inference of model parameters. In both chapters, first we report the descriptive and correlation analyses. Then, we estimate the regressions using three different methods of static panel data analysis: the Pooled OLS, Fixed Effects (FE) and Random Effects (RE). To select one method between the three of them we perform the Hausman test and the F-test. The selection procedure is shown in the next figure.

Figure 1.2. Selection procedure between OLS, FE and RE models



Source: Own elaboration

Finally, we also check different problems in the models. We check for autocorrelation issues with two tests: The Durbin-Watson (DW) and

the Wooldridge test; the heteroskedasticity is checked with the Breusch-Pagan test; and multicollinearity is tested by using the variance inflation factor (VIF) and tolerance.

1.4 STRUCTURE OF THE DISSERTATION

This dissertation is composed of 6 chapters. The first one, the current one, represents the general introduction. We present the topic, the motivations, the main objectives, and the methodology followed in our studies.

Then, we can differentiate two main blocks. The theoretical block, which is composed by chapter 2 and chapter 3; and the empirical part which are chapters 4 and 5.

In Chapter 2 we make a general introduction of the main theories found when studying NFI reporting. We make a brief explanation of the main concepts and perspectives of each one. In this chapter we don't connect the theories with our topic (NFI reporting), as this is something we will do as needed in each of the following chapters.

Chapter 3 comprises a bibliometric analysis of the literature on NFI reporting. We structure all the previous research on the topic and provide a map of its current state. The different streams of research and its main contributions are identified. Hence, we have knowledge of which are the most relevant authors, articles or institutions, among others, on the topic. This chapter has already been published as an article in an indexed peer-reviewed journal. However, due to limited space reasons, the journal version has been adapted and is slightly shorter. The reference to the publication is the following: Grueso-Gala, M., & Camisón Zornoza, C. (2022). A bibliometric analysis of the literature on non-financial information reporting: Review of the research and network visualization. *Cuadernos de Gestión*, 22(1), 175-192. <https://doi.org/10.5295/cdg.211545mg>

In chapter 4 we study which is the influence of the regulation and the reputation on the quality and quantity of NFI reporting. We introduce the recent regulatory changes and check how they affected the NFI reports; and we also clarify if there is any effect of the firm's reputation with the quantity and quality of the information disclosed.

In chapter 5 we can also find an empirical study. We check which is the relation between the BoD and the quantity and quality of NFI. Specifically, we study three aspects to see how the composition of the BoD affects the two dependent variables: the presence of independent directors, proprietary directors, and women directors.

Finally in chapter 6 we present the general conclusions of the dissertation. This chapter summarizes the findings, contributions, and implications of the previous studies. Finally, we also discuss some avenues for further research and limitations of our dissertation.

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CHAPTER 2: GENERAL THEORETICAL FRAMEWORK

Reputation, regulation and corporate governance as determinants of the improvement of NFI reporting

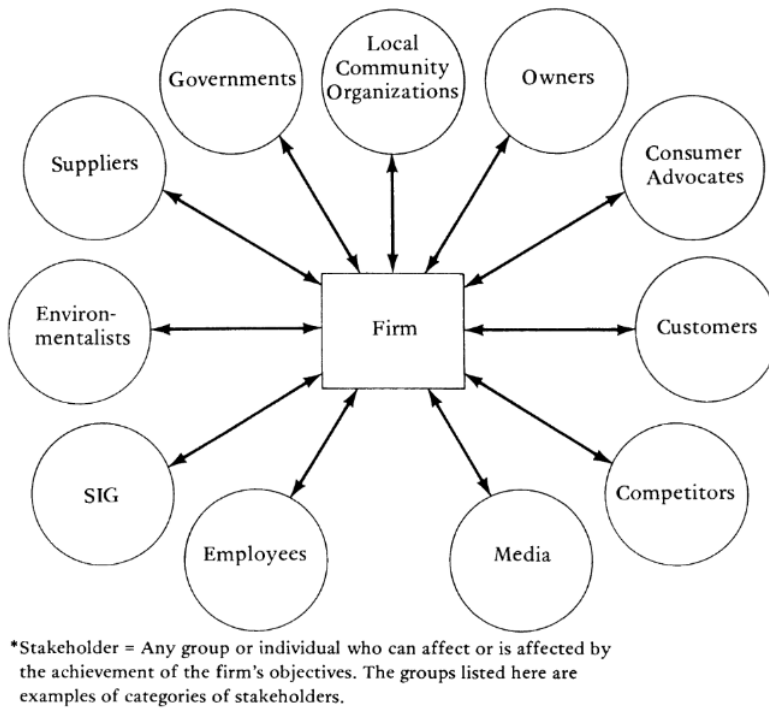
In this chapter we are going to introduce the theories that are repeatedly mentioned in the following chapters during our studies. This chapter will only be introductory and will not relate the theories to the topic of our studies. We don't intend to make a full exposition of these theories. Our intention with this section is to briefly explain the theoretical perspectives and their main concepts to be more familiar with them when we present them in the next chapters. The theories that we are going to present are: stakeholder theory, legitimacy theory, agency theory, signaling theory, and resource-based view (RBV) theory.

2.1 STAKEHOLDER THEORY

Stakeholder theory is a theory that was born in the mid-80s to counter the dominant view at that time of understanding business and management (Freeman et al., 2010). This theory tries to understand and manage the business in the modern world. In the past, organizations were simple, 'doing business' meant coordinating a few activities, corporations "were seen as the property of their owners [...] and as limited in their liability to their effects upon others" (Freeman et al., 2010, p.4). However, due to the development of several factors, firms became larger and more complex, and in result there was a separation of ownership and control, owners became more dispersed, and workers gained power.

To be successful, managers had to satisfy the owners, and the employees (Freeman, 2010). Originally it was only owners, employees, or suppliers, however more groups were interested in the corporation's activities: politicians, consumers, the media, etc. The emergence of numerous stakeholders to have into account required to rethink the traditional concept of the firm (Freeman, 2010). Stakeholders are understood as any individuals or group of individuals who can affect or is affected by the firm's activities (Freeman, 2010). In the next figure we can see the different categories of stakeholders.

Figure 2.1. Stakeholder view of the firm



Source: Freeman, 2010, p.25

The basic idea behind stakeholder theory is that the firm must understand the importance of the issues of each group, and their disposition to help or damage the corporation on these issues (Freeman, 2010). The firm must think of the effects on each stakeholder and elaborate processes to take these into account. “Managing for stakeholders involves attention to more than simply maximizing shareholder wealth. Attention to the interests and well-being of those who can assist or hinder the achievement of the organization’s objectives is the central admonition of the theory.” (Phillips et al., 2003, p.481). Corporations can no longer operate in today’s context

without managing their stakeholders' interests. Therefore, an effective manager is that who can create as much value as possible for stakeholders; and rethink the problems so that the interests of each of them can go together (Freeman et al., 2010).

2.2 LEGITIMACY THEORY

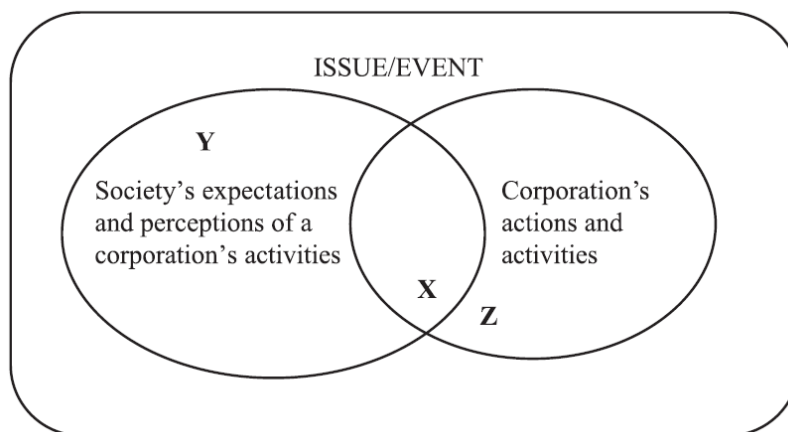
Legitimacy theory is based on the central concept of the social contract (Patten, 1992). It consists of an intangible agreement between organizations and society (O'Donovan, 2002). It implies that the survival or growth of the firm is based on how well the firm manages the continuous pressures from society's changing values (Burlea Schiopoiu & Popa, 2013). Changes in social values are a source of pressure for the firm in order to maintain their legitimacy. The first half of the 19th century "legitimacy was considered only in terms of economic performance. As long as a firm was successful (profitable), it was rewarded with legitimization. But during the 1960s and 1970s society's perceptions of business changed." (Patten, 1992, p.471). Society became aware of the negative consequences of corporate growth and started demanding organizations to answer for them.

The legitimacy of the organization is a status that exists when there is "congruence between the social values associated with or implied by their activities and the norms of acceptable behaviour in the larger social system of which they are a part" (Dowling & Pfeffer, 1975, p. 122). As indicated by Suchman (1995) "legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions." (p. 574).

As we can see in Figure 2.2, Y and Z represent the incongruence between society's values and firm's values and actions, in other words, they are legitimacy gaps. When there are differences between the two value systems, there is a threat to organizational legitimacy. This can lead to sanctions from society or even to the failure of the organisation (Burlea Schiopoiu & Popa, 2013). The aim of the firm is to maximize X, which is the area that represents legitimacy, in order to reduce the

legitimacy gap. The legitimation process consists of a series of strategies from the firm to obtain, maintain or repair the stakeholder's approval (Burlea Schiopoiu & Popa, 2013).

Figure 2.2. Corporate legitimacy



Source: O'Donovan, 2002, p. 347

2.3 AGENCY THEORY

Since firms became more complex and there was separation between ownership and management, the issues associated with agency problems emerged (Jensen & Meckling, 1976).

The agency relationship is the central concept of this theory. This relationship can be defined as a contract in which one person (the principal) engages another person (the agent) to do a task or service on the principal's behalf (Jensen & Meckling, 1976). The firm is seen as a "nexus for a set of contracting relationships among individuals" (Jensen & Meckling, 1976, p.310). The principal delegates authority on the agent, and "If both parties to the relationship are utility maximizers there is good reason to believe that the agent will not always act in the best interests of the principal" (Jensen & Meckling,

1976, p.308). In other words, each party is motivated by their own self-interest (Fama, 1980). This is where the agency problem can occur.

The agency problems occurs when the two parties have different goals, and it is costly for the principal to verify the agent's performance (Eisenhardt, 1989). This leads to agency costs, which are costs derived from the contractual arrangements between the owners and the managers of the firm (Jensen & Meckling, 1976). To ensure that the agent will act in the best interest of the principal, the latter can stablish incentives to the agent. The main objective of this theory is to determine the most efficient contract between the principal and the agent (Eisenhardt, 1989).

2.4 SIGNALING THEORY

Signaling theory is focused mainly on reducing information asymmetries between two parties (Spence, 2002). It is a useful theory that studies contexts where the two parties have access to different information. It focuses on how one party (the sender) must choose if and how to communicate (signal) the information to the other party (the receiver) (Connelly et al., 2011).

One of the main concepts of this theory are information asymmetries. Decision-making processes are influenced by the information possessed by the decider. This means that individuals make the decisions based on the information that they have. However, sometimes information is private, and different people know different information (Connelly et al., 2011; Stiglitz, 2000). This presents the concept of information asymmetry.

According to this theory, the sender or signaller is the insider that has access to the information that is not available for outsiders and that they would find useful. The information can be about an individual, products, or about the organization (Connelly et al., 2011). This private information, which can be positive or negative, gives the insiders a privileged perspective. As Connelly et al. (2011) indicate "signaling

theory focuses primarily on the deliberate communication of positive information in an effort to convey positive organizational attributes” (p. 44).

There are two main characteristics of the signals: signal observability, which means if the signal is observable by the outsiders; and the signal cost. Some signalers are in a better position than others to absorb the signal’s associated costs. Connelly et al. (2011) provided an example of this: for obtaining the ISO900 certification, it will be easier for a high-quality manufacturer than for a low-quality manufacturer. This is because the low-quality manufacturer, will have to make more changes to obtain the certification. The costs for this signal (the ISO9000 certification) are high because it is time-consuming, and it is difficult to cheat. Accordingly, signaling theory suggests that the signal cost must be structured to discourage dishonest signals (Connelly et al., 2011).

All in all, this theory provides a perspective on problems of selection under conditions of imperfect information and tries to understand how parties solve information asymmetries.

2.5 RBV THEORY

This theory arises during 1980s to shift the focus from the industry to the firm as a determinant of the firm’s profitability (Brahma & Chakraborty, 2011). Traditional models grounded in industrial organization economics or Porter’s five-forces framework (Porter, 1980) argued that firm’s performance is determined by the industry attractiveness. It integrates the Structure-Conduct-Performance model, which postulates that the market structure is a determinant of the firm’s conduct, which in turn determines performance. In other words, the firm’s conduct is defined by the attributes of the industry in which it operates. These frameworks assume, first, that all the firm’s from the same industry are identical regarding the strategically relevant resources they control; and second, that in case that there are differences in the resources within an industry, this heterogeneity will last a short time because resources are highly mobile from one firm to

another (Barney, 1991). Evidence from different studies criticises these frameworks because they are not capable of explaining the different profitability levels between firms in the same industry (Powell, 1996). Here is where a new approach emerges: the RBV.

The RBV offers a framework for analysing inter-firm variations in performance (Lockett et al., 2009). The RBV links the performance with the firm's internal characteristics (Barney, 1991). Penrose (1959) describes firms as a collection of resources and indicates that their heterogeneity is what gives the firm its unique character. It is found by many authors (Powell, 1996) that "it is the firm-level factors and not the industry factors that explain greater variance in firm's profitability" (Brahma & Chakraborty, 2011, p.8).

Contrary to the assumptions made by industrial economics, this theory assumes that there may be heterogeneity with respect to the resources controlled by the firms within an industry; and that resources may not be perfectly mobile, hence the heterogeneity can be long lasting (Barney, 1991). This new approach focuses on the firm's resources and capabilities as the sources of competitive advantages. In his seminal work, Barney (1991) indicates which conditions are needed to build a sustainable competitive advantage, based on the implications of the two previous assumptions. First, to be considered a source of competitive advantage the resources must be valuable (they allow the firms to conceive or implement strategies) and rare (not possessed by a large number of competing firms). Furthermore, in order to be a sustained competitive advantage, they also need to be inimitable (the firms that don't possess the resources cannot obtain them) and non-substitutable (there must be no equivalent resources to implement the same strategy).

According to the framework, managers need to remember that "sustainable competitive advantage does not necessarily be the outcome of operating in a high opportunity and low threat environment, but also depends on the existence and exploitation of the firm's resources and capabilities" (Brahma & Chakraborty, 2011, p.15).

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Reputation, regulation and corporate governance as determinants of the improvement of NFI reporting

Suchman, M. C. (1995). Managing Legitimacy: Strategic and Institutional Approaches. *The Academy of Management Review*, 20(3), 571–610. <https://doi.org/10.2307/258788>

**CHAPTER 3: A BIBLIOMETRIC
ANALYSIS OF THE
LITERATURE ON NFI
REPORTING: REVIEW OF THE
RESEARCH AND NETWORK
VISUALIZATION**

Reputation, regulation and corporate governance as determinants of the improvement of NFI reporting

3.1 INTRODUCTION

In recent decades, we have seen the emergence of certain trends stemming from the need for society as a whole to move towards sustainable development. CSR is how companies contribute to sustainable development. Companies are no longer just trying to maximize their profits for the benefit of shareholders, but are also pursuing other goals. CSR comprises a broad set of actions in the economic, environmental, and social spheres. Nowadays, more and more companies are carrying out actions in these areas.

Many national and international organizations (European Parliament, 2014; General Assembly of the United Nations, 2012) point out the importance of companies communicating their CSR actions to all their stakeholders, although the related reports and the information they contain have changed over the years. The disclosure of CSR actions is becoming increasingly important. Not only do businesses have to respect the environment or improve current social conditions, they also have to convey this to stakeholders. There is growing collective concern about labour conditions, as well as social and environmental issues, with a corresponding rise in the demand for CSR actions (Reverte, 2009). Therefore, companies must not only carry out the actions, but also report them in order for interest groups to find out how their concerns are addressed by companies. Fifka (2013) explains that in the 1970s, businesses began to disclose some information about quality and social aspects in the annual report and in stand-alone reports. In the 1980s, empirical research on these voluntary disclosures started to emerge. In the 1990s, the focus of businesses and researchers was on environmental reports, but in the new millennium the social and environmental aspects were merged to form NFI reports.

Due to the broad focus of CSR, there are a number of different terms (Cho & Patten, 2007; Erkens et al., 2015; Sierra-Garcia et al., 2018) that refer to the documents where companies disclose their NFI, such as sustainability report or CSR report, among others (see Table 3.1). We believe that the term NFI encompasses the type of information

disclosed in the aforementioned reports. Accordingly, in the present study, we use the term NFI reporting to refer to all such reporting. We adopt the definition provided by Erkens et al. (2015), who present clear explanations and examples of what is understood by the term NFI. According to Erkens et al. (2015), there are two related academic approaches to NFI. The first and most commonly-used one focuses on the type of information disclosed. Under this approach, NFI reports seek to cover aspects such as CSR, strategy, corporate governance, and so on. They also reflect different measures of performance other than the traditional financial ones, such as job satisfaction, employee training and turnover, or customer satisfaction. The second approach focuses on where the information is disclosed. This approach interprets NFI as all the information disclosed outside (e.g., website, press releases, conferences, etc.) the traditional channel of communication (i.e., the annual report), even when it includes financial information. Erkens et al. (2015) elaborate on both aspects to provide a comprehensive definition of NFI. According to the authors NFI can be understood as “disclosure provided to outsiders of the organization on dimensions of performance other than the traditional assessment of financial performance from the shareholders and debt-holders’ viewpoint” (Erkens et al., 2015, p.25). This includes aspects such as social and environmental matters, CSR and intellectual capital. It may be published either in a stand-alone report or in the company’s annual report, but is always released outside the main financial statements (i.e., the balance sheet, the income statement, the statement of cash flows, the statement of changes in stockholders’ equity and the notes). For instance, some forms of intellectual capital that are recognized in the accounts, such as R&D expenditure, would be considered financial information, while other forms, such as human capital, would be NFI.

Unlike financial information, there is no clear regulation of NFI reports governing aspects such as the rules they must follow, whether they should be assured, what content should be included, etc. This generates a degree of confusion among practitioners and researchers. To help address these issues, different international initiatives have emerged proposing guidelines. These include the UN Global Compact; the

Global Reporting Initiative (GRI), which created the first global standards for reporting; or the International IR Council, which also created another type of corporate reporting. Governments have also committed to this challenge and are taking part by gradually introducing new laws, such as the EU Directive 2014/95/EU (European Parliament, 2014), which encourages companies to present NFI. Due to this directive, each Member State is also adapting their legislation (Sierra-Garcia et al., 2018) to regulate which companies must disclose NFI.

These new challenges and the related regulatory changes have led to a growing literature on this topic. Many researchers have been attracted to conducting studies on the topic due to the increasing relevance of NFI for businesses.

NFI reporting can be considered a relatively new academic topic. As we see in the analyses conducted in the following sections, the first related article was published in 1970. Interest grew very slowly at first, with fewer than five publications per year. It was not until 2003 that the number of publications on the topic started to grow exponentially. There has been less than 20 years of intense growth in related research articles, which is a short time compared to other management/economic/finance topics. For instance, the academic field focusing on the concept of strategy first emerged in the early 1960s, and has grown rapidly since (Ronda-Pupo & Guerras-Martín, 2012).

The recent exponential growth in the literature about NFI reporting is leading to the generation of unstructured knowledge. Little is known about the structure and extent of research in this academic field. Previous qualitative reviews, such as those by W. Ali et al. (2017), Dumay et al. (2016) or Fifka (2013) among others; offer some insights into specific aspects of the topic. However, Erkens et al. (2015), who analyse 33 review articles on the topic, point out that none of them are broad studies, meaning that they don't provide a holistic overview of the topic. Also, only a few of these reviews include tables, statistics or use bibliometrics. Qualitative reviews are indispensable for revealing the state of the art and discussing future developments; however, in

terms of the method applied, they present various other problems (Vogel & Güttel, 2013). They often suffer from subjectivity and are inherently biased. Moreover, the rapidly increasing number of publications on this topic exceeds the researcher's individual capacity to process a high quantity of information.

It is difficult to keep track of how the research field is evolving using only qualitative reviews. In order to be able to map the topic and provide a broad overview, there is a need for a complementary analysis that allows researchers to identify the structure underpinning all the knowledge generated to date on this subject.

Therefore, the objectives of the present study are: (1) to study the evolution of the topic and its main characteristics, namely, relevant authors, or most cited articles; (2) to identify the different lines of research on NFI reporting; and (3) to analyse each stream of research, describing its main contributions, relevant authors and main gaps.

A popular method for this purpose is bibliometric analysis. Bibliometric analyses use statistical and mathematical tools to analyse data and can be used in any discipline. This method also allows researchers to work with large samples of articles, which is useful for our purpose, as we aim to establish the structure of an entire topic and will thus have to manage a large number of articles. Furthermore, bibliometric analysis reveals interrelations among publications and provides researchers with information for organizing current contributions and detecting new lines for future research (F. A. F. Ferreira, 2018; Merigó & Yang, 2017; Vogel & Güttel, 2013). While this method cannot provide the same level of detail as a qualitative review, it is a good complementary analysis as it enables the researcher to analyse a larger number of documents and provide information from a broader perspective. The use of visualization software for bibliometric studies (in this study, the VOSviewer program) facilitates the interpretation of the information provided by the different statistical analyses carried out.

We found only two previous English-language bibliometric analyses related to NFI reporting: Erkens et al. (2015) and Fusco & Ricci (2019). Fusco and Ricci (2019) provide the structure of the literature on social and environmental accounting in the public sector: specifically, they focus on why, how and to whom public organizations report. This review is focused on the public sector and leaves out the private sector, thus omitting relevant issues concerning private sector organizations. Erkens et al. (2015) produce the first broad bibliometric analysis on the topic of NFI reporting, attempting to answer the key question: ‘what is NFI?’ They provide a definition of what is considered NFI, which is the one we adopt in our study and use to draw up the list of keywords for our search strategy. However, we believe their analysis needs to be further developed in order to provide researchers with more useful and more detailed information.

Their article covers 787 publications from 1973 to 2013. However, from 2013 until 2019, the most recent year included in our analysis, 2232 articles were published, representing 71.7% of our sample. This is large number of publications that should be included. Accordingly, one of our main contributions is providing a more up-to-date analysis in a field that is growing exponentially.

We also believe that the sample in the paper by Erkens et al. (2015) omits many potential articles because of the journals and search terms they use. They primarily search for data from accounting journals. They identified a total of 60 journals, of which 49 were accounting journals, compared to 6 “specialized” journals and 5 management journals; they then searched for NFI articles published in those journals. In our study, we control for the categories of the journals we want to search in (see methodology section for more details), but we do not specify the journals in advance, as this might lead to valuable journals being missed and a reduction in the number of articles in the sample. For instance, our analysis indicates that management is the category of journals that contributes the most articles, whereas according to Erkens et al. (2015) this is the least represented one.

In our opinion, the search terms could also be improved in order to better capture the articles on the topic. Erkens et al. (2015) used a total of 14 terms, compared to the 26 combined terms resulting from our set of keywords, as shown in Table 3.1.

Furthermore, our sample is not restricted to articles, so it does not leave out other types of contributions such as books or chapters; an omission which has been identified as a limitation in other studies (Fusco & Ricci, 2019).

The structure of the topic provided by Erkens et al. (2015) needs to be further developed in order to be more useful for researchers. The authors analysed the article's title, abstract and keywords in their sample manually (without the use of any software) and listed a total of 10 research topics in the field of NFI. These topics are tested to see if they are statistically related to a specific methodology or journal type. However, the authors provide no description of and no insightful comments about the most relevant contributions in each one, leaving researchers with incomplete information about each of the topics identified.

Erkens et al. (2015) also exclude the analysis of references (citations and co-citations) from their study. This is indicated as a limitation in their article, as the analysis of citations (which we use in our study) can reveal important information about relationships among publications, authors, and so on.

These findings confirm the need for a broad, up-to-date bibliometric analysis that can structure all the previous literature on the topic and add valuable knowledge to previous reviews.

Our research analyses 3113 documents from 1970 to 2019. We collected data from the Web of Science (WoS) and used the VOSviewer software to graphically display the data. We employed tools such as keyword co-occurrence or bibliographic coupling. To the best of our knowledge, this is the first study on the topic of NFI reporting that combines a bibliometric analysis with the graphical visualization of the results.

The present study contributes to the literature on NFI reporting by structuring all the previous research and revealing the existence of six research lines. It also provides useful information about relevant contributions, authors or journals, and avenues for future research. This study is relevant because “having a map of the conceptual framework of a discipline can be of great interest in the pursuit of a holistic view of a field of study, improving our understanding of relationships between paradigms and the most analysed topics and, thus, identifying essential work still to be done” (J. J. M. Ferreira et al., 2016, p. 727).

This study is useful to researchers in many ways. Junior researchers often find it hard to identify the main areas of research on a topic and the most relevant authors and articles in each research line. This study can help by providing them with this information for use in planning their research. Senior researchers can also benefit from a deeper understanding of how the field has evolved, more recent research lines, avenues for future research or how network collaborations among countries and organizations influence research.

Practitioners will also find it helpful to see the structure of the topic. It will facilitate the access to knowledge about any specific issue, which in turn can be applied to improve managerial practices regarding what and how to report, standards to follow, the relevance of external assurance, etc. Authorities will be able to better identify issues that may warrant regulation.

In the next section, we describe the methods and data that we used. Section 3 contains the results of the bibliometric analysis. In Section 4 we analyse the identified lines of research, and in Section 5 we find the discussion and outline the main conclusions.

3.2 METHODOLOGY AND DATA

For our analysis we collected data from the WoS Core Collection, which is an internationally-recognized source adhering to the highest standards. This database is commonly preferred in bibliometric studies

(Bartolacci et al., 2020; Garrigos-Simon et al., 2018; Gaviria-Marín et al., 2019; Mura et al., 2018; Seguí-Amortegui et al., 2019; Zhang et al., 2019) as it includes more than 15,000 of the most relevant journals and contains more than 50,000,000 classified documents (Merigó & Yang, 2017). It also provides all kind of useful metadata for these types of studies, such as titles, keywords, abstracts, references, authors, journals and citations, among others (Gaviria-Marín et al., 2019)

Due to the fact that authors use different terms when publishing about NFI reporting (Erkens et al., 2015; Fifka, 2013; Sierra-García et al., 2018) and that our aim is to capture and synthesise the research conducted over time in this topic, we have drawn up two sets of keywords. These words were selected manually from the literature and represent the most commonly-used terms referring to NFI reports. Table 3.1 shows the two sets of keywords:

Table 3.1. Sets of keywords used in our research

Set 1	Set 2
Non-financial information	Disclosure
Non-financial	Report*
Social	
Social responsibility	
Environment*	
Sustainab*	
CSR	
Corporate social responsibility	
Corporate social	
Corporate responsibility	
Corporate governance	
Corporate sustainability	
Integrated	

We use the symbol * to include all the possible endings of a word, for example report* includes “report”, “reports”, “reporting” etc.

Source: own elaboration

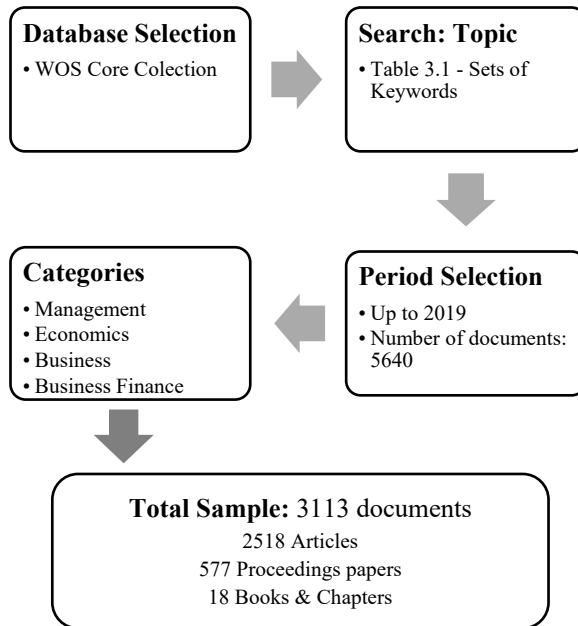
The two sets of keywords were combined in order to obtain all the possible terms that comprise our object of study. This gave us a total of 26 combinations that we entered into the field “topic” in WoS, which searches the title, abstract, and keywords of all the documents in the database.

The retrieval was done in October 2020, and it included all documents up to 2019, which was the last full year that we could obtain. The documents were filtered by categories including “Management”, “Economics”, “Business” and “Business finance”. In total, 3113 documents have been included in our sample, with the following distribution: 1431 articles published in a journal classified in the “Management” research area, 1269 in “Business”, 1189 in “Business Finance”, and 538 in “Economics”. These numbers do not sum up to 3113 because some journals can be classified in more than one research area.

Apart from articles, we also include in our sample other types of documents such as proceedings papers, books and book chapters. We consider them a significant part of the literature, containing relevant contributions. Fusco & Ricci (2019) identified the omission of these document types as a limitation of their bibliometric study; thus, we considered it appropriate to include them here.

The following diagram depicts the sample selection process.

Figure 3.1. Sample selection process



Source: own elaboration

For the bibliometric analysis, we used the program VOSviewer 1.6.14. This software builds two-dimensional maps based on mathematical algorithms. It is used in other bibliometric studies (Bartolacci et al., 2020; Castillo-Vergara et al., 2018; Garrigos-Simon et al., 2018; Seguí-Amortegui et al., 2019) because it provides especially useful graphical representations with maps based on network data (Castillo-Vergara et al., 2018). It can show the structure and networks of different types of items such as authors, references, keywords, journals, organizations and countries; and through different types of links including co-authorship, co-occurrence, citation, bibliographic coupling and co-citation. Following previous studies (Garrigos-Simon et al., 2018; Seguí-Amortegui et al., 2019), we thus display in the next section keyword co-occurrence, bibliographic coupling of references and authors, co-citation of authors, and co-authorship of organizations and countries.

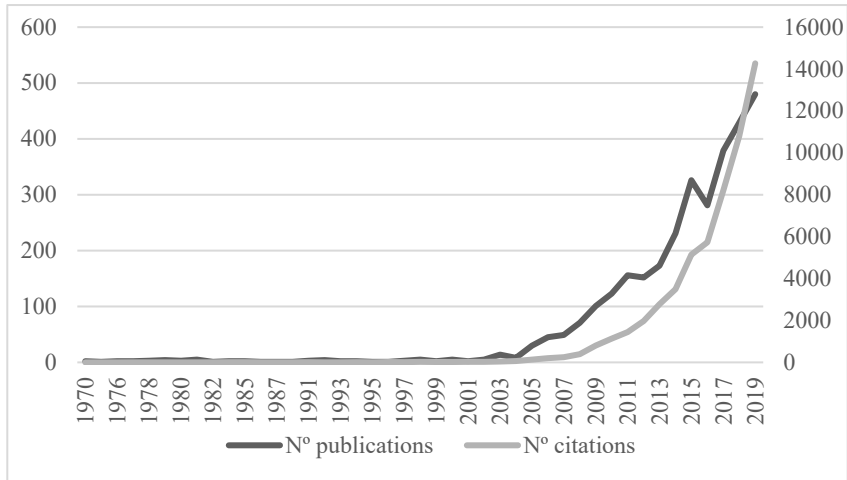
3.3 RESULTS

To obtain the most relevant information about the topic, we performed several analyses. For a general view of the evolution of NFI reporting, we start in subsection 3.3.1 by displaying information on the number of published papers, citations per year and per article. Secondly, we focus on the most cited articles, and in the third subsection we comment on the most relevant journals, authors, and countries. The following subsections analyse the different maps created by VOSviewer, which start with a keyword co-occurrence analysis, followed by bibliographic coupling of references and authors, co-citation of authors, and finally a co-authorship analysis of organizations and countries.

3.3.1 Evolution of NFI reporting

In 1970 the first two articles related to NFI reporting were published in WoS. Over the next 32 years, from 1970 to 2002, there was limited research on this topic, with fewer than five publications per year. Nevertheless, these numbers started to rise sharply in 2003, and particularly after 2009, when more than 100 papers were published annually. This increased to more than 200 in 2014, 300 in 2015, 400 in 2018, reaching almost 500 in 2019. The total number of articles is 3113, of which 90% were published in the last 10 years. We can see in Figure 3.2 that researchers' interest in the topic has grown vertiginously over the last decade.

Figure 3.2. Annual publications and citations in WoS on NFI reporting



Source: Own elaboration based on data from WoS 2020. The dark line shows the number of publications per year in WoS on the topic; the light line indicates the annual citations. The axis on the left corresponds to the publications, and the axis on the right to citations.

Regarding citations, the 3113 articles have a total of 57078 citations. The average number of citations is 18.34 per paper, but if we look at the h-index provided by WoS, which is an interesting and a more comprehensive metric (Blanco-Mesa et al., 2017; Garrigos-Simon et al., 2018), we can see that it is 111. This means that there are 111 articles with at least 111 citations. By way of comparison, a topic like Tourism Sustainability has an h-index of 28 (Garrigos-Simon et al., 2018). The advantage of this metric is that it does not take into account the weight of papers that are highly cited nor papers that have not yet been cited (Hirsch, 2005). We can see in Figure 3.2 that the number of citations has grown exponentially with the number of published articles.

Table 3.2. Citation structure in NFI reporting

N° of citations	N° of articles	Accumulated n° of articles	% Articles	% Accumulated articles
>500	8	8	0,3%	0,3%
<500	19	27	1%	1%
<250	103	130	3%	4%
<100	178	308	6%	10%
<50	277	585	9%	19%
<25	468	1053	15%	34%
<10	349	1402	11%	45%
<5	1711	3113	55%	100%
Total	3113			

Source: Own elaboration based on data from WoS 2020

We can also see the importance of the different articles by looking at Table 3.2. This table shows us a more detailed picture of the distribution of the cited articles. More than half of the articles (55%) have fewer than five citations. Approximately 10% of the articles have at least 100 citations, and there are eight papers with more than 500 citations. In the next section, we take a closer look at the top articles in this field.

3.3.2 Most cited articles on NFI reporting

This section aims to reveal the most relevant articles published, with the most citations. The number of citations is an indicator of the quality and influence of a paper (Blanco-Mesa et al., 2017; Garrigos-Simon et al., 2018). We can see this information about the top 20 articles displayed in Table 3.3.

There are two variables that indicate the influence of an article: the total number of citations and the citations per year. If we look at the total number of citations, the top paper has 926 citations, the second one has 868, and the third one has 769. The top two articles, published by Elkington (1994) and Ullmann (1985), make a theoretical contribution; they are not empirical investigations. This means that these articles have enjoyed wide acceptance and have been used for

many years by researchers as a framework for their publications. The third most cited article, published by Roberts (1992), is an empirical research paper based on the framework proposed by Ullmann (1985). However, if we look at their citations per year (37, 25.5 and 28.5, respectively) we see that they are not the top papers in this regard. This may be due to the fact that they were published more than 20 years ago, between 1985 and 1994.

Turning to the top articles in terms of citations per year, we find that these were published much more recently than the top three publications mentioned above. The top three articles by number of citations per year are Dhaliwal, Li, Tsang, & Yang (2011) with 88 citations per year, followed by Clarkson, Li, Richardson, & Vasvari (2008) with 66.5, and then Marquis & Qian (2014) with 61.2.

To conclude the analysis of this section, we can see that some authors have more than one article in the top 20 ranking by number of citations: Patten, D.M. with three articles; and Dhaliwal, D.S., Tsang, A., and Yang, Y.G, each with two articles. This is relevant because these authors have managed to make an impact by having more than one article in the top papers of the field.

Table 3.3. Top 20 articles with highest number of citations

R	NC	Title	J	Authors	Year	CY	Main outcomes
1	926	Towards the Sustainable Corporation: Win-Win-Win Business Strategies for Sustainable Development	CMR	Elkington, J.	1994	37	Pressures, strategies, and disclosures for sustainable development
2	868	Data in Search of a Theory: A Critical Examination of the Relationship Among Social Performance, Social Disclosure and Economic Performance of U.S. Firms	AMR	Ullmann, AA.	1985	25.5	A theoretical framework is proposed to improve empirical research. Focus on social disclosure and performance
3	769	Determinants of corporate social-responsibility disclosure: An application of stakeholder theory	AOS	Roberts, R.W.	1992	28.5	Stakeholder theory framework (Ullman, AA., 1985) as a determinant of CSR disclosure
4	731	Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis	AOS	Clarkson, P.M.; Li, Y.; Richardson, G.D.; Vasvari, F.P.	2008	66.5	Environmental performance as a determinant of the level of voluntary environmental disclosure
5	704	Voluntary Nonfinancial Disclosure and the Cost of Equity Capital: The Initiation of Corporate Social Responsibility Reporting	AR	Dhaliwal, D.S.; Li, O.Z.; Tsang, A.; Yang, Y.G.	2011	88	Economic consequences of CSR reporting
6	645	Managing Public Impressions: Environmental Disclosures in Annual Reports	AOS	Neu, D.; Warsame, H.; Pedwell, K.	1998	30.7	Stakeholder pressures as determinants of environmental disclosures

7	643	The relations among environmental disclosures, environmental performance, and economic performance: a simultaneous equations approach	AOS	Al-Tuwaijri, S.A.; Christensen, T.E.; Hughes, K.E.	2004	42.9	Good environmental performance is associated with good economic performance
8	566	The role of environmental disclosures as tools of legitimacy: A research note	AOS	Cho, C.H.; Patten, D.M.	2007	47.2	Environmental disclosure as a legitimizing tool
9	477	The relation between environmental performance and environmental disclosure: a research note	AOS	Patten, D.M.	2002	28.1	The level of disclosure in the environmental report is affected by the firm's environmental performance
10	427	Exposure, legitimacy, and social disclosure	JAPP	Patten, D.M.	1991	15.3	Public pressure as a determinant of social disclosure
11	410	Corporate Communication and Impression Management - New Perspectives Why Companies Engage in Corporate Social Reporting	JBE	Hooghiemstra, R.	2000	21.6	Use of corporate social reporting as a corporate communication instrument to gain legitimacy
12	383	Assurance on Sustainability Reports: An International Comparison	AR	Simnett, R.; Vanstraelen, A.; Chua, W.F.	2009	38.3	Voluntary assurance of sustainability disclosure to enhance credibility
13	383	Social Accountability and Corporate Greenwashing	JBE	Laufer, W.S.	2003	23.9	Problems and challenges in ensuring fair and accurate information on reports
14	365	Corporate disclosures by family firms	JAЕ	A.; Chen, T.Y.; Radhakrishnan, S.	2007	30.4	Type of information disclosed by family firms due to ownership and management characteristics
15	365	The impact of corporate characteristics on social-responsibility disclosure: A typology and frequency-based analysis	AOS	Cowen, S.S.; Ferreri, L.B.; Parker, L.D.	1987	11.4	Correlation of firm characteristics and types of disclosure

16	362	Nonfinancial Disclosure and Analyst Forecast Accuracy: International Evidence on Corporate Social Responsibility Disclosure	AR	Dhaliwal, D.S.; Radhakrishnan, S.; Tsang, A.; Yang, Y.G.	2012	51.7	Economic consequences of non-financial reporting
17	355	Is accounting for sustainability actually accounting for sustainability ... and how would we know? An exploration of narratives of organisations and the planet	AOS	Gray, R.	2010	39.4	Examination of the term "sustainability" from an accounting perspective
18	339	Determinants of Corporate Social Responsibility Disclosure Ratings by Spanish Listed Firms	JBE	Reverte, C.	2009	33.9	Firm characteristics as determinants of CSR reports
19	329	Getting to the Bottom of "Triple Bottom Line"	BEQ	Norman, W.; MacDonald, C.	2004	21.9	Critical review of "triple bottom line" paradigm
20	306	Corporate Social Responsibility Reporting in China: Symbol or Substance?	OS	Marquis, C.; Qian, C.L.	2014	61.2	Firms' dependence on the government affects CSR report

Source: Own elaboration based on data from WoS 2020. R: Ranking; NC: Number of Citations; J: Journal; CY: Citations per Year; CMR: California Management Review; AMR: Academy of Management Review; AOS: Accounting Organizations and Society; AR: Accounting Review; JAPP: Journal of Accounting and Public Policy; JBE: Journal of Business Ethics; JAE: Journal of Accounting and Economics; BEQ: Business Ethics Quarterly; OS: Organization Science

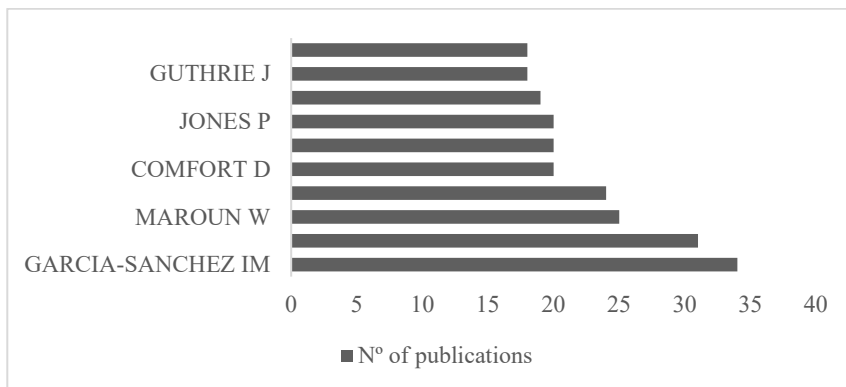
3.3.3 Leading authors, journals and countries

In this section, we analyse the top authors, journals and countries by number of publications in order to gain an understanding of the most influential participants in the field of NFI reporting.

According to Figure 3.3, the author that has contributed the most publications in this field is Garcia-Sanchez, I.M. with 34 articles, representing 1.09% of the total. She is followed very closely by Patten, D.M with 31 publications (1% of the total). In the previous section, we reported that this author had three publications in the top 20 most cited articles. In third and fourth place are Maroun, W. with 25 articles, and De Villers, C. with 24. Comfort, D.; Hillier, D.; and Jones, P. come next with 20 publications.

The top 10 authors displayed in Figure 3.3 represent 7.35% of all the publications in the field, with a total of 229 published articles.

Figure 3.3. Publications by author

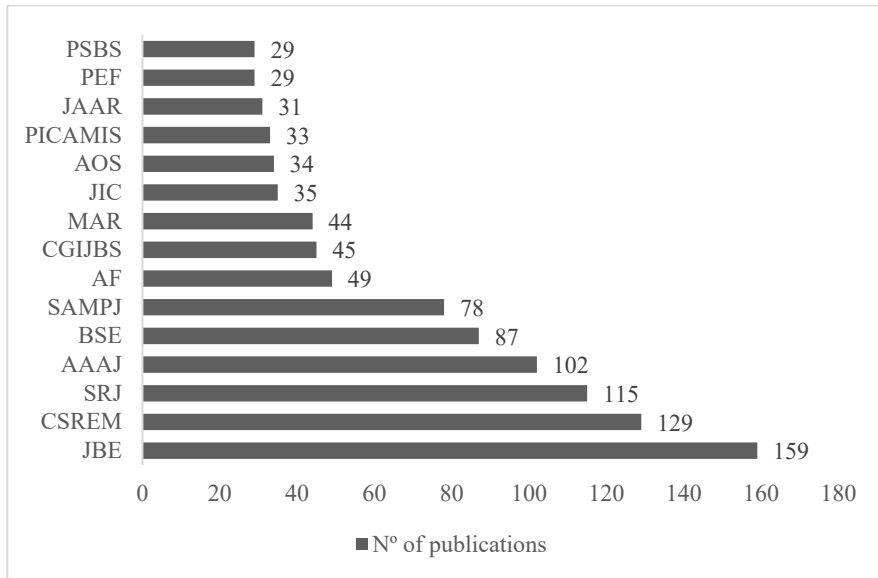


Source: Own elaboration based on data from WoS 2020

Figure 3.4 shows the journals that publish the highest number of papers, with six journals standing out from the others. The first one is Journal of Business Ethics with 159 articles, representing 5.10% of the total. Corporate Social Responsibility and Environmental Management is the second one with 129 publications, followed by Social Responsibility Journal (115 publications), Accounting Auditing Accountability Journal (102 publications), Business Strategy and The

Environment (87 publications), and Sustainability Accounting Management and Policy Journal (78 publications). These six journals represent 21.52% of the total articles published.

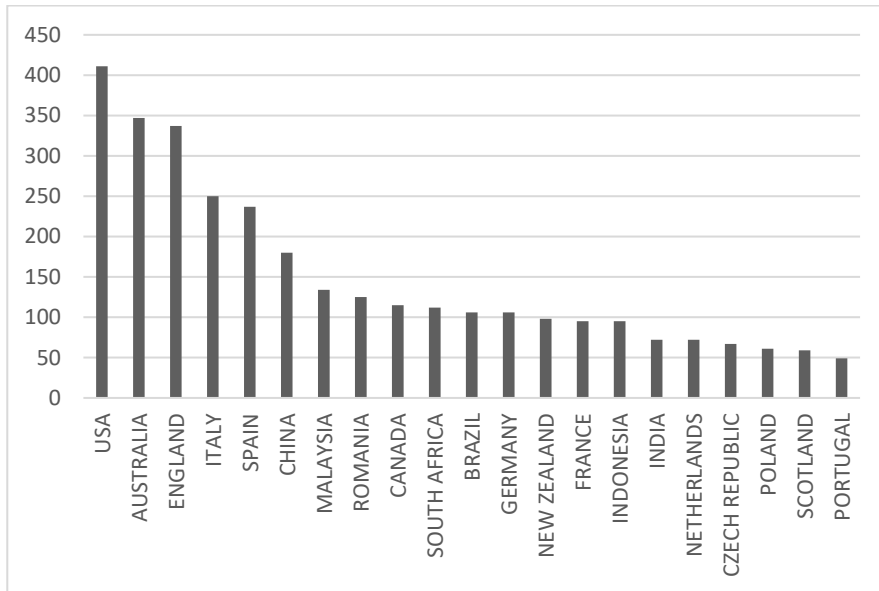
Figure 3.4. Publications by journal



Source: Own elaboration based on data from WoS 2020. JBE: Journal of Business Ethics; CSREM: Corporate Social Responsibility and Environmental Management; SRJ: Social Responsibility Journal; AAAJ: Accounting Auditing Accountability Journal; BSE: Business Strategy and The Environment; SAMPJ: Sustainability Accounting Management and Policy Journal; AF: Accounting Forum; CGIJBS: Corporate Governance The International Journal of Business in Society; MAR: Meditari Accountancy Research; JIC: Journal of Intellectual Capital; AOS: Accounting Organizations and Society; PICAMIS: Proceedings of the International Conference Accounting and Management Information Systems; JAAR: Journal of Applied Accounting Research; PEF: Procedia Economics and Finance; PSBS: Procedia Social and Behavioural Sciences.

There are 100 countries that have contributed to the creation of the 3113 articles that form the NFI reporting literature. The top countries are the USA with 411 articles, Australia with 347, and England, Italy and Spain with 337, 250 and 237, respectively.

Figure 3.5. Publications by country



Source: Own elaboration based on data from WoS 2020.

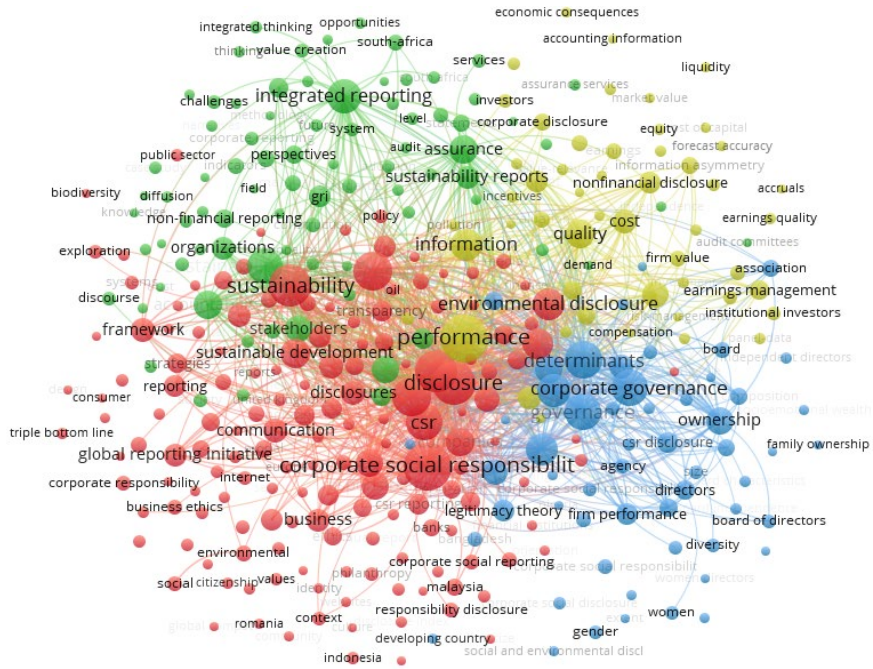
3.3.4 Keyword co-occurrence analysis

Keyword co-occurrence analysis is frequently used in bibliometric studies (Dolhey, 2019; Garrigos-Simon et al., 2018; Gaviria-Marin et al., 2019; Olczyk, 2016; Seguí-Amortegui et al., 2019). This analysis shows us the most frequent keywords and the relations between them (keywords that appear together in the same article), with the resulting image displaying a bird's-eye view of the literature's research areas that have developed so far.

We consider all keywords for this analysis, which means that we take into consideration not only author keywords but also Keywords Plus. Author keywords are the terms that each author adds to their own article, which are often repeated terms from the title, while Keywords Plus are generated by WoS through an algorithm that extracts the terms from the titles of an article's references, but which do not appear in the title of the article itself (Garfield, 1990; Li et al., 2009). In this way, a greater number of relevant papers are retrieved (Garfield, 1990).

In Figure 3.6 below we can identify different nodes, each of which is a keyword. The size of the node determines the importance of a keyword (a large size means that the keyword is repeated more times). The relation between the nodes - the number of articles in which the linked keywords appear together - is shown by the distance and the size of the line that connects them (shorter distance and thicker lines mean a strong relationship).

Figure 3.6. Keyword co-occurrence



Source: Own elaboration based on data from WoS 2020. Considering 10 occurrences, the figure shows 349 of the 6001 existing keywords.

As we can see in Figure 3.6, the program created four clusters:

The blue cluster comprises 56 keywords, of which “determinants” is one of the most important, with 332 occurrences. With this cluster we can identify one of the research lines on NFI reporting. Determinants are the precursors or drivers of a certain practice, in this case of NFI reporting. Items such as “ownership” and “governance” are included in this cluster, which means that these variables have frequently been

used when studying “determinants”. We also find in Figure 3.6 other related aspects such as duality of the CEO, board diversity or gender. The most widely-used theories in articles on the determinants of NFI reporting are agency, legitimacy, socioemotional wealth, and stakeholder theories.

The yellow cluster is made up of 51 elements. “Performance” is the most notable item with 616 occurrences. In this cluster there is a wide range of financial terms (“economic consequences”, “liquidity”, “market value”, “equity”, “growth”, “investors”, “returns”, etc).

The first two clusters analysed are the ones that have the fewest keywords; thus, they are more specific and homogeneous when identifying a research line. The following clusters, red and green, are bigger (159 and 83 keywords, respectively) and it may be harder to establish a clear difference between them. Both clusters display a set of keywords related to reporting: for example, the red cluster contains “disclosure”, “csr reporting”, “responsibility disclosure” and “annual report”, among others; while in the green cluster, we find “integrated reporting”, “corporate reporting”, “non-financial reporting”, “sustainability reporting”, “GRI”, etc. Although we find these similar terms in both, the difference between the clusters can be identified in the other set of keywords that accompany them.

In the red cluster, publications about NFI reports are related to “corporate social responsibility”, “social”, “environmental”, “sustainable development”, “business ethics”, “values” and “philanthropy” among others. These keywords indicate the background of NFI reporting practices. As the terms themselves indicate, they reflect the values that the organization has, their ethics, their commitment to society and the environment, etc. For instance, no organization that seeks to contribute to the environment or society, or that aims to disclose NFI to their stakeholders, lacks these values or ethical background. Thus, we call this the ‘essence’ cluster, because these terms refer to the inseparable condition underlying such practices: from the company’s initial motivation to contribute to

sustainable development, to the culmination of the process of issuing NFI reports.

In the green cluster, the terms that appear suggest a line of research focused on reporting practices, the different existing models of reporting (for example “integrated reporting”), and other related issues such as “assurance”, “challenges”, “perspectives”, or “diffusion” among others. These terms focus not on the determinants of reporting, nor its consequences, but on aspects specifically involved in the NFI reports as an object of study.

3.3.5 Bibliographic coupling of references and authors

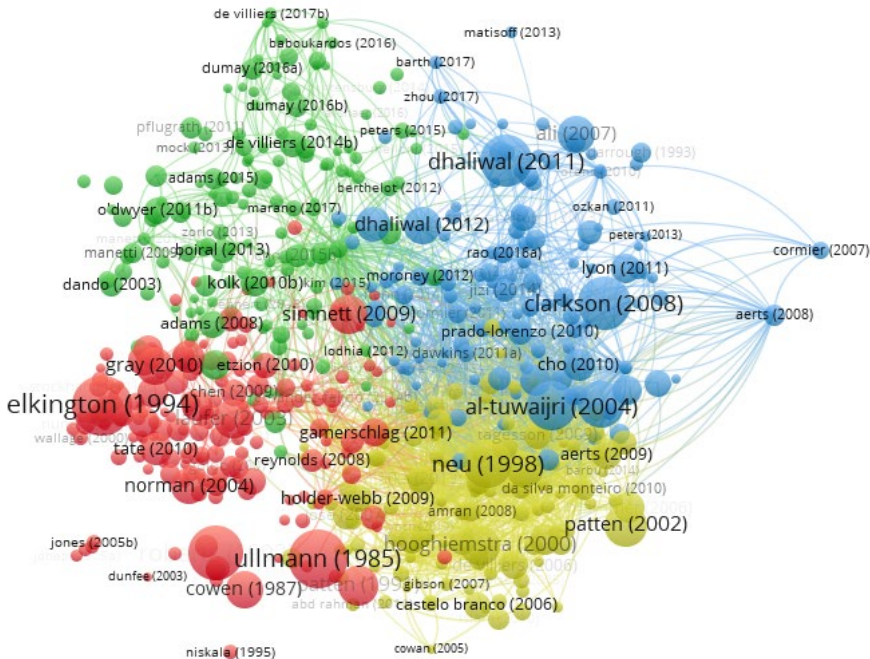
Bibliographic coupling is a type of citation analysis that assumes that two articles are similar when they cite the same references (Bartolacci et al., 2020). We chose to use this analysis because, as Vogel & Güttel (2013) explain, bibliographic coupling is useful for studying the “newstreams” in academia, which is important in order to set the agenda for new investigations. The distance between the nodes and the clusters shows us the networks created by the citation structure. This allows us to identify or confirm the streams of research on NFI reporting.

We have already presented in Table 3.3 the most cited articles. The present analysis helped us to corroborate the research lines identified in the keyword analysis, and identify which articles belong to each of the clusters. In Figure 3.7, we can identify these articles by the size of the nodes: the bigger the node, the more citations the article has. Such articles are present in the blue, yellow and red clusters, but there are none in the green cluster. This is due to the fact that this cluster is mostly made up of articles published in the last decade and have not yet been able to accumulate citations. This means that this cluster represents a fairly recent stream of research that is becoming popular among researchers. If we look at the articles belonging to this cluster, most of them focus on assurance (Cohen & Simnett, 2015; Dando & Swift, 2003; Kolk & Perego, 2010; O’Dwyer et al., 2011; Perego & Kolk, 2012) and specific types of report, especially IR (Adams, 2015;

Reputation, regulation and corporate governance as determinants of the improvement of NFI reporting

Brown & Dillard, 2014; de Villiers et al., 2014; Dumay et al., 2016). This result is in line with our findings from the keyword analysis.

Figure 3.7. Bibliographic coupling of references



Source: Own elaboration based on data from WoS 2020. Considering a minimum number of 25 citations, the figure shows 575 of the 3113 existing documents

The degree of overlap between references determines the link strength in bibliographic coupling (Vogel & Güttel, 2013). Thus, the items with the highest link strength are review articles, because they contain a high number of references and they have many similarities with other articles. The article with the highest link strength in our analysis is by Fifka (2013). This article, located in the yellow cluster, is a review of empirical articles about the determinants of corporate responsibility reporting. Considering that the software organizes similar articles by cluster, we can establish that the yellow cluster is a group of publications mostly about the determinants of reporting, for instance (Hooghiemstra, 2000; Neu, Warsame, & Pedwell, 1998; Patten, 2002).

Some of the most cited articles found in the blue cluster are Al-Tuwaijri, Christensen, & Hughes (2004), Dhaliwal et al. (2011), and Dhaliwal, Radhakrishnan, Tsang, & Yang (2012). We saw in Table 3.3 that these articles are focused on studying the economic consequences of NFI reporting. Therefore, we can establish that this cluster follows the same line of research as they share similar references. However, there is another highly cited article (Clarkson et al., 2008) that belongs to this cluster but studies environmental performance as a determinant of environmental disclosure.

The red cluster also combines literature from different research lines. Given the most cited articles in this cluster (Elkington, 1994; Gray, 2010; Laufer, 2003; Norman & MacDonald, 2004; Ullmann, 1985), we can state that it is a group belonging to the 'essence' stream of research. That said, it also includes some articles studying the determinants, for instance Cowen, Ferreri, & Parker (1987), Patten (1991) or Roberts (1992).

We have also studied the bibliographic coupling of authors. We use the same method for grouping items as in Figure 3.7, but this time each node represents an author. The groups of authors that appear together in the same cluster are related because they frequently cite the same references. In other words, they have similar research interests. Once we have the groups of authors, we can analyse their research interests and see if they correspond to one of the research lines we have already identified or if we have uncovered a new one. This analysis is also useful for identifying relevant authors that might specialize in one of the streams of research. The program detects four clusters, which we can see displayed in Figure 3.8.

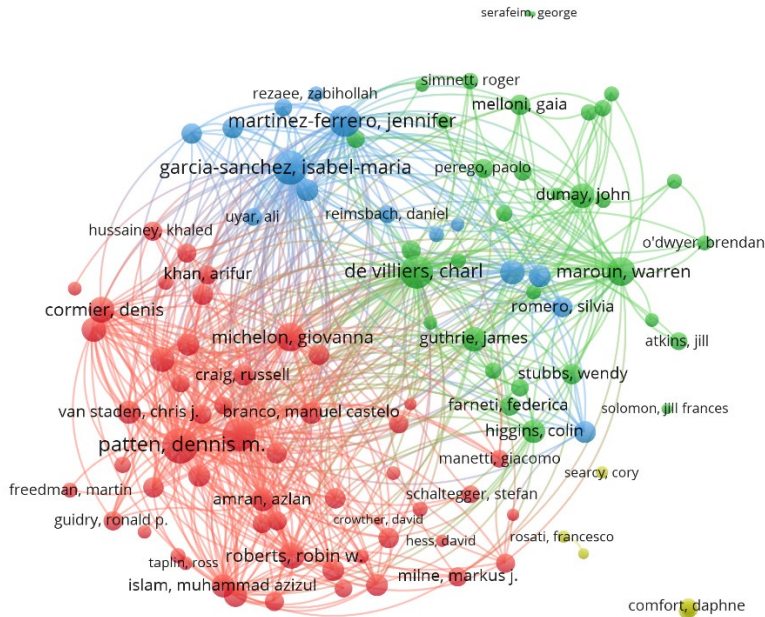
The red cluster comprises 53 items. The two authors that have the highest link strength are Patten, D.M. and Cho, C.H. Looking at their publications, we find that their research specifically concerns the environment. Thus, we can say that this cluster represents a group of authors that have focused on studying NFI reporting with an environmental approach, including for example environmental disclosures and environmental performance.

The green cluster comprises 33 authors. The biggest nodes are De Villers, C., Maroun, W. and Dumay, J. Their research aims to study different aspects of IR. This is in line with our previous results indicating that one of the research lines is about types of NFI reporting. This analysis confirms that there is a growing body of authors studying this specific type of report, which marks it as a new research line.

The blue cluster includes 15 authors. This group of authors is led by Garcia-Sanchez, I.M. whose research varies from determinants to IR, or assurance matters; Martinez-Ferrero, J., who studies the consequences of reporting, IR and also assurance; and Fernandez-Feijoo, B., who also focuses on assurance, IR and determinants. We can conclude that there is a group of authors that study the different research streams of NFI reporting that we found in the keyword analysis.

There is also a residual cluster comprising six items. We can see in Figure 3.7 that they are quite far away from the other items. Looking at the most notable authors of the cluster, — Comfort, D., Jones, P. and Hillier, D.—we find that their research is very specific, for instance they focus on the UK, and specific industries including hospitality, construction, retailers, etc.

Figure 3.8. Bibliographic coupling of authors



Source: Own elaboration based on data from WoS 2020. Considering a minimum number of 50 citations and 5 documents of an author, the figure shows 107 of the existing 5165

3.3.6 Authors co-citation analysis

Another type of citation analysis is co-citation. This analysis examines when two items are cited together in a reference list of a paper and is a good complementary analysis to bibliographic coupling, as it offers another perspective of the subject's relatedness (Garrigos-Simon et al., 2018; Seguí-Amortegui et al., 2019; Vogel & Güttel, 2013). In this section, we analyse the authors and sources co-citation network.

Figure 3.9 shows the authors network, where the size of each item indicates the number of citations, while a shorter distance between items means a higher frequency of appearing together in a references list.

The red cluster, with 79 authors, confirms one of the streams that we found in the bibliographic analysis. The research in this cluster is focused on studying types of report, but specifically IR. Authors such

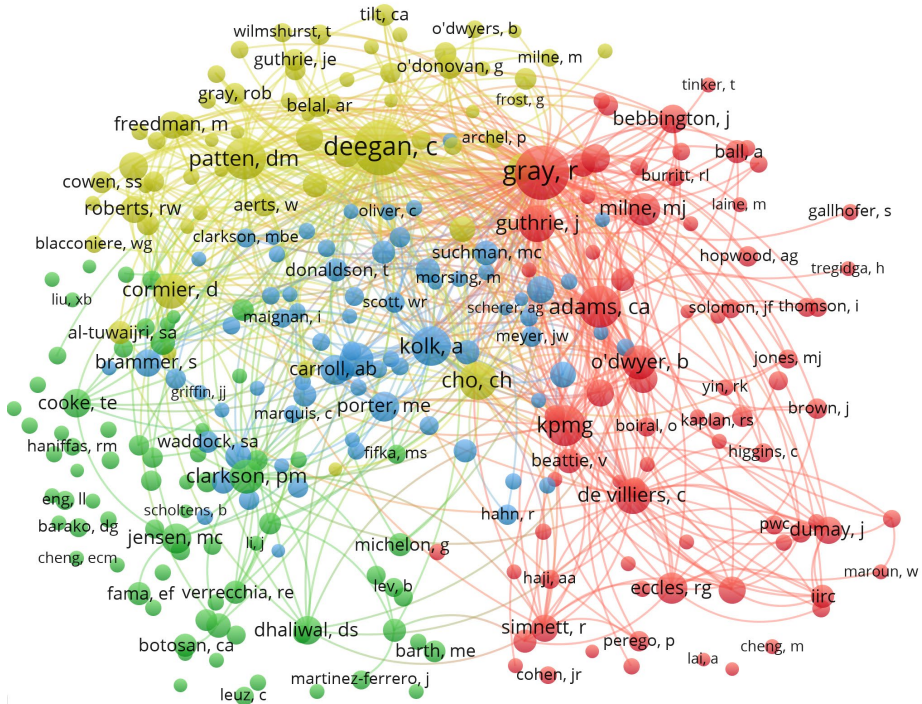
as Gray, R., Adams, C.A., Guthrie, J. and De Villers, C. can be found in this cluster.

The yellow cluster has 63 items. This cluster includes authors such as Deegan, C., Patten, D.M. and Cho, C.H., whose research follows an environmental approach.

The following clusters are multidisciplinary, although we can see some similarities between the research of different authors. The green cluster comprises 75 authors, led by Clarkson, P.M., whose work focuses on environmental performance and reporting. The contribution of Jensen, M.C. is mainly financial. His best known publication is about agency theory, property rights and finance, while Dhaliwal, D.S. focuses on financial consequences/effects of reporting.

Finally, the blue cluster, with 73 items, groups authors such as Kolk, A., who has made contributions to different streams of NFI reporting research, including determinants, assurance aspects and types of reports; Freeman, R.E., who focuses on stakeholder theory; and Carroll, A.B., who highlights aspects such as CSR, ethics, and moral matters.

The co-citation analysis, as a complementary analysis to bibliographic coupling, confirmed two streams—environmental and IR—and also added two multidisciplinary clusters, with a financial approach and an essence/stakeholder approach.

Figure 3.9. Author co-citation

Source: Own elaboration based on data from WoS 2020. Considering a minimum number of 70 citations, the figure shows 290 of the 42968 authors that exist

3.3.7 Countries and organizations co-authorship analysis

We finish our research on NFI reporting with the co-authorship analysis. This analysis is useful for displaying the collaboration networks on the topic. In this section, we see how the different countries and organizations work together. As in previous analyses, the size of the node indicates the importance of that item (in this case number of publications), while the distance reflects the degree of collaboration. The number of publications for each country is indicated by WoS based on the addresses that appear in each article. All addresses are considered, not just the first one listed. If there are multiple addresses for the same country in an article, they only count as one address.

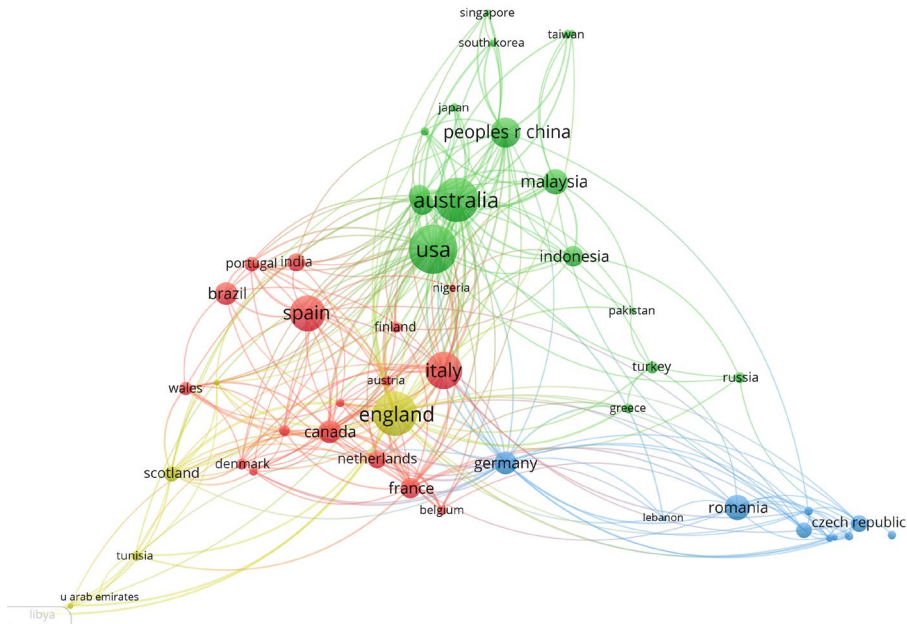
Starting with the country analysis, according to the total link strength, England is the country that collaborates the most with other countries when publishing about NFI reporting.

The program created four clusters that we can see in Figure 3.10. The red cluster, with some exceptions, consists of European countries: Portugal, Spain, Italy, Denmark, France, Belgium, Netherlands, and Austria, among others. If we look at the distance between the items, the red cluster is the one located in the centre of the map, leaving the others marking three corners of a triangle. This means that these specific countries (in the red cluster) collaborate not only with the countries in their cluster, but also with the ones from outside.

In the green cluster, where we find the USA and Australia as the top publishing nations, we also find a group of countries that belong to the East Asian and Southeast Asian region: Singapore, South Korea, Taiwan, Japan, Bangladesh, China, Malaysia, and Indonesia. These countries are found close to each other, which means that they have a network of collaboration.

The blue and the yellow clusters also have small groups of countries belonging to the same region with a strong relationship of collaboration. In the yellow cluster we find Libya, Egypt, the Arab Emirates and Tunisia, which are all Arab countries. In the blue cluster, there is a group from Eastern Europe: the Czech Republic, Lithuania, Poland, Croatia, Slovakia, Ukraine, Romania and Estonia. These nodes are not big compared to others, but they show strong collaboration between them. It is worth noting that although most of these are European countries, they are located quite far from the red cluster, which represents the centre of the map. This means that there is no or little collaboration between Eastern Europe and other European countries.

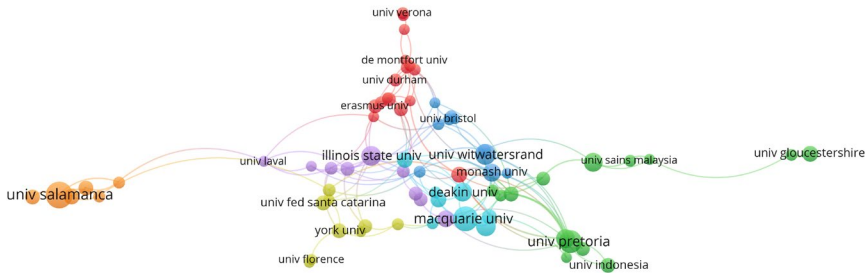
Figure 3.10. Co-authorship network of countries



Source: Own elaboration based on data from WoS 2020. Considering a minimum number of 10 documents, the figure shows 51 of the 101 countries

Regarding the co-authorship analysis of organizations, we find in Figure 3.11 that the top ones by number of published documents are Bucharest University of Economic Studies in Romania with 60, University of Salamanca in Spain with 50, Macquarie University in Australia with 43, and University of Pretoria in South Africa with 37 documents. However, the total link strength indicates that the ones that collaborate most with other organizations are University of Auckland, University of Pretoria, and Illinois State University.

Figure 3.11. Co-authorship network of organizations



Source: Own elaboration based on data from WoS 2020. Considering a minimum number of 10 documents, the figure shows 73 of the 2117 organizations that exist

There are several clusters, most of them occupying the centre of the map. The different clusters are made up of organizations from diverse countries. We find collaborations between organizations from New Zealand (Auckland University of Technology, University of Auckland, University of Waikato); Australia (Australian National University, University of South Australia), and Malaysia (Universiti Teknologi MARA, Universiti Sains Malaysia, University of Malaya) in the green cluster.

Other clusters show that organizations from England and the USA also collaborate: for instance, Illinois State University, University of Central Florida, University of Exeter and University of Reading, among others.

It is noteworthy that the only cluster with organizations all from the same country is the orange one. This cluster consists of six universities: University of Granada, University of Salamanca, University of Valencia, University of Zaragoza, University Jaume I, and University of the Basque Country, all of which are located in Spain. This means that these organizations strongly collaborate with one another, but the distance from the other items indicates that they engage in little collaboration with other organizations from outside the country.

3.4 LINES OF RESEARCH ON THE TOPIC OF NFI

In light of the results from the analyses carried out, we identified six different research lines within the topic of NFI reporting. The first four groups emerged from the keyword co-occurrence analysis. Thanks to the bibliographic coupling of references, we could identify which articles belong to each one of them, allowing us to understand the interactions among researchers within the different research lines. The bibliographic coupling of authors revealed two more specific research streams on the topic. The six research lines identified are:

1. The ‘essence’ cluster. (Keywords: corporate social responsibility, social, environmental, sustainable development, triple bottom line, business ethics, values, and philanthropy, among others). The keywords that the cluster includes refer to the terms associated with the beginning of CSR, a practice necessarily linked to NFI reporting. The end of the last century saw the emergence of new perspective that businesses’ responsibility goes beyond economic profit to include concepts such as business ethics, values or sustainable development. We labelled this research line the ‘essence’ because no organization that seeks to protect the environment or disclose NFI information to their stakeholders lacks these values or ethical incentive. It refers to the inseparable condition underlying such practices: from the company’s initial motivation to contribute to sustainable development, to the culmination of the process of issuing NFI reports.

This research line includes articles such as that by Elkington (1994), who highlights a business awakening on CSR and describes the stages that organizations move through (ignorance, awakening, denial) until they finally accept their responsibility (conversion and integration). The article points out the increasing pressures that businesses face, and states that they must play a central role in sustainable development. There is also a section dedicated to environmental disclosure, where the author remarks that “Business leaders must now get actively involved in defining and managing the process of environmental communications” (Elkington, 1994, p.97). This group also includes

articles addressing the complex relationship between stakeholder engagement and corporate responsibility (Greenwood, 2007); or the triple bottom line paradigm, which holds that the success of businesses should be measured by their financial, social and environmental performance (Norman & MacDonald, 2004).

2. The ‘determinants’ cluster. (Keywords: determinants, ownership, board of directors, diversity, gender, women, CEO duality, agency, SEW, stakeholder, legitimacy). The keywords of this cluster refer to the study of the determinants of NFI reporting practices. Keywords such as “ownership”, “directors”, “governance”, or “diversity” are included, which means that these variables have frequently been used when studying “determinants”.

Articles from the top 20 most cited papers that belong to this research line are A. Ali et al. (2007), Reverte (2009) or Roberts (1992), to mention a few. In the bibliographic coupling analysis, we can identify articles that have also contributed to this cluster. The paper with the highest link strength is by Fifka (2013), which is a review of empirical articles about the determinants of corporate responsibility reporting. The paper examines a total of 186 studies, providing a classification of determinants by geographical region/countries. The general conclusions drawn are that internal factors have been studied more extensively than external factors. The internal factors that are shown to have a very strong impact on reporting are size, industry, financial performance and, above all, managerial attitudes. In terms of external factors, country-related elements (general political and socio-economic environment) also have a major impact on reporting practices.

This cluster also includes a more recent review article (W. Ali et al., 2017), which includes 76 empirical papers and a classification by geographical region, in this case between developed and developing countries. The authors indicate that for both, developed and developing countries, “company characteristics such as company size, industry sector, profitability, and corporate governance mechanisms predominantly appear to drive the CSR reporting agenda” (W. Ali et

al., 2017, p.289). In developing countries, international stakeholders (international media, foreign investors, etc.) have the most influence, while in developed countries it is the shareholders, creditors, investors, environmentalists and the media.

The keyword analysis also provides us with information regarding the application of theories. The most widely-used theories when researching determinants of NFI reporting are: agency (Vander Bauwhede & Willekens, 2008), legitimacy (Fernandez-Feijoo et al., 2018), socioemotional wealth (Arena & Michelon, 2018; Cabeza-García et al., 2017), and stakeholder theories (García-Sánchez et al., 2019; Konrad et al., 2006; Torelli et al., 2020). Other theories that we found in the literature, but which do not appear in the keyword analysis are institutional theory (Fernandez-Feijoo et al., 2019; Garcia-Sanchez et al., 2016) and signalling theory (García-Benau et al., 2013). We also found that authors frequently use more than one theory, considering the different theories as complementary, to provide a more complete framework (Adel et al., 2019; Fusco & Ricci, 2019; Martínez-Ferrero et al., 2015; Odriozola & Baraibar-Diez, 2017; Reverte, 2009; Romero et al., 2018).

3. The ‘reports’ cluster. (Keywords: non-financial reporting, gri, integrated reporting, sustainability reports, perspectives, challenges, diffusion, assurance, discourse, etc.). The terms that appear suggest a line of research focused on reporting practices, the different existing models of reporting (for example “integrated reporting” or “gri”), and other related issues such as “assurance”, “challenges”, “perspectives”, or “diffusion” among others. These terms focus not on the determinants of reporting, nor its consequences, but on aspects specifically involved in the NFI reports as an object of study. As we can see in the bibliographic coupling of references, the articles that belong to this cluster are not highly cited (indicated by the size of the nodes). This is due to the fact that this cluster is mostly made up of articles published in the last decade and have not yet been able to accumulate citations. This means that this cluster represents a fairly recent stream of research

that is becoming popular (indicated by the number of occurrences in Figure 3.6) among researchers.

NFI can be found in different locations and formats. The locations represent the vehicle through which it is transmitted to stakeholders. Generally, it can be found in the annual report outside the main financial statements, or in a separate report on the company's website. As we can see in Figure 3.6, special attention is given to the existing formats of reporting. There are different models or frameworks that organize how information should be disclosed, which aspects should be included, etc. The most well-known and widely used are the GRI and the IR.

If we look at the articles belonging to this cluster, most of them focus on assurance (Cohen & Simnett, 2015; Dando & Swift, 2003; Kolk & Perego, 2010; O'Dwyer et al., 2011; Perego & Kolk, 2012; Simnett et al., 2009) and specific types of report, especially IR (Adams, 2015; Brown & Dillard, 2014; de Villiers et al., 2014, 2017; Dumay et al., 2016).

The disclosure of CSR information by organizations is not always met with trust from readers. Assurance of CSR reports is one way to gain credibility and legitimacy (Dando & Swift, 2003; O'Dwyer et al., 2011). Some authors (Cohen & Simnett, 2015) mention the differences between the audit of financial statements and the assurance of CSR, and indicate areas which can benefit from further research; for instance, risk identification, materiality, ability to identify misstatements and fraud, evidence collection, and assurance reports and communication. We also find empirical articles that show how assurance practices are adopted (Perego & Kolk, 2012), the determinants of such practices (Kolk & Perego, 2010; Simnett et al., 2009) or the role of stakeholders in assurance processes in terms of being consulted and involved (Manetti, 2012).

Regarding IR, the literature focuses on IR measurement issues, control variables, or the challenges that this recent type of report has to

overcome. As IR is also considered an independent research line, we will discuss it in more depth in the next point below.

4. The ‘IR’ cluster. There are no keywords to show in this cluster because it was not identified in the keyword co-occurrence analysis, but in the author co-citation and bibliographic coupling analyses. The analyses revealed the existence of a relevant group of authors, such as de Villiers, C., or Dumay, J., who specialise in publishing articles about the new reporting framework, IR.

Dumay et al. (2016) indicates that the IR initiative is still in its very early stages, and there needs to be a debate about harmonization. The authors discuss the gap between academics and practitioners, suggesting the creation of international communities of leaders, practitioners, and policy-makers. They indicate that in order to improve, lessons about facilitating debates, improving international collaborations and harmonization have to be learnt from the GRI project (an older, successful framework for NFI reporting). Dumay, Bernardi, Guthrie, & Torre (2017) point out the barriers to implementing the IR framework, such as the lack of regulation and the existence of other relevant reporting frameworks. Also, there is a need for more specific metrics in IR. Despite these barriers, the authors also highlight the flexibility of the report, which can easily be adapted to comply with the EU Directive on non-financial disclosure (2014/95/EU).

De Villiers et al. (2014) suggest further research on the internal aspects of IR and propose a list of research questions for further research about the internal processes of the practice of IR. Measurement issues and control variables for research on IR are also noted by de Villiers et al. (2017).

5. The ‘consequences’ cluster. (Keywords: performance, economic consequences, liquidity, market value, equity, growth, investors, returns, etc). We can see that when studying “performance” as the consequences of reporting, the main aim is to assess the economic impact, as there is a wide range of financial terms included. Many

authors seek to establish whether the sustainability performance of an organization has any impact on economic variables such as the cost of equity, market value, or returns (Barth et al., 2017; Gao et al., 2016; Miras-Rodríguez et al., 2015). The relationship between reporting practices and the cost of equity capital has been widely studied (Dhaliwal et al., 2011; Orens et al., 2010; Reverte, 2012). However, a meta-analytic review (Souissi & Khelif, 2012) shows that there are inconclusive empirical results on this relationship. The authors emphasize the importance of the legal and institutional environment (high disclosure environment versus low disclosure environment) when analysing the relationship between the aforementioned variables. In low disclosure environments (such as China, Spain, France and Sweden) investors tend to carefully consider the disclosure information for investing, while in high disclosure environments (USA, Canada, UK) investors already have sufficient information to make the decisions. Thus, there is a more significant negative relationship between NFI reporting and the cost of equity in low disclosure environments. In line with this finding, the association between reporting practices and the cost of debt capital also varies across institutional environments, with a significant negative relationship found in Continental European firms (Orens et al., 2010). The economic consequences of IR are also specifically studied, with the results indicating that IR has a positive relationship with liquidity and expected future cash flows (Barth et al., 2017), and a negative relationship with analyst forecast error (Zhou et al., 2017). Again, there are inconclusive results for the cost of equity capital. These studies were conducted in South Africa, where IR is mandatory. There is a need for more comparative studies between countries with different institutional environments in order to corroborate the findings associated with this specific type of report. We also observed that it is hard to find other non-economic variables among the keywords of the cluster. Other types of non-economic consequences of NFI reporting, such as reputational effects, should be studied.

6. The ‘environmental’ cluster. As in the ‘IR’ cluster, there are no keywords to show in this cluster because it was identified in the author

co-citation and bibliographic coupling analyses. In the analyses we found a group of authors that focus on studying NFI reporting with an environmental approach, including issues such as environmental disclosures and environmental performance. Table 3.3 shows that some of the most cited articles are related to the environment (Al-Tuwaijri et al., 2004; Cho & Patten, 2007; Clarkson et al., 2008; Patten, 2002), all of which study environmental performance as a determinant of the level of environmental disclosure. These articles report mixed results regarding the sign of the relationship between the variables. According to legitimacy theory, companies with poor environmental performance are expected to provide more extensive environmental disclosures in order to gain legitimacy (Cho & Patten, 2007; Patten, 2002). On the contrary, findings from other articles (Al-Tuwaijri et al., 2004; Clarkson et al., 2008) support a positive relationship: “Superior environmental performers are more forthcoming in truly discretionary disclosure channels, as predicted by economics based voluntary disclosure theories” (Clarkson et al., 2008).

Patten, DM., Cho, CH., and Cormier, D are relevant authors in this research line, as indicated by the author bibliographic coupling and co-citation analyses. The first two authors study how poor environmental performers gain legitimacy through political activities (Cho et al., 2006), through environmental disclosures (Cho & Patten, 2007; Patten, 2002) and its reflection on environmental reputation (Cho et al., 2012). The authors also study the type of language that organizations employ on the reports depending on the level of performance (Cho et al., 2010). For instance, poor environmental performers exhibit more optimism and use less certain language.

Cormier, D. investigates the impact of environmental reporting on the relationship between a firm's earnings and its stock market value (Cormier & Magnan, 2007); and its effect in terms of reducing information asymmetries between managers and stock market participants (Cormier et al., 2011) or enhancing analysts' forecasts (Cormier & Magnan, 2015). The author also focuses on environmental managers' attitudes (Cormier et al., 2004).

We noticed that there are articles that combine references from different research lines. For instance, (Roberts, 1992) uses references from the ‘essence’ line to explain some determinants of NFI reporting. The research in each cluster enriches the cluster itself, by adding new contributions to the knowledge therein, but it also enhances the other clusters: when authors use references from other research lines they are benefitting from the knowledge base generated in the other cluster to further develop their own cluster. Thus, the knowledge expands more quickly due to this synergistic effect. In light of the above, we suggest that researchers should not view the research lines identified above as closed boxes, but should combine references from the different streams of research.

The research lines identified are not entirely separate from each other but rather may overlap: the ‘report’ research line includes different types of report, such as environmental reports, GRI, or IR, with the latter being a research line in itself. For instance, aspects such as the effect of assurance can be studied on reports in general (Kolk & Perego, 2010; Manetti, 2012; Mori et al., 2014; O’Dwyer, 2011; O’Dwyer et al., 2011; Simnett et al., 2009), or specifically on IR (Maroun, 2017; Reimsbach et al., 2017). Also, many articles study environmental performance as a determinant of environmental disclosure (Al-Tuwaijri et al., 2004; Clarkson et al., 2008; Patten, 2002), and its relationship with economic consequences (Al-Tuwaijri et al., 2004); we can thus see how the ‘environmental’ cluster overlaps with the ‘determinants’ and the ‘consequences’ cluster.

3.5 DISCUSSION AND CONCLUSION

Using bibliometric techniques, this article has mapped and structured the literature of the field of NFI reporting. This paper is significant because, as far as we know, it is the first bibliometric analysis structuring NFI reporting literature.

The relevance of the topic is indicated by the exponential growth of the number of published articles. Even though this research topic first emerged in the 1970s, 90% of the articles have been published in the

last 10 years, which indicates researchers' interest and the growing importance of the topic in the last decade.

The number of citations also reflects the relevance of the subject, with an average number of 18.34 citations per paper. Elkington (1994) and Ullmann (1985) published the most cited articles on the topic, with 926 and 868 citations, respectively. Both publications make important theoretical contributions. We also find Garcia-Sanchez, I.M., who has contributed the most publications to the topic, a total of 34 papers, representing 1.09% of the total.

The top journals in this field by number of published articles are *Journal of Business Ethics* with 159 articles (5.10% of the total); *Corporate Social Responsibility and Environmental Management* with 129 publications; followed by *Social Responsibility Journal* (115 publications) in third place.

There is a total of six research lines identified in the literature. In the previous section, we carry out an in-depth analysis, where we identify the main contributions and gaps in each of them. The analysis of keywords co-occurrence reveals four of the main streams of research on this topic: the 'essence', which focuses on business ethics and values underpinning NFI reporting practices; the 'determinants', which are the drivers of these practices in organizations; the 'reports', which analyses aspects regarding the models or standards of reporting, the assurance of reports, and 'consequences', which studies the effects of reporting on companies' cost of equity, liquidity, etc.

The bibliographic coupling of authors and the author co-citation analysis add two more research lines. They indicate that a significant body of researchers publish work about 'IR' as a subject of study, while also pointing to another stream of research focused on the 'environment'.

In the bibliographic coupling of references, we find highly cited articles belonging to the 'determinants', 'performance' and 'essence' clusters, indicating that they are consolidated lines of research in the literature. The research about 'reports', specifically 'IR', and issues

such as the assurance of reports, has emerged in the last decade, which shows that these are quite recent streams of research. These research lines have to date focused on very specific literature references. We suggest combining references from different research lines, as has been done in the most consolidated areas of research, in order to increase the knowledge base more quickly.

Regarding the analysis of co-authorship relationships between countries, we find that the USA is the top contributing country, followed by Australia, England, Italy, and Spain. European countries tend to collaborate frequently with other countries; specifically, England is the country that collaborates most. There are also three regional networks of strong collaboration (Arab countries; Eastern European countries; and East Asia and the Southeast Asian region). Another aspect worth noting in Figure 3.10 is the distance between the nodes, indicating that Eastern European countries engage in very little collaboration with other European countries.

This analysis reveals that some countries collaborate more than others. These collaboration networks could be explained by various different factors (Luukkonen et al., 1992) such as history, language and cultural similarity. Different clusters of countries have been identified in previous literature (Gupta et al., 2002), grouped according to cultural values and beliefs. In our study, we found strong regional collaborations networks within Arab countries, Eastern European and Asian countries, which are some of the cultural clusters identified by Gupta et al. (2002). In fact, the Eastern European countries are a clear example of a well-defined cultural cluster engaging in frequent and intensive collaborations (Luukkonen et al., 1992). The cultural environment can affect researchers, as they are part of society, thus affecting research outcomes (Hofstede, 1994) and network collaborations.

Language could also be a reason why some countries collaborate more than others. Language is a barrier to publishing for researchers who are not native English-speakers (Gibbs, 1995). To overcome this difficulty, they may collaborate with researchers from English-

speaking countries (Koseoglu, 2016). This could explain why England is the country that collaborates the most and that countries belonging to the Anglo cluster (Gupta et al., 2002) are the ones that publish the most, since the number of publications from each country reflects the number of articles in which authors from each nation have collaborated.

The formation of these collaboration clusters could be beneficial for creating knowledge. We have seen in the study of the determinants and consequences that some studies obtain different results when comparing countries. Collaboration networks do not necessarily imply multi-country analysis. However, collaboration is a way to access resources such as information and data sources (Koseoglu, 2016). This will help researchers to conduct comparative studies among countries with information that they might not have been able to access otherwise. In this regard, collaboration networks might help to increase multi-country studies.

It is also important to note that many of the collaborations between countries are conducted within the same cultural cluster (Gupta et al., 2002). Hofstede (1994) analyses how each author's national culture can affect the outcomes of research. Combining authors from different cultures without having a single dominant researcher culture is important to eliminate cultural biases (Hofstede, 1994). This underlines the relevance of collaborations among different culture clusters. It is also important to consider these cultural differences when conducting comparative studies. For example, Einwiller & Carroll (2020) show how NFI is disclosed differently in different cultural clusters: Germanic/Nordic European countries report more negative information in NFI reports, while Confucian Asian is the cluster that discloses the least negative information.

In the organization co-authorship analysis, we observe that Spanish universities engage in strong collaboration with one another but very little with other organizations from outside the country. This could be explained by the geographic proximity and the use of a common language, which are important factors in choosing collaborators

(Larivière et al., 2006). Auckland University and Pretoria University are the ones that collaborate the most with other organizations, while the institutions that publish the most about NFI reporting are Bucharest University of Economic Studies in Romania and University of Salamanca in Spain.

The findings and conclusions that are extracted from the analysis in this paper can be useful for researchers, practitioners, and policymakers.

Focusing on researchers, the bibliometric analysis can help when starting an investigation on NFI reporting. The chapter presents the structure and main lines of research. It can also help in the search for specific relevant literature in the different streams of research as well as the main authors. This structure also points to promising future research avenues. Focusing on practitioners, the structure presented in this study will help them to easily access knowledge on issues that might be relevant to their organization. Although policymakers are already gradually introducing new laws, such as the European Union Directive 2014/95/EU and its adoption in EU Member States, including Spain (Sierra-Garcia et al., 2018), they should pay attention to issues that researchers identify as relevant and might warrant regulation. The existing lack of legislation—incipient but still scarce—leaves many aspects unregulated, such as the above-mentioned assurance of reports.

Some future research avenues emerge from the set of analyses performed in this chapter:

First, more comparative studies between countries are needed in general. We observed in the study of the consequences that mixed results are reported, depending on the country where the research is performed. Furthermore, regarding the study of the determinants, W. Ali et al. (2017) indicate that “the disclosure research on the national context in developing countries is dominated by single-country case studies and we still require a more fine-grained comparative analysis of disclosure in developing countries” (p.290).

We corroborated this need with the countries co-authorship analysis. Most of the collaboration networks are between countries from the same cultural cluster (Gupta et al., 2002). In future studies, we suggest combining countries and/or researchers from different cultures to mitigate cultural bias (Hofstede, 1994). In Figure 3.10, we also highlighted the lack of collaboration between Eastern European and other European countries. New studies could enrich the body of research by studying NFI reporting using data from both groups of countries, especially since most of them are governed by the same European legislative framework. Moreover, the European countries in the red cluster present a higher degree of economic development than the Eastern Europe countries. A collaboration between countries with these differences could be useful for many reasons: for instance, the businesses located in economies with different degrees of development could have different needs or challenges when reporting NFI; also, these different needs and challenges could help in the development of different types of reporting, as well as the creation of new laws in each country.

Second, the keyword analysis revealed that when investigating the consequences of reporting NFI, the focus is mainly on economic variables, such as cost of equity, market value, or liquidity. Thus, further research should examine other types of consequences, such as reputation.

Third, internal determinants such as size, industry, managerial attitudes, and financial performance have been studied more extensively than external ones (W. Ali et al., 2017; Fifka, 2013). Despite this, there are still some internal variables that call for more in-depth study; for instance, researchers should examine “how the organizational culture and identity of the firm or the underlying psychological processes and decision-maker characteristics at the micro level influence CSR disclosure” (W. Ali et al., 2017, p.290). Regarding external determinants, there is a need for studies that include stakeholder pressure, attitudes and perceptions.

Fourth, studies show that IR is still in its very early stages and that there is a gap between academics and practitioners (Dumay et al., 2016). Greater collaboration between the private sector and universities would help accelerate the progress made in the research and offer more practicable results (debate about harmonization, the inclusion of measures or indicators, etc).

Finally, we suggest performing a review of the literature in each of the analysed clusters. The objectives of this study were to identify the different streams of research and describe the most relevant contributions and authors in each one. This has helped us to identify some gaps within the clusters, which we propose as avenues for future research. However, we have not conducted an in-depth review of each cluster (as this was not our goal), which has undoubtedly meant that we have missed out many other important studies and current conversations within each line. Thus, we suggest conducting a review of the identified lines of research in order to establish their state of the art and future research avenues.

Several limitations should be mentioned. First, regarding the data source that we used, we only collected data from the WoS Core Collection. Although it includes the most relevant collection of articles, the analysis could include other databases such as Scopus or Google Scholar. Second, as it is based on statistical and mathematical tools, bibliometric methodology can produce confusing interpretations if it is not combined with other qualitative analyses.

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Reputation, regulation and corporate governance as determinants of the improvement of NFI reporting

**CHAPTER 4: THE INFLUENCE
OF REPUTATION AND
REGULATION ON THE
QUANTITY AND QUALITY OF
NFI REPORTS**

Reputation, regulation and corporate governance as determinants of the improvement of NFI reporting

4.1 INTRODUCTION

According to legitimacy theory, the disclosure of NFI is an important tool to increase or gain legitimacy. Reports are a way of demonstrating that corporate actions are legitimate (Gray et al., 1995; Reverte, 2009) and of communicating with stakeholders to maintain their support (Branco & Rodrigues, 2008). Some studies indicate that 80% of companies worldwide report on sustainability (KPMG, 2020). However, there are many factors that can act as determinants of such practices that researchers haven't paid much attention. Internal determinants of the organization, such as size or financial performance, have been more extensively studied than external determinants (Ali et al., 2017; Fifka, 2013; Grueso-Gala & Camisón, 2022). Due to this reason we aim to deepen the knowledge of the effects on reports of two external pressures that show inconclusive empirical results: reputation and regulation.

One of the most important benefits of NFI reporting is the increase of a firm's reputation (Armitage & Marston, 2008; Khan et al., 2020; Pérez, 2015). This is one of our selected variables for the study due to its relevance and the fact that there is still mixed empirical evidence on the relation between reputation-reporting (Castilla-Polo & Sánchez-Hernández, 2020).

Reputation is a key intangible asset for firms (Castilla-Polo & Sánchez-Hernández, 2020), it is difficult to imitate (Fombrun & van Riel, 1997; Melo & Garrido-Morgado, 2012), and it is associated with numerous benefits (Fombrun & Shanley, 1990). According to different theories (Pérez, 2015; Pérez et al., 2015) such as legitimacy, signaling or agency theory, firms use NFI reporting as a tool to signal their good behaviour to stakeholders to increase transparency and gain legitimacy and reputation. However, studies by many authors (e.g. Castilla-Polo & Sánchez-Hernández, 2020) show mixed empirical results.

The extension and quality of the information is not always substantiated on good environmental and social performance. While firms with high reputation and good performance use NFI reports as

tools to signal their superior performance; other firms with worst performance use it to mimic them, to pose as good corporate citizens (Mahoney et al., 2013). It is not clear in the literature if a higher level of disclosure corresponds to more reputed firms or to bad performers trying to engage in “window dressing”(Schreck & Raithel, 2018). As Castilla-Polo & Sánchez-Hernández (2020) point out “companies in a reputational position of strength are more interested in sustainability reporting as they are more vulnerable to disappointing stakeholders who hold high expectations” (p.5). However, other authors find that firms with worst environmental performance tend to provide more extensive disclosure (Cho et al., 2012; Cho & Patten, 2007). Due to this, stakeholders are sceptical because they perceive NFI reporting as a symbolic strategy (Miras-Rodríguez et al., 2020). Although there are previous studies on the reputation-reporting relationship (Alon & Vidovic, 2015; Michelon, 2011), the results are contradictory. Hence, there is need for more research on this issue.

Another important external factor is regulation. In the last decade there have been some regulatory changes in the EU and the Member States. One of the most relevant ones is the EU Directive 2014/95/UE, which was enacted by the European Parliament in 2014. This Directive was transposed into each Member State national legal framework. Due to this new regulation, there has been a shift from voluntary to mandatory reporting in a great number of large organizations. As this is a recent change, there are very few studies investigating mandatory reports (Ottenstein et al., 2022); usually literature focuses on voluntary reporting (Haji et al., 2022). Also, there is a lack of research that compares the reports provided by EU organizations before and after the Directive to learn which was the effect of the transposition on the reports (Matuszak & Róžańska, 2021).

There is a need for more studies given that external determinants of NFI reporting have been given little attention compared to internal ones, and reputation and regulation are two relevant factors that present mixed results in the literature. The purpose of our research is to provide insight into this subject and answer the following questions: Which

firms are disclosing NFI with higher extension and quality levels? Most or worst reputed ones? and, does mandatory reporting increase quantity and quality of NFI? Or do firms just meet the minimum requirements to comply with the law?

These questions are still unanswered or present mixed results. We perform a panel data analysis of all the firms listed on the Ibex35 index on the period of 2015-2019, which includes the years before and after the transposition of Directive 2014/95/UE.

The results of our research are relevant and have important implications for researchers, practitioners, and policymakers. Our analyses indicate that most reputed firms are the ones that report not only better quality NFI reports, but also more extended information. By knowing this, we can help to increase the belief and trust that the signals from the firm and the increase in transparency they are showing are genuine. This contribution will be of interest to managers as they can use it as support of their transparency policies and NFI disclosure.

Also, regulation shows a positive and significant impact on both quantity and quality of the disclosure. In other words, policymakers have driven firms to, not only comply with new laws, but certainly to report more and better regarding sustainability matters. This can motivate legislators to keep improving the national legal frameworks on this subject.

This paper contributes to the existing literature in various ways. First, it provides evidence of the role played by reputation and regulation as a determinant of quantity and quality of NFI disclosure. Second, this study extends previous studies on NFI reports by concentrating on information released not only in annual reports, but also in stand-alone reports, such as social reports, environmental reports, and sustainability reports. Third, we use econometric models based on panel data which adds value to the research due to the numerous benefits of this technique. Panel data analysis presents different advantages such as more informative data, greater variability, less collinearity among variables, more degrees of freedom and greater

efficiency than cross-section or time-period methods (Martínez-Ferrero & García-Sánchez, 2017). Fourth, we study both variables: quality and quantity, in the same article and as different constructs. Very few papers have specifically focused on the determinants of quality reporting, and many researchers use quantity as a proxy for quality, thus leading to inaccurate results. Thus, we contribute by studying both as separate constructs, and together in the same article. We also provide a subtle methodological contribution by subtracting all non-informative images and blank spaces from the extension of the reports, as including them could lead to biased results.

The remainder of the paper is structured as follows. The next three sections review the three main concepts of this study: reporting, reputation, and regulation; while at the same time we develop the hypotheses. The methodology section describes the sample, variables, and research method. Then a section is dedicated to the presentation of the results. Discussion of the implications, concluding remarks, limitations and suggestions for further research are presented in the last section.

4.2 NFI REPORTING

In the 1970s, businesses started to disclose information about social and quality aspects on the annual report and on stand-alone reports (Fifka, 2013). These were the first steps of firms that started to disclose something else different than financial information to their stakeholders. In the 1990s the focus changed to environmental aspects, but since the new millennium started, social and environmental aspects were merged to form NFI reports. There are several names to refer to them in the literature, such as CSR reports, environmental disclosure, social reports, or sustainability reports, among others.

NFI reports can be described as a disclosure provided to outsiders of the organization on dimensions of performance other than the traditional assessment of financial performance from the shareholders and debt-holders' viewpoint (Erkens et al., 2015). It can also be defined as the provision to diverse stakeholders of NFI relating to a company's

interaction with its physical and social environment (Pérez, 2015). It can be found in the annual report or in a separate report. Among the aspects that it can include we find social or environmental matters, human rights, corruption and bribery, corporate governance, labour, health & safety, etc.

The numbers reveal the relevance of these types of reports: 96% of the world's 250 largest companies (Global Fortune 250) and about 80% of companies worldwide report on sustainability (KPMG, 2020). Although this activity is time-consuming and costly (García-Sánchez et al., 2019), these reports present many benefits for firms (Castilla-Polo & Sánchez-Hernández, 2020). For example, enhancing brand value and motivation of employees, support of internal control processes of the company, or as the most relevant, improvement of reputation (Armitage & Marston, 2008; Khan et al., 2020; Pérez, 2015).

There are several theories that explain why firms issue NFI reports. The most used one is legitimacy theory (Chung & Cho, 2018; de La Cuesta & Valor, 2013), but other ones are agency theory, signaling theory or stakeholder theory.

Legitimacy is a necessary input for the survival of an organization (Cho et al., 2012). This theory considers that CSR activities are a way to demonstrate that corporate actions are legitimate (Gray et al., 1995; Reverte, 2009). According to this theory, the reports are important tools to increase or gain legitimacy, because they provide a way of communicating with stakeholders and maintaining their support (Branco & Rodrigues, 2008). Thus, disclosures are used to influence public opinion.

Similarly, agency theory can also explain the motivations to disclose NFI. In agency theory, there is one party (the principal) that delegates work to another (the agent), who performs that work (Pérez, 2015). One of the main problems in this theory are information asymmetries between the principal and the agent. With this perspective, CSR reports are “part of a firm’s communication tool to reduce the asymmetries of

information between managers and investors and is used to produce a better valuation of a company” (Reverte, 2012, p.253).

Signalling theory is related to agency theory as both are based on the existence of information asymmetries between managers and stakeholders (Pérez, 2015). According to signalling theory, CSR reports can be seen as a signal from firms sent to decrease the asymmetries of information with stakeholders. These reports signal that the company is a good corporate citizen (Pérez et al., 2015) and has a good reputation (Michelon, 2011).

Another frequently used theory is stakeholder theory. According to this theory, CSR is the firm’s attempt to negotiate its relationship with stakeholder (Ihlen Ø et al., 2011) and considers reports as the mechanism to cover stakeholder’s demands (Martínez-Ferrero et al., 2016).

When reports are studied by academics, there are two variables that are mainly used: quantity of information disclosed and quality of the report. Quantity measurements have been more studied than quality (Castilla-Polo & Ruiz-Rodríguez, 2021), due to the difficulty of measuring the latter (Brammer & Pavelin, 2008). There are also some studies that often use quantity as a proxy for quality (Beretta & Bozzolan, 2008), for instance, Romero et al. (2019) or Adel et al. (2019). However, there is empirical evidence that quantity is not a good proxy for quality (Castilla-Polo & Ruiz-Rodríguez, 2021). There are many developed measurements for quality and quantity in the literature.

For studying quantity, some studies build indexes that indicate the level of disclosure by counting how many indicators are reported (Sierra-Garcia et al., 2018), the level of GRI guidelines (Fernandez-Feijoo et al., 2018; García-Sánchez et al., 2019; Martínez-Ferrero et al., 2015), or number of pages of the report (Castilla-Polo & Ruiz-Rodríguez, 2021).

For studying quality there are also several indexes that try to capture different aspects of the report. For example, density and accuracy (Romero et al., 2019), clarity (Avram et al., 2019), relevance (Castilla-Polo & Ruiz-Rodríguez, 2021; Torelli et al., 2020), or reliability

(Castilla-Polo & Ruiz-Rodríguez, 2021). We also noticed that most of the studies (e.g. Adel et al., 2019; Avram et al., 2019; Fernandez-Feijoo et al., 2018; García-Sánchez et al., 2019; Martínez-Ferrero et al., 2015; Romero et al., 2019; or Sierra-Garcia et al., 2018) just include one of the two variables: either they study quantity, or they study quality. Due to prior findings that indicate that quantity is not a good proxy of quality, and that we frequently find just one of them in research articles, both variables will be included in this study.

4.3 REPUTATION

Reputation can be defined as “a perceptual representation of a firm’s past actions and results that describes the firm’s ability to deliver valued outcomes to multiple stakeholders. It gauges a firm’s relative standing both internally with employees and externally with its stakeholders, in both its competitive and institutional environments.” (Fombrun & van Riel, 1997, p.10).

Reputation is crucial for firms as it can provide them with a competitive advantage through market differentiation (Castilla-Polo & Sánchez-Hernández, 2020). It is a valuable intangible asset for a company, often seen as one of the most important ones (Axjonow et al., 2018). It is difficult to imitate (Fombrun & van Riel, 1997; Melo & Garrido-Morgado, 2012), and it is associated with numerous benefits such as enhancing access to capital markets, attracting consumers and investors, enable firms to charge premium prices or increasing profitability (Fombrun & Shanley, 1990). Firms can have different sub-reputations for different aspects of its activities (e.g. their CSR commitment, the quality of their products, financial performance, etc), however observers will tend to give a net assessment of the organisation’s reputation (Fombrun, 1996).

As we have mentioned earlier, one of the most important benefits of NFI reporting is the improvement of reputation (Armitage & Marston, 2008; Khan et al., 2020; Pérez, 2015), due to the relevance of this intangible asset. However, literature on the reputation- CSR reporting

relationship is still scarce, especially if we compare it to the vast literature on CSR (Pérez, 2015).

Regarding NFI reporting, there are some variables, for instance financial performance, that can be considered both a driver and a consequence (de Villiers & Dimes, 2021). Reputation is another example of a variable that has been considered as an antecedent and a consequence of CSR reports in the literature (Castilla-Polo & Sánchez-Hernández, 2020). Whether it is considered a determinant or a consequence, the literature shows contradictory empirical results (Castilla-Polo & Sánchez-Hernández, 2020). Thus, there is a need for more research to shed some light in the relationship between reputation and NFI reporting.

There are many articles that have studied empirically if NFI reporting influences reputation. Some studies demonstrate that a positive relationship exists between these two variables (Baraibar-Diez & Sotorrió, 2018; Cho et al., 2012; Odriozola & Baraibar-Diez, 2017). The results show that the quality of sustainability reporting increases the likelihood of having a higher corporate reputation (Baraibar-Diez & Sotorrió, 2018; Odriozola & Baraibar-Diez, 2017). The quantity of NFI disclosed is also positively related: more extensive disclosure is associated with more favourable reputation scores (Cho et al., 2012). However, there are other studies that do not report the same results, as they indicate that NFI reporting does not necessarily mean a better reputation (Axjonow et al., 2018; Pérez et al., 2017) or can even destroy it (Miras-Rodríguez et al., 2020; Pérez et al., 2017). Some findings indicate that the effect will depend on the type of stakeholder: CSR reports do not influence corporate reputation among non-professional stakeholders, but they influence reputation among professional stakeholders (Axjonow et al., 2018); similarly, Pérez et al. (2017) indicate that the intensity of reporting to investors has positive effects on reputation, while reporting to regulators and the media has negative effects, and reporting to the rest of stakeholders has no significant impact.

There is also evidence that corporate reputation tends to be negatively affected by CSR reporting (Miras-Rodríguez et al., 2020), although it will depend on the firm's CSR commitment. This is due to the fact that reports are likely to be perceived as a symbolic strategy by stakeholders. Many authors have studied how firms use social and environmental disclosures as a tool to manage reputation during major incidents (Arora & Lodhia, 2017), or to pose as "good" corporate citizens (Mahoney et al., 2013). Hence, stakeholders are sceptical about the underlying motivations of firms, and this would have a direct impact on how CSR reporting may affect reputation (Miras-Rodríguez et al., 2020).

Reputation as a determinant of NFI reporting has also been studied empirically, however it hasn't been paid much attention in the literature (Michelon, 2011). Castilla-Polo & Sánchez-Hernández (2020) indicate that both directions (reputation as determinant and as a consequence of NFI reports) are significant, but the effect as a determinant is slightly higher. When studying reputation as a determinant we also find mixed results.

For some authors reputation is an incentive to disclose NFI, using the reports to maintain the level of reputation achieved by the organization (Castilla-Polo & Sánchez-Hernández, 2020). For instance, studies like Kansal et al. (2014) or Michelin (2011) show that more reputed companies will disclose NFI information more extensively. Kansal et al. (2014) explain that due to their high reputation, companies are more inclined to spend their CSR budget and make a higher disclosure. According to Mishina et al. (2010) "organizational audiences are much more likely to notice how well a firm performs relative to their expectations" (p. 706), thus pressure from external expectations will increase because organizations are aware that others will notice their failures more than other companies. Following this idea, Castilla-Polo & Sánchez-Hernández (2020) state that "companies in a reputational position of strength are more interested in sustainability reporting as they are more vulnerable to disappointing stakeholders who hold high

expectations” (p.5). Hence, they will be more oriented to disclose NFI to enhance its image as a responsible organization.

On the other hand, there are some authors that found evidence supporting the opposite. Firms with worst environmental and social performance will provide more extensive disclosure (Alon & Vidovic, 2015; Cho et al., 2012; Cho & Patten, 2007; Patten, 2002). These authors do not study the disclosure of bad reputed companies; they focus on environmental and social performance instead. However, as we have seen earlier in the definition of the concept, reputation is built from the firm’s past actions. Following this argument, a bad reputation is built from a bad environmental and social performance. Thus, it is reasonable to think that firms with bad reputation will tend to provide more extensive disclosure. As Schreck & Raithel (2018) indicate this could have two potential explanations: either these companies engage in “window dressing” trying to divert attention from their unfavourable performance; or bad performers are serious about improving their CSR commitment and performance and use NFI reports increasing transparency in order to build or repair reputation. The authors check for improvement of the environmental and social performance over time for low-performance companies with high levels of NFI reporting, however, they do not find any. Thus, they conclude that extensive NFI reporting from low-performance firms cannot be taken as a signal for a serious change in their CSR commitment, and that they partially engage in “window dressing”.

Reputation is one of the most important reasons that firms disclose NFI (Armitage & Marston, 2008; Khan et al., 2020). With all the inconclusive previous results that we have shown, some questions arise: are firms with high reputation (thus, committed to social and environmental issues) the ones that disclose more and better NFI? Or, on the other hand, are less reputed firms the ones that make a greater effort to disclose more extensively and with better quality?

To answer these questions, we follow the ideas from signaling theory. Signaling theory focuses on reducing information asymmetries between two parties (Spence, 2002). In this case, the two parties could

be identified as the firm (which is the signaler) and external stakeholders (the receiver). The external stakeholders don't know if a firm is being socially and environmentally responsible. This information is only available for the firm, and the firm will decide if and how to communicate (signal) it, for example through the NFI report. As Connelly et al. (2011) indicate "signaling theory focuses primarily on the deliberate communication of positive information in an effort to convey positive organizational attributes" (p. 44). In other words, the firms make an effort to communicate something positive. However, how would external stakeholders know if this signal is genuine, or if it is only imitating a positive attribute?

Signaling theory answers to this with the concept of signal costs (Connelly et al., 2011), and argues that some signalers will be more capable than others to absorb the signal's costs. This means, for instance, that it will be easier and less costly for a highly responsible firm to disclose more information regarding good corporate practices than for a non-responsible one. This is due to the fact that the highly responsible firm is already implementing corporate responsible policies and performing sustainable practices, and the non-responsible one will find it time-consuming and highly costly to fake these signals.

Following previous results that indicate a positive relationship, and arguments in line with signaling theory, the first of our hypotheses that we support and want to clarify is:

H1: The quantity of NFI disclosure will be higher for highly reputed firms.

The contradictory results found in the literature may be due to the use of a single variable when measuring reporting. As we have argued above, many studies only include the quantity or quality of reporting, or even use quantity as a proxy for quality. However, it is important to include both separately to avoid mixed results.

Some authors (Alon & Vidovic, 2015; Cho et al., 2012; Cho & Patten, 2007; Patten, 2002) have shown that worst performers will disclose more extensively, however, they also noted that firms with better environmental performance were found to provide better quality information than poor performers (Alon & Vidovic, 2015; Al-Tuwaijri et al., 2004). The extension of the disclosed NFI “can be genuine if substantiated, but it can also be easily replicated”(Alon & Vidovic, 2015, p. 340) by the worst performers; however, the quality is harder to mimic as it may only be reachable by superior performers (Clarkson et al., 2008).

Hence, our next hypothesis, which is also in line with signaling theory, is the following:

H2: The quality of NFI will be higher for highly reputed firms.

4.4 REGULATION

Non-financial reporting has been voluntary for businesses since its first appearances. Nowadays, it remains voluntary in most countries around the world (Yang et al., 2021). In the European Union, there have been regulatory changes in the last decade that have made mandatory this type of report for certain organizations. The EU Directive 2014/95/UE was enacted by the European Parliament in 2014. This Directive attempts to improve transparency across Europe by standardizing NFI reports and their requirements. It mandates the Member States to transpose the Directive to their national legal frameworks, however, it allows them to decide about certain aspects such as the reporting framework, the verification by independent assurance providers, the place of publication, etc. For instance, the Directive doesn't require an assurance of the content of the NFI, but only an auditor to check if the NFI report has been provided by the organization.

In Spain, there are different laws for the regulation of NFI reporting. The Law 2/2011 of Sustainable Economy indicated the obligation to prepare sustainability reports and corporate governance reports by certain public entities. However, it still remained optional for private organizations. The Order ECC/461/2013 introduced the obligation for listed companies and saving banks to provide an annual corporate governance report. This order indicated the content and the structure that the reports must follow. Spain incorporated the UE Directive with the Royal Decree-Law 18/2017 and Law 11/2018. The Directive requires firms to report information on six topics: environmental; social; employee matters; respect for human rights; anti-corruption; and bribery matters. The firms required to disclose this information are Public Interest Entities (PIEs) and large firms (more than 500 employees). The abovementioned elements must be reported either in a separate report or included in the annual report.

A key objective of the regulations is to improve the quantity and quality of CSR reporting (Haji et al., 2022). However, it remains unclear whether this objective has been accomplished or not. These regulatory changes that have shifted NFI reporting from voluntary to mandatory raise some questions: Does mandatory reporting have any consequence on the quantity and quality of NFI disclosure? And if so, which are the effects on both variables?

Prior literature, mainly based on voluntary reports (Haji et al., 2022), generally concludes that firms use CSR reports as a legitimising tool (Michelon et al., 2015; Cho and Patten, 2007; Cho et al., 2010; Deegan et al., 2002) engaging in symbolic reporting. However, does mandatory reporting increase the quantity and quality of NFI? or do firms just meet the minimum requirements to comply with the law?

There seems to be a general agreement that regulation has increased the quantity of NFI. The findings of Arif et al. (2022) show that mandating NFI reporting can enhance the quantity of ESG disclosures. Agostini & Costa (2018) indicate that the extension of environmental information on the consolidated annual report (+26.89%) and on social-environmental reports (+31.27%) increased after the application

of regulation. This is also indicated by Yang et al. (2021), who find a substantial increase of mandatory environmental reporting in Australian companies. Ottenstein et al. (2022) and Matuszak & Róžańska (2021) find that firms report more sustainability information as an effect of the Directive 2014/95/EU. Finally, Haji et al. (2022) also provide several references of studies that find an increase in CSR disclosure after CSR disclosure regulations in different countries. The argument behind these results is explained by Matuszak & Róžańska (2021) “Companies that have not previously provided NFD will be required to do so under the new regulations, which will expand the number of companies provided NFD. In addition, because companies report only on those NFD that they consider most relevant to their stakeholders (Amel-Zadeh, 2016), the requirement to disclose a comprehensive non-financial statement is likely to increase the average quantity of disclosure” (p.1053). In conclusion, after the regulations, there will be a higher number of companies disclosing more aspects of NFI. This is tested in our hypothesis number 3:

H3: The quantity of NFI disclosure will be higher after the introduction of the new NFI disclosure regulation.

As indicated by Ottenstein et al. (2022) “an increased overall reporting quantity induced by the mandate does not necessarily correspond with an enhanced reporting quality” (p. 58). Hence, it is relevant not to assume the same effect and to study not only quantity but also quality.

Haji et al. (2022) indicate that the “evidence on the effects of CSR reporting regulations on reporting quality remains weak” (p.9). Most studies of mandatory NFI reports focus on studying the quantity but leave other quality aspects unexplored (Yang et al., 2021). This scarce empirical evidence could be leading to the inconclusive results found in the literature.

Results from Korca et al. (2021) indicate that the effect of regulation on the reports depends on the topic of NFI. The authors find that in general, the shift from voluntary to mandatory has caused an increase in the volume of NFI reports, but it hasn't occurred the same with its quality. However, when it comes to social, and employee matters both quantity and quality are enhanced. Carungu et al. (2021) also find that when moving from voluntary to mandatory the quality of NFI reporting does not increase. Haji et al. (2022) in their review study find that disclosure quality remains low after reporting regulations.

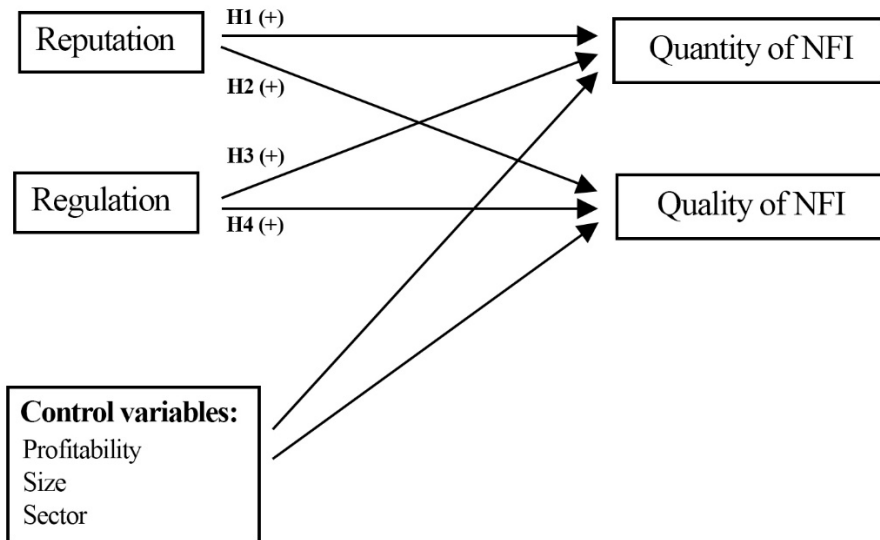
There are other authors that, on the contrary, find a positive significant relationship between regulations and quality. The study by Habek & Wolniak (2016) indicates that the legal obligation to disclose CSR data has a positive effect on the quality of CSR reports. Caputo et al. (2020) and Ottenstein et al. (2022) find an increase of the quality on sustainability reports after the transposition of Directive 2014/95/EU, and Yang et al. (2021) find the same between regulation and environmental disclosure in Australia. Arif et al. (2022) highlight the importance of NFI regulations in increasing the quality of sustainability reporting.

Hence, to clarify these mixed results, our last hypothesis is:

H4: The quality of NFI disclosure will be higher after the introduction of new NFI disclosure regulation.

In Figure 4.1 we can see the model that we are going to study.

Figure 4.1. Overview of the research model



4.5 METHODOLOGY

4.5.1 Sample

The sample of our research includes all the firms listed on the Ibex35 index for the period of 2015-2019. The Ibex35 comprises the 35 most liquid companies traded on the Spanish stock exchange, and it is a representative of Spanish economic development (Odriozola & Baraibar-Diez, 2017). Every six months the list is revised, and the composition of the index can change. To increase the observations of our sample, we included all the firms that had been included in any period of the indicated years. The total number of firms in our sample is 40. For our study, we analysed the years 2015, 2017 and 2019. The selection of these years was motivated by the interest in measuring the effect of the regulation. 2017 is the first year that the regulatory changes abovementioned were implemented in Spain. Thus, with the selected years we have observations before the regulatory changes - 2015-, the first year of implementation -2017- and after the

implementation -2019-. We have a total of 120 observations in our study.

4.5.2 Variables

Dependent variables. The dependent variables in our study are the quality and quantity of NFI reporting.

Hence, to measure them, an index was adopted from Castilla-Polo & Ruiz-Rodríguez (2021). We believe the indexes proposed by the authors are well-thought. For quality, they don't use quantity as a proxy, and they measure more than one aspect: relevance and accuracy. For quantity, options applied by previous researchers such as counting words (e.g. Lee 2017) or sentences (e.g. Al-Shaer et al. 2017) were considered but discarded. By counting words or sentences there are many informative charts or figures that would be ignored (Unerman, 2000) thus counting the number of pages solves this matter.

Table 4.1 and Table 4.2 show the measurements of each variable. All the needed data was manually collected from the reports found on the firm's website.

Table 4.1. Variables for the quantity index

ID	Variable	Type	Description
R1	Annual Report	D	Absence (=0) or presence (=1) of annual reports in which sustainability issues were disclosed
P1	Annual Report: pages	N	Number of pages dedicated to content related to sustainability in this type of report
R2	Integrated Report	D	Absence (=0) or presence (=1) of integrated reports in which sustainability issues were disclosed
P2	Integrated report: pages	N	Number of pages dedicated to content related to sustainability in this type of report
R3	Sustainability report	D	Absence (=0) or presence (=1) of sustainability reports
P3	Sustainability report: pages	N	Number of pages dedicated to content related to sustainability in this type of report

D: dichotomous variable; N: numerical variable

The quantity index, for the company “a” in the year “x” was created as follows:

$$\text{Quantity Index}_{(a, x)} = \sum_{i=1}^3 \text{Type of report (Ri)} * \text{Number of pages (Pi)}$$

Types of reports. We took into consideration different types of reports as it is often that firms disclose the information in more than just one document, or in more than one format. As Lee (2017) or Castilla-Polo & Ruiz-Rodríguez (2021) believe, considering multiple reports will provide a more comprehensive view of the firm’s commitment to sustainability issues. If we only had counted annual reports, we would have missed stand-alone reports. Also, if we only considered reports that follow GRI guidelines we would have missed other types of documents that follow different methodologies. Thus, we included in our count all the available reports published on the firm’s website that disclosed NFI.

Number of pages. Castilla-Polo & Ruiz-Rodríguez (2021) included the total number of pages of the sustainability report. However, we wanted to be more accurate when counting the pages dedicated to NFI. Thus, we didn’t include pages like the cover, the table of contents, the CEO letter, other general or contextual information (‘about this report’ section, history of the firm or business areas/divisions), or information belonging to the financial statements. As mentioned earlier, counting pages versus counting words/sentences allows to include informative charts or figures. However, we might also be including non-informative images, which only serve as a decoration, and don’t add any information about the topics. Some firms focus on reporting just text, but others format the document with many non-informative photos or big blank spaces, which can lead to a rise in the number of pages significantly: in some cases, they represent up to 40% of the extension of the report. To deal with this, we corrected the total number of pages by subtracting a percentage of each page according to the size of the image. For example, if we found an image occupying half of a page, we subtracted 50% of that page to the total count of pages.

Table 4.2. Variables for the quality index

ID	Variable	Type	Description
RE1	SR strategy	D	Explicit reference to sustainability in business strategy (broad sense or specific contents)
RE2	SR committee	D	Presence or absence of a sustainability committee within the organization
RE3	SR Awards	D	Awards or recognitions related to sustainability performance (broad or specific aspects)
L1.1	GRI	D	Preparing the report in accordance with the GRI guidelines
L1.2	UN Global Compact	D	Adhering to the principles of the UN Global Compact
L1.3	AA1000	D	Adoption of the standard
L1.4	IIFR	D	Using the International Integrated Reporting Framework (IIFR)
L1.5	Other standards	D	Adoption of any other sustainability standard
L2	Assurance	D	If the company has had any external assurance of the NFI

D: dichotomous variable

The quality index was created as follows:

$$\text{Quality Index (a, x)} = \frac{\sum_{ij=1}^n \text{Score from REi} + \text{Score from Lj}}{\text{Maximum score}} \times 100$$

For the quality index, five variables were used, three variables for relevance issues (RE1 to RE3) and two for liability concerns (L1 and L2). The maximum possible total score in each year was 9 = RE1/RE2/RE3/L1.1/L1.2/L1.3/L1.4/L1.5/L2 (as they are dichotomous variables). The variables related to the type of standards followed were included separately in the index (L1.1, L1.2, L1.3, L1.4 and L1.5), because it is not the same to follow one or more than one standard in quality terms. The quality index is a percentage that indicates the quality level detected for the company “a” in the year “x”.

Independent variables. In our study, the independent variables are reputation and regulation.

Reputation. To analyse reputation, we have used the Spanish Corporate Reputation Business Monitor (MERCO), following Baraibar-Diez & Sotorrío, (2018), Castilla-Polo & Sánchez-Hernández (2020), and

Odriozola & Baraibar-Diez (2017) among others. MERCO is positioned as the main ranking of corporate reputation in Spain (Odriozola & Baraibar-Diez, 2017) due to its multi-stakeholder methodology (participants are business professors, influencers and social media managers, consumer associations, trade unions, NGOs, government representatives, economic journalists, and financial analysts), and the availability of the results (which are public). Each year MERCO publishes a ranking of the 100 companies in Spain with the best reputation. Companies in our sample have been given a value of 1 if they are included in the MERCO ranking on year “x-1”, and a value of 0 otherwise.

Regulation. Measuring regulation and its intensity is a “difficult task, and a relatively unexplored territory” (Kalmenovitz, 2021, p.30). Previous articles in other research areas have provided different methods in order to capture the intensity of the regulation and how it has changed over time. Kalmenovitz (2021) proposes different methods: active regulations and hours of compliance. The latter refers to the number of hours that it takes a firm to comply with the regulation. Due to the unavailability of such information, we discard this method. Active regulation refers to the number of laws active in a certain year. This is a transparent and easily replicable measurement. However, this method has its drawbacks: not all laws are equal, and some of them are more complex than others (Kalmenovitz, 2021), thus they are not comparable.

Other authors create indices using data sources about the intensity of the regulation for a certain country or sector. For example, Loayza et al. (2004) propose the following databases for constructing indices: Doing Business (The World Bank Group), Index of Economic Freedom (The Heritage Foundation), Economic Freedom of the World (The Fraser Institute), Labor Market Indicators Database (M. Rama and R. Artecona, 2000), The Corporate Tax Rates Survey (KPMG), and International Country Risk Guide (The PRS Group). We also find Al-Ubaydli & McLaughlin (2017) or Clark & Nesbit (2018) who use RegData, a database from the USA. None of these databases are useful

for us because they don't provide specific information on regulations about NFI reporting.

Finally, Marcos et al. (2010) propose counting the number of pages published in the Official journals in which all regional laws and rules are published. They indicate that the length of the laws can be a proxy for the intensity of the regulation. However, having into account that not all the published pages of the laws relate to describing the burdens over business activities, we incline for counting words instead of pages. This will allow us to select only the sections of the laws which indicate which are the new impositions to organizations. Another reason for counting words and not pages is that the format could affect increasing the number of pages, without necessarily meaning that there are more words or sentences, thus this measure wouldn't be consistent.

We selected the regulations that affected Spanish-listed companies (which are the ones in our sample) to mandatory disclose NFI information. The Order ECC/461/2013 of the 20th of march, determines the content and structure of the annual corporate governance report, the annual report on remuneration. We count the words of chapters II and III. This regulation hasn't changed since 2013, thus the number of words remains constant for the periods of our sample.

The UE Directive 2014/95/UE required each member state to modify their laws in order to make NFI reports mandatory for certain businesses. The Spanish Law 18/2017 incorporates in 2017 the mentioned Directive to the Spanish legal system by modifying the Commercial Code (CC), specifically article 49. The next year, Law 11/2018 modifies again article 49 of the CC regarding the contents and requirements of NFI reports. Thus, we count the number of words of article 49 of the Spanish CC in the years of our sample: year 2015 (prior to the mentioned laws), year 2017 (when Law 18/2017 applied) and in year 2019 (after Law 11/2018 had already been applied). Thus, intensity of the regulation of year "x" is:

Regulation_(x) = Chapter II and III of Order ECC/461/2013 + Art.49_x of CC

Control variables. We control for additional variables that are theoretically and empirically related to NFI reporting:

Profitability. Different theories such as the signaling theory, agency theory or political cost theory support the idea that firms' profitability or the levels of financial performance are related to the levels of disclosure (Brammer & Pavelin, 2008; Branco & Rodrigues, 2008; del Giudice & Rigamonti, 2020; Ortas et al., 2015). According to different articles, financially healthy organizations can more easily fulfil their obligations (Brammer & Pavelin, 2008), and have more available resources to allocate to this task. We downloaded from the ORBIS database the return on assets (ROA) ratio of each company for every year.

Size. Organizational size is often proposed as a determinant of sustainability disclosures (Ortas et al., 2015). Large firms are more visible; hence they are subject to more pressure and scrutiny from external groups (Brammer & Pavelin, 2008; Branco & Rodrigues, 2008; Ortas et al., 2015). Due to this, large firms may pay special attention to sustainability disclosure in order to demonstrate that their actions are legitimate (Brammer & Pavelin, 2008). This variable was measured as a natural logarithm of total assets (TA). The information about the TA of each company was downloaded from the ORBIS database.

Sector. The sector in which the company operates has been studied as a driver of sustainability disclosures (Kilian & Hennigs, 2014; Niskala & Pretes, 1995). Companies in sectors that can potentially have a high impact on the environment are considered to have greater pressures than companies in less environmentally sensitive industries (ESI). Thus, the former are more likely to disclose more sustainability information than the latter. In this article this is a dichotomous variable, with a value of 1 if the firm is in an ESI, and a value of 0 otherwise. The following sectors are considered ESI in our article, based on prior literature (Branco & Rodrigues, 2008; Djajadikerta & Trireksani, 2012; Kilian & Hennigs, 2014; Morales-Raya et al., 2019; Zeng et al., 2012) are: pharmaceutical; chemical; forestry, paper and pulp mills;

mining; oil and gas; steel and other metals; petroleum and plastic manufacturing; construction and building materials; electricity, gas distribution and water; transport; textile, clothing and fur; and tourism.

4.5.3 Method

After building the database we imported all the data into the software RStudio for data analysis. First, descriptive statistics are used to summarize our sample data. Second, we conducted a correlation analysis to determine the relationship among the variables in our study. Next, we employ three different methods of static panel data analysis to estimate our regression: the Pooled OLS, Fixed Effects (FE) and Random Effects (RE). Using the Hausman test and the F-test we select which of the three of them is the best method for our model. We also check for multicollinearity, heteroskedasticity, and autocorrelation.

Panel data consists of repeated observations of a cross-section of individuals over time. The use of these techniques allows overcoming the limitations of the low explanatory capacity (Martínez-Ferrero & García-Sánchez, 2017) of cross-sectional (different individuals in a period of time) and time series analyses (one individual for several periods).

4.6 RESULTS

4.6.1 Descriptive statistics

Table 4.3 reports the descriptive statistics of the dependent and independent variables in our study. We have divided the results into the 3 years of our sample to see the evolution of each variable.

We can see that the mean of quality and quantity has increased over the years. This is positive because it means that businesses are reporting more and better NFI. It is also noteworthy that the quantity and quality levels of the report vary greatly among the firms every year.

In terms of quality, some firms had 0% of the score of our quality index, while others had almost 90%. Regarding quantity, for example, in 2015 the minimum number of pages disclosing NFI information was

9.5 and 230.81 the maximum; while in 2019, 16.03 and 373.07 respectively. In this variable, we can also see that there has been an increase in the standard deviation (SD) throughout the years, which means that in general, the differences in quantity levels among firms have increased.

The regulation presents growth every year, being more notable the last year with an increase of 1284 words compared to the previous year, when there was an increase of 898 words.

Reputation is a dummy variable that takes a value of 1 if the firm is in the ranking of the 100 firms with the highest reputation, and a value of 0 otherwise. We can see that the mean of reputation every year is above 0.5, which means that most of the firms in our sample have a value of 1. The year that more firms were included in the ranking is 2017, with 30 of the 40 firms having a value of 1. In 2015 and 2019 there were 27 and 22 firms in the ranking respectively.

Regarding ROA, it has remained between 2% and 4% more or less for the periods in our sample. However, we notice there is a great variation among firms, e.g., in 2015 the minimum is -20.92% and the maximum 16.26%. Size, which is the natural logarithm of TA, has been quite constant every year. The mean value has remained at approximately 16% for all the periods. Finally, sector is a dummy variable that indicates if a firm belongs to ESI or not. We can see that the values remain constant over the 3 years, as the sector is a variable that is not commonly changed in businesses. The mean is 0.5 which indicates that 20 out of 40 firms in our sample belong to ESI.

Table 4.3. Descriptive statistics

Variable	2015				2017				2019			
	Mean	Min	Max	SD	Mean	Min	Max	SD	Mean	Min	Max	SD
Quantity	82,68	9,50	230,81	52,12	86,08	36,17	225,57	52,49	98,98	16,03	373,07	68,63
Quality	58,61	0	88,89	18,49	65,28	22,22	100	18,52	65,56	33,33	100	15,67
Regulation	7013	7013	7013	0	7911	7911	7911	0	9195	9195	9195	0
Reputation	0,67	0	1	0,47	0,75	0	1	0,44	0,55	0	1	0,50
ROA	2,77	-20,92	16,26	5,91	4,31	-0,12	16,09	4,22	2,06	-23,81	15,88	6,18
Size	16,70	13,63	21,02	1,75	16,82	13,78	21,09	1,69	16,91	13,90	21,14	1,66
Sector	0,50	0	1	0,51	0,50	0	1	0,51	0,50	0	1	0,51

4.6.2 Correlation analysis

Before the panel data analysis, a Spearman correlation analysis was performed to see the bivariate relationships among the variables (Table 4.4). Spearman correlation does not require normally distributed variables (Schober et al., 2018). As our data doesn't follow a normal distribution, Spearman correlation is indicated instead of Pearson's correlation.

There is a positive and significant relationship between quantity and reputation; quantity and size; and quantity and sector. Regulation and size are also positively and significantly associated with quantity. We find a negative significant relation between size and ROA, and size and sector. Finally, the highest significant and positive association is between size and reputation.

The assumption of no perfect multicollinearity was tested by using the VIF and tolerance. A VIF value greater than 10 (O'Brien, 2007; Thompson et al., 2017), or a tolerance below 0.20 (O'Brien, 2007; Thompson et al., 2017) indicates serious collinearity problems. We can see in Table 4.4, that the VIF values for the variables range from 1.035-1.564, and the tolerance from 0.639-0.966. We can conclude that there is no multicollinearity concern among the input variables in our study.

Table 4.4. Spearman correlation matrix

Nº	VIF	Tolerance	Variables	1	2	3	4	5	6	7
1			Quantity	1						
2			Quality		1					
3	1,035	0,966	Regulation	0,116 (0,208)	0,150 (0,103)	1				
4	1,419	0,704	Reputation	0,307*** (0,001)	0,388*** (0)	-0,108 (0,242)	1			
5	1,086	0,920	ROA	0,092 (0,319)	-0,076 (0,41)	-0,102 (0,269)	-0,054 (0,556)	1		
6	1,564	0,639	Size	0,239*** (0,009)	0,260*** (0,004)	0,072 (0,435)	0,485*** (0)	-0,400*** (0)	1	
7	1,124	0,889	Sector	0,310*** (0,001)	-0,028 (0,759)	0 (1)	0,088 (0,34)	0,127 (0,167)	-0,166* (0,07)	1

Note: *, ** and *** correlation statistically significant at the 0.10, 0.05, 0.01 levels, respectively (two-tailed). We don't show correlation coefficients between 1 & 2 because they are both independent variables

4.6.3 Regressions

We employ OLS, fixed effect (FE) and random effects (RE) models to analyse the data. Then, to select which of the three static panel data model is more appropriate, we run the F-test and the Hausman Test. We also check for serial correlation and heteroskedasticity. First, we show the results for the regression in which quantity is the independent variable, and then we proceed with quality as the independent variable.

Quantity regression

F-test is used to determine which model is more appropriate between OLS and FE model. The null hypothesis is that all fixed effects (FE) constants are zero. The test results indicate that the F-test = (6,0307; p = 1.651e-11). Therefore, the null hypothesis is rejected, thus the FE model is selected.

To select between FE and RE we continue to use the Hausman test (Hausman, 1978). We test the null hypothesis that the RE model is appropriate. The results (1.0195; p= 0.9068) show that the null

hypothesis is accepted. Therefore, the findings of the RE model were considered for further discussion below.

In the selected model we check for autocorrelation issues. We perform two test to detect serial correlation: the Durbin-Watson (DW) test, and the Wooldridge test (Wooldridge, 2002). The null hypothesis of both test is that autocorrelation does not exist in the model. The results of the DW test (1,8168; $p= 0.1424$) and the Wooldridge test (2.1292, $p= 0.546$) indicate that the null hypothesis is accepted, thus there is no serial correlation issues in this model.

We also aim to test the null hypothesis that there is no heteroskedasticity in the model. We use the Breusch-Pagan test, which results (42.966; $3.754e-08$) indicate that the null hypothesis is rejected, thus there is heteroskedasticity issue in our model. To deal with the heteroskedasticity problem we obtain heteroskedasticity robust standard errors and their corresponding t values (Zeileis, 2004). The robust random effects model is provided in Table 4.5.

Quality regression

We employ the F-test to determine which model (OLS or FE) is best to estimate our regression. The results of the F-test (3.7495; $p= 4.76e-07$) indicate that the null hypothesis is rejected. Hence, the FE is selected. We continue with the Hausman test to decide between FE and RE. The results (1.0258; $p= 0.9059$) show that the null hypothesis is accepted. Therefore, the findings of the RE model were considered for further discussion below.

In the selected model we perform two test to detect serial correlation: the Durbin-Watson test, and the Wooldridge test. The results of the DW test (1,8348; $p= 0.1617$) and the Wooldridge test (5.1316, $p= 0.1624$) indicate that null hypothesis is accepted, thus there is no serial correlation issues in this regression.

We use the Breusch-Pagan test to check if there is heteroskedasticity problem in our model. The results (8.1272; 0.1494) indicate that the null hypothesis is accepted, thus we confirm there is no

heteroskedasticity in our model. The regression results are provided in Table 4.5.

Regressions results

In the following table we can see the results for both regressions (quality and quantity) using the RE models. For the quantity regression, we provide the robust random effect model, where heteroskedasticity issue is solved.

Table 4.5. Regressions results using the RE models

<i>Dependent Variable</i>	Quantity	Quality
<i>Independent Variables</i>	<i>Coefficients</i>	<i>Coefficients</i>
Intercept	-150,35*	10,4428
Reputation	20,594**	12,3798***
Regulation	0,0085**	0,0036***
ROA	0,7906**	-0,1458
Size	7,7973**	0,9714
Sector	47,3501***	-0,8560
N	120	120
R ²	0,1945	0,1588
Wald X ²	27,5354***	21,5205***

Note: * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

According to the results, reputation has a positive significant effect on quantity ($\beta=20.59$; $p < 0.05$); and quality ($\beta=12.37$; $p < 0.01$) of reporting, thus H1 and H2 are accepted. These findings are in line with prior studies (Castilla-Polo & Sánchez-Hernández, 2020; Kansal et al., 2014; Michelon, 2011). They suggest that firms with a high reputation are more pressured to report larger amount of NFI, and high-quality reports to maintain or gain more reputation.

Moving to regulation, we can see that it also shows a positive and significant effect on both quantity ($\beta=0.0085$; $p < 0.05$) and quality ($\beta=0.0036$; $p < 0.01$). Hence, H3 and H4 are also accepted. These

results show us that the increase of regulation regarding NFI reports have served to improve these reports among firms.

Regarding control variables, we find surprising results. Profitability, size, and sector are found to have a positive and significant impact on the quantity of NFI disclosed. We can see that having more available resources, higher visibility and belonging to ESI drives firms to disclose more NFI information on their reports. However, we cannot say the same for the quality levels of the reports, as a significant relationship wasn't found. We can see that these variables increase the amount of NFI, but they don't seem to increase the quality levels.

4.7 DISCUSSION AND CONCLUSION

Using panel data techniques this paper aims to clarify the relationship between reputation and NFI reports; and the impact of regulation on reporting: in other words, how the shift from voluntary to mandatory reporting has affected them.

Previous studies on reporting usually include only a single variable: quality or quantity of reporting, which we think may lead to the contradictory results found in the literature. We find that using quantity as a proxy of quality is a common practice among academics even though there is empirical evidence that it is not a good proxy (Castilla-Polo & Ruiz-Rodríguez, 2021). In our study we measure both variables to analyse which is their relationship with the reputation and regulation of the firm. We examine firms in the IBEX-35 index, which is the main national and international reference of the Spanish Stock Exchange.

The results of the panel data model analysis reveal that there is a significant positive relationship between reputation and the quantity and quality of the NFI disclosed by firms. In other words, our results show that highly reputed firms are the ones that disclose more extensively and with higher quality levels. These findings are in line with prior studies such as Kansal et al. (2014), Michelon (2011) and Mishina et al. (2010). They suggest that firms with a high reputation

are more pressured to report a larger amount of NFI, and high-quality reports to maintain or gain more reputation. Firms in a high reputation position will be subject to more public scrutiny and are more vulnerable to disappointing stakeholders who hold high expectations (Mishina et al., 2010). These findings are also supported by different theories. For instance, the most used one: legitimacy theory, indicates that NFI reports provide a way of communicating with stakeholders and maintaining their support (Branco & Rodrigues, 2008).

We also find that regulation has a positive significant effect on the quantity and quality of the report. This means that the shift from voluntary to mandatory has accomplished the objective of increasing the extension and quality of NFI reports. This is in line with prior studies that found that regulation affects positively the extension of reports (Agostini & Costa, 2018; Arif et al., 2022; Matuszak & Róžańska, 2021; Ottenstein et al., 2022; Yang et al., 2021) and on their quality (Caputo et al., 2020; Habek & Wolniak, 2016; Haji et al., 2022; Ottenstein et al., 2022; Yang et al., 2021).

The results of this study have important implications. From a theoretical point of view, we helped to clarify the relationship between reputation and reporting, and the effects of regulation. As we presented earlier, there are mixed results about it in the literature. This could be due to the numerous analyses performed with cross-sectional data. We provide some insights on the link and sign of the mentioned variables.

We make some methodological contributions by performing a panel data analysis, which is a method that minimizes estimation bias compared to time series or cross-sectional data. This represents an added value because we find that previous studies are mostly performed with cross-sectional data analyses.

We also contribute by studying both the quantity and quality of reporting. We find that using quantity as a proxy of quality is a common practice among academics even though there is empirical evidence that it is not a good proxy (Castilla-Polo & Ruiz-Rodríguez, 2021). Also, quantity has been paid more attention than quality

(Castilla-Polo & Ruiz-Rodríguez, 2021), due to the difficulty of measuring the latter (Brammer & Pavelin, 2008).

Regarding the measuring method, this research also adds some value. For quantity, we correct the number of pages by subtracting all the non-informative images and blank spaces on the reports. In some of them, it represents up to 40% of the extension of the report. To the best of our knowledge, this is the first study subtracting non-informative images and blank spaces of the count of pages. Previous studies are not taking this into account when measuring the extension on reports, which could lead to biased results.

Regarding the practical implications, Miras-Rodríguez et al. (2020) indicated that stakeholders are sceptical because they perceive NFI reporting as a symbolic strategy. Findings such as the ones presented by Schreck & Raithel (2018) contribute to this perception. The authors found that firms with bad CSR performance when increasing the extension of their reports, was not accompanied by a genuine change in strategy and performance. In other words, they are partially engaging in “window dressing”; the increase of the length of the report was not substantiated in a better performance or in a higher CSR commitment. With our findings, we can add some evidence that can enhance stakeholders’ trust in NFI reports. Although previous results in the literature show that bad performers try to mimic the practices of the best firms, our results indicate that there is still prevalence, in terms of quantity and quality, of the highly reputed firms. One could think that quality is harder to mimic, and that extension would be the way in which the worst firms could try to symbolize a good performance. However, we have seen that highly reputed firms are the ones who present, not only better quality NFI reports but also more extended information. By knowing this, we can help increase the belief and trust that the firms’ signals and the increase in transparency they are showing are genuine. This contribution will be of interest to managers as they can use it as support for their transparency policies and NFI disclosure.

The results from this study will be also of interest of policymakers. After examining the reports before, during and after the transposition of Directive 2014/95/UE, we have proven that the shift from voluntary to mandatory reporting has had a positive influence both on the quantity and quality of the report. In other words, policymakers have driven firms to, not only comply with new laws but certainly to report more and better regarding sustainability matters. This can motivate legislators to keep improving the national legal frameworks on this subject, as there are still many aspects left to regulate (Dumay et al., 2016, 2017).

For further research, we suggest studying firms from another country and analysing if they follow the same pattern. Also, it would be interesting to replicate the same study in smaller firms (SMEs) which are not affected directly by regulatory changes, however, regulation could still have some indirect influence on them.

Literature indicated that there is a relation between our control variables (profitability, size, and sector) and sustainability reporting; however, in our results we found this relationship was only significant when studying the quantity of reporting, it doesn't apply to quality. Thus, it would be interesting for further studies to test if these findings are the same when studying other samples and provide insights on why it affects only to quantity and not quality.

This study is not without limitations. First, we are aware that the selection of the constructs and indicators might affect the results obtained. Although we relied on previous literature to select how to measure them, we know that results are constrained to this research design. Second, we only include in the sample the IBEX-35 firms. Even though it is the most representative index in the Spanish stock exchange, it is composed of a limited number of firms in just one country, thus the extrapolation of the results could be questionable.

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**CHAPTER 5: THE
COMPOSITION OF THE BOD
AND ITS EFFECT ON THE
QUANTITY AND QUALITY OF
NFI REPORTS**

Reputation, regulation and corporate governance as determinants of the improvement of NFI reporting

5.1 INTRODUCTION

Although there is extensive literature on the BoD, very little has attempted to determine if and how its composition affects NFI reporting. The BoD is a key element in the organization. Among its responsibilities, we find to address the concerns and protect the interests of the stakeholders aligning the firm's strategy with them. For the directors to be effective on this task they must be able to identify all the claims from the different stakeholders. One way to answer to stakeholders' demands is investing in CSR (Jizi, 2017) and communicating through CSR reports (Pucheta-Martínez et al., 2018). According to stakeholder theory, CSR is the firm's attempt to negotiate its relationship with stakeholders (Ihlen Ø et al., 2011) and considers reports as the mechanism to cover stakeholders' demands (Martínez-Ferrero et al., 2016). One of the reasons is that the reports reduce information asymmetries between management and the different stakeholder groups (Velte, 2022).

Some authors indicate that there might be a relationship between the composition of the BoD and the NFI reports. The argument supporting that idea is that the background, beliefs, and motives of those in charge of formulating and taking decisions in the firm, may influence the outcomes, in this case, CSR disclosures (Khan et al., 2013). It is also claimed that the more heterogeneity among the members of the board, the better representation of the diverse perspectives that businesses require nowadays (Walt & Ingley, 2003). When there are more perspectives, the capabilities of the firm to adapt to new requirements or demands from stakeholders will be higher. And this is relevant because it contributes to the competitive advantage (Barney, 1981).

Research of the BoD has focused mainly on studying financial performance. However, previous studies analysing the relationship between the BoD and some general aspects of CSR are scarce (Rao & Tilt, 2016) and, specifically the link with CSR reporting, which needs even more attention (Cucari et al., 2018). We study different types of directors: independent, proprietary and women directors. Board

independence is one of the most studied characteristics of the BoD, however, there are inconclusive results when the studied relationship is between independent directors and disclosure (Hossain et al., 2017). Regarding proprietary directors, despite being one of the most important shareholders (Cabeza-García et al., 2018; Fuente et al., 2017), we have found a lack of articles studying its relationship with NFI disclosure. Hence, there is a need for more research on this. When it comes to women on the BoD, as Giannarakis (2014) indicates: gender composition has been largely associated with financial performance, but there is no satisfactory evidence with its relationship with CSR reports. Bannò et al. (2021) perform a literature review of 77 articles on the relationship between women on BoD and the disclosure of NFI. Although most studies document a positive impact (Velte, 2022), consensus hasn't been reached yet.

Moreover, most of the research found is focused on studying the impact on the quantity of NFI, however, aspects related to quality are scarcely studied. In this article, we study both variables to see if there are differences on their drivers.

There is also need for more studies that employ panel data. As indicated in the review by Bannò et al. (2021) and Rao & Tilt (2016) most of them use cross-sectional data, hence they might have more difficulties finding causality between the BoD composition and the firm's performance. Rao & Tilt (2016) and Khan (2010) highlight the importance of more longitudinal studies. Khan (2010) indicates that "a longitudinal study in different time settings may offer further glitter on the issue to know the changes of CSR reporting across time on annual reports" (p.102).

We aim to fill these gaps in the literature and contribute to the knowledge about the determinants of quantity and quality NFI. The purpose of our research is to shed some light on the relationship between the BoD and NFI reporting. Specifically, we want to answer to the following questions: Do independent directors increase the quantity and quality of NFI reporting? Do proprietary directors

improve the quantity and quality of NFI reporting? And, do women on the BoD increase the quantity and quality of NFI reports?

We perform a panel data analysis of the Ibex35 firms, including the years 2015, 2017 and 2019. The results show that independent and proprietary directors have a positive influence on the quantity of disclosed NFI, but they seem to be insignificant for the quality of it. It occurs the opposite with women directors: they show no significant relationship with the quantity, however, they positively affect the quality of NFI.

Our study contributes to the existing literature in different ways. We provide insight on the relationship between certain types/characteristics of directors (independent, proprietary and women directors) and the NFI reports. Independent and women directors have been largely studied, however, there are still mixed results in the literature. We also add some evidence to the proprietary director's literature as there are not many studies that analyse its relationship with quantity and quality of the NFI reports. We also follow the indications of previous authors saying that most of studies use cross-sectional data (Bannò et al., 2021; Rao & Tilt, 2016) and that longitudinal studies are needed to provide more insight of the changes across time on CSR annual reports (Khan, 2010). We perform a panel data analysis which can overcome the limitations of cross-sectional studies (Martínez-Ferrero & García-Sánchez, 2017). Also, previous studies mainly focus on studying only the quantity of the disclosed NFI (Barako & Brown, 2008; Cabeza-García et al., 2018; Cucari et al., 2018; Fernandez-Feijoo et al., 2014; Frias-Aceituno et al., 2013; Fuente et al., 2017; Giannarakis, 2014; Khan, 2010). This leaves out other relevant aspects that reflect the quality of the NFI report, such as accuracy, clarity, or relevance. Also, as we have seen with our results, we can obtain different outcomes when measuring quantity and quality as differentiated concepts. Hence, we measure and analyse both the quantity and quality in the same study. There are authors like Al-Shaer & Zaman (2016) that study the quality, however, the measurement they use could be improved by adding a few more sets of indicators. We use

a comprehensive index following the one proposed by Castilla-Polo & Ruiz-Rodríguez (2021). These contributions are relevant for researchers but also have important implications for practitioners. Even though it wasn't one of our main objectives, our findings are useful to set the criteria for the best composition of the BoD that can support the firm's strategic objectives. Also, with our study we provide useful insights for legislators who can present new laws and influence on the composition of the BoD, thus improve the quantity and quality of the NFI reports.

The next section reviews the literature and the link between the BoD and the NFI reports. Then we explain the methodology, where we indicate how all the variables have been measured, and the method we follow to analyse the data. In the results section, we can see the descriptive statistics, correlation analysis and the regression results. Finally, we discuss the findings and their implications.

5.2 THEORETICAL BACKGROUND AND HYPOTHESIS DEVELOPMENT

The BoD plays an important role in the organization. They have the responsibility to align firm behaviour with pressure from all stakeholders (Cucari et al., 2018). Stakeholder theory assumes that firms must fulfil various stakeholders' interests (Velte, 2022). An effective BoD is expected to address the concerns and protect the interests of not only shareholders, but a wider group of stakeholders (Jizi, 2017; Rao et al., 2012). In other words, they must identify the legitimate claims of the different stakeholders and respond to them.

The corporate governance (CG) is one of the main instruments for the supervision of managerial actions (Bannò et al., 2021) and where decisions are taken, including those regarding sustainability issues. The BoD is responsible to set the firm's CSR agenda and develop strategies for sustainable business, among others. The increasing pressure from regulators and powerful groups of stakeholders is

making business adopt sustainable development programs (Jizi, 2017). Also, as a strategy for firm value maximization, boards have become more inclined to invest in CSR and produce NFI reports (Jizi, 2017). Some of the claims of stakeholders can be addressed by publishing CSR reports (Pucheta-Martínez et al., 2018). According to stakeholder theory, CSR is the firm's attempt to negotiate its relationship with stakeholders (Ihlen Ø et al., 2011) and considers reports as the mechanism to cover stakeholders' demands (Martínez-Ferrero et al., 2016).

From an agency theory perspective, NFI reports reduce information asymmetries between management and the different stakeholder groups (Velte, 2022). CSR reports are “part of a firm's communication tool to reduce the asymmetries of information between managers and investors' and is used to produce a better valuation of a company” (Reverte, 2012, p.253). Agency theory argues that managers might tend to misuse their power for personal benefit. In this case, the BoD is supposed to control and protect shareholders' interests (Jizi, 2017). CSR information would perform as a control mechanism between the BoD and other stakeholders (Frias-Aceituno et al., 2013).

Some authors such as Afeltra et al. (2022), Cucari et al. (2018) or Rao & Tilt (2016) claim that the characteristics of the BoD may influence the company's non-financial information (NFI) disclosure. The choices, motives, and values of those who are involved in formulating and taking decisions in the organization may influence CSR disclosures (Khan et al., 2013). Previous studies explain that as CSR and disclosure policies emanate from the BoD, it is possible that the characteristics of the board are determinants of companies' disclosure (Afeltra et al., 2022).

Research on board composition has mainly focused on its effect on corporate financial performance, while CSR and NFI reporting have been paid much less attention (Rao & Tilt, 2016). Despite the important body of literature on CG and CSR separately, the link between them is still scarcely studied. And specifically, the CG-NFI disclosure needs more attention (Cucari et al., 2018; Khan et al., 2013) to explain the

empirical mixed evidence (Jizi, 2017). It is only recently that the relationship between NFI reporting and governance has been paid consideration (Rao et al., 2012). Very limited research has examined whether diversity among the BoD members has any influence on CSR reporting (Rao & Tilt, 2016). Although limited, research suggests that “board diversity to a certain extent can also influence social and environmental aspects of the business (i.e. CSR) (Bear et al. 2010; Coffey and Wang 1998; Ibrahim and Angelidis 2011; Kruger 2009; Post et al. 2011; Ibrahim and Angelidis 1995; Hafsi and Turgut 2013)”(K. Rao & Tilt, 2016, p.331).

Board diversity is becoming increasingly important nowadays. Modern society these days is multicultural, gender sensitive, social, and environmentally concerned, exhibiting diverse backgrounds, etc (K. Rao & Tilt, 2016). Firms are facing more complex economies and more sophisticated demands from stakeholders (Walt & Ingley, 2003). To connect the organization with society and serve the wide community within which they exist, firms need to examine how to organize the composition of the board. It needs to reflect democracy and civil society in its diversity (Walt & Ingley, 2003). Westphal and Milton (2000) explain that “boards have traditionally been viewed as a homogenous group of elites who have similar socio-economic backgrounds, hold degrees from the same schools, have similar educational and professional training, and, as a result, have very similar views about business practices” (p.366). Also, as indicated by K. Rao and Tilt (2016) “homogeneous boards usually think alike and are more likely to have similar perspectives/opinions” (p.331). Due to this shared vision and lack of diverse perspectives, such BoD may not be able to challenge management thinking, thus weakening the quality of the debates (Rao & Tilt, 2016).

Moving from corporate monoculture and the BoD uniformity to a more diverse composition can benefit organizations by being able to better represent the diverse perspectives that businesses require nowadays (Walt & Ingley, 2003). Minority groups on the BoD can stimulate divergent thinking in the decision-making process and offer unique

perspectives that change the conventional wisdom of the group (Westphal & Milton, 2000).

The importance of board diversity can also be explained by the resource-based view (RBV) theory of the firm (Barney, 1981; Galbreath, 2005, 2016; Katmon et al., 2019). Firms organise their internal resources in response to environmental opportunities while counterbalancing the external threat and preventing internal weaknesses to achieve competitive advantage (Barney, 1981). The RBV model examines the firm's internal resources to link them with its performance. In other words, internal resources are considered the cornerstone for firms to achieve competitive advantage (Katmon et al., 2019). There are two different types of resources: tangible and intangible. Tangible resources are financial or physical assets that are of economic value and can be reported in the balance sheet (Galbreath, 2005). Intangible resources can include a wide range of possibilities: capabilities, knowledge, skills, experience... The heterogeneity of resources and capabilities are valuable assets that help the firm build its competitive advantage (Barney, 1981). Diversity in the BoD offers different perspectives in critical decision-making, such as CSR (Rao & Tilt, 2016). More diverse boards will “be able to make decisions based on the evaluation of more alternatives compared to a more homogeneous board (Ayuso and Argandoña 2007)” (Katmon et al., 2019, p.452). The more diverse perspectives, the higher capability of the firms to adapt to new requirements or demands from stakeholders, and thus contribute to the competitive advantage.

Based on the above arguments, several authors suggest that board diversity has the potential to increase the effectiveness of the BoD and thereby performance, including aspects such as NFI reporting (Barako & Brown, 2008; Cucari et al., 2018; Fernandez-Feijoo et al., 2014; Frias-Aceituno et al., 2013; Jizi, 2017; Katmon et al., 2019; I. Khan et al., 2021; Pucheta-Martínez et al., 2018; Rao & Tilt, 2016). Hence, we are going to specifically study different compositions and BoD characteristics to see their influence on NFI reporting.

5.2.1 Independent directors

One of the most studied characteristics of the BoD is board independence (Rao et al., 2012; Rao & Tilt, 2016). Independent directors are considered an important control mechanism of management actions and ensure that shareholders' goals are accomplished (Fama & Jensen, 1983; A. Khan et al., 2013). Agency theory argues that independent directors are more effective in governing and monitoring management practices (A. Khan et al., 2013). This is because they are less involved in the execution of the company's operations, and the CEO has less control over them (Jizi, 2017), therefore they have the capacity to force management to disclose CSR (Rao et al., 2012). They are expected to be more objective (Frias-Aceituno et al., 2013) when taking decisions and more encouraging toward long-term value-maximizing activities and higher level of transparency (Cheng & Courtenay, 2006). To ensure the sustainability of the firm and to reduce information asymmetry with different stakeholders, BoDs with higher proportions of independent directors are expected to direct management toward effective CSR initiatives and facilitate reporting on them (Jizi, 2017).

There are previous studies focusing on the link between independent directors and CSR. K. Rao & Tilt (2016) indicate that most studies linking board independence and CSR present a positive relationship. This is due to mainly two arguments (Rao & Tilt, 2016): first, that outside directors tend to be more sensitive to society's needs (Ibrahim & Angetidis, 1995; Lorenzo et al., 2009). The second argument is that independent directors are more inclined towards compliance with the firm's responsible behaviour and regulation because it will directly affect the directors' reputation (Lorenzo et al., 2009).

Nevertheless, as Frias-Aceituno et al. (2013) highlight, the findings are inconclusive when the relationship studied is between independent directors and disclosure (Hossain et al., 2017). Empirical results still show a disagreement on the significance and sign of this relationship. We can find several studies that indicate that it exists a positive influence from independent directors on CSR disclosures (Barako &

Brown, 2008; Cucari et al., 2018; Rao et al., 2012). Cheng & Courtenay (2006) indicate that higher proportions of independent directors encourage higher levels of voluntary disclosure and facilitate engagement in CSR investments. Cucari et al. (2018) perform a panel data analysis of Italian-listed companies and find that there is a positive effect of independent directors on the level of CSR disclosure. Jizi et al. (2014) emphasize the role of independent directors in promoting not only the quantity but also the quality of NFI information. Chouaibi et al. (2021) and Pavlopoulos et al. (2017) indicate a positive impact on the quality of integrated reports. On the other hand, a negative relationship has been found in other studies (Frias-Aceituno et al., 2013; Haniffa & Cooke, 2005). Frias-Aceituno et al. (2013) performed a panel data analysis of a sample of multinational companies and the results indicated a negative impact. Other authors suggest no significant impact of board independence on the quantity (Giannarakis, 2014; Hossain et al., 2017; Nurhayati et al., 2016; Prado-Lorenzo & Garcia-Sanchez, 2010), and on the quality of NFI reporting (Khan et al., 2021; Li et al., 2013; Omair Alotaibi & Hussainey, 2016).

Due to the mixed results found, there is a need for more studies. Consistent with the abovementioned arguments, we propose the following hypothesis:

H1: Independent directors have a positive impact on the quantity of NFI disclosed

H2: Independent directors have a positive impact on the quality of NFI disclosed

5.2.2 Proprietary directors

There are two types of outside directors: independent and proprietary (Garcia-Torea et al., 2017). As we have already seen, independent directors are one of the most studied components from the BoD. Proprietary directors represent the owners of the firm, the most important shareholders (Cabeza-García et al., 2018; Fuente et al.,

2017), who are interested in NFI disclosure because they worry about the image of the firm as it will impact their reputation and their capital (Prado Lorenzo et al., 2009). In other words, they are interested in the long-term survival of the firm and in maintaining an entrepreneurial reputation that is strongly related to their own (Fuente et al., 2017).

Outside directors are independent from CEOs (Cabeza-García et al., 2018). They tend to pay more attention to stakeholders' interests and motivate firms to be more engaged in sustainability and philanthropic endeavours (Ibrahim & Angetidis, 1995). Being independent from the CEO and having knowledge of the outside world are especially significant characteristics in CSR activities (Hafsi & Turgut, 2013).

We haven't found much evidence on the role of proprietary directors regarding the NFI report. The only previous studies we have found studying this relationship or similar variables are: Cabeza-García et al. (2018), Fuente et al. (2017), Garcia-Torea et al. (2017), Molinero-Díez et al. (2022) and Prado Lorenzo et al. (2009). Cabeza-García et al. (2018) focus their study on the impact of gender diversity on CSR reporting. They also go a step forward and consider if the woman is an outside director. However, they do not specifically study the role of proprietary directors. The results indicate that women as outside directors (in which are included proprietary directors) have a positive impact on CSR reporting. Molinero-Díez et al. (2022) also focus on women, classifying them into independent and proprietary directors. They find that CSR (studied as a broad concept, not focusing on CSR reporting) is driven by independent directors, and not proprietary directors who focus more on economic performance and firm value. Prado Lorenzo et al. (2009) found that proprietary directors have no impact on the adoption of CSR reporting standards (specifically the GRI). However, Fuente et al. (2017) indicate that they positively influence the GRI level; and Garcia-Torea et al. (2017) find a positive impact of proprietary directors on the transparency of CSR reports.

Based on the arguments and relationships found in the literature reviewed, we expect that:

H3: Proprietary directors have a positive impact on the quantity of NFI disclosed

H4: Proprietary directors have a positive impact on the quality of NFI disclosed

5.2.3 Women directors

There are several reasons why authors indicate that there may be a relationship between women directors and NFI reports.

Some reasons involve female characteristics. Prior literature suggests that women are more sensitive to society (Al-Shaer & Zaman, 2016; Fernandez-Feijoo et al., 2014), and to non-profit activities (Pucheta-Martínez et al., 2018); and they also behave more ethically than male directors (Pucheta-Martínez et al., 2018). Gibson (1995) indicates that women are often more characterized by communal qualities, which include affection, the ability to devote self to others, awareness of the feelings of others, sympathy, or helpfulness among others. The communal qualities represent in general a concern for the welfare of other people (Gibson, 1995). Women have been socialized to care for the needs of others and are closer towards corporate responsibility (Katmon et al., 2019). These female behaviour patterns are often associated with higher transparency (Frias-Aceituno et al., 2013) especially regarding CSR issues (Prado-Lorenzo & Garcia-Sanchez, 2010).

Another aspect that might relate these two variables is the female leadership style. The literature regarding leadership style distinguishes between democratic/participative vs autocratic; and transformational vs transactional. Democratic leaders allow subordinates to participate in decision-making (Eagly & Carli, 2003; Eagly & Johannesen-Schmidt, 2001). Transformational leaders focus on the importance of socialization as well as providing attention and care to subordinates (Taleb, 2010). This leadership style also is future-orientated rather than present orientated (Eagly & Carli, 2003). This type of leaders “state future goals, develop plans to achieve those goals, and innovate, even when their organization is generally successful” (Eagly & Carli, 2003,

p.815). Transactional leaders see their job performance as a series of transactions with subordinates in which rewards or punishments are exchanged for providing their service or an inadequate performance (Gibson, 1995).

Female leaders tend to be more democratic and participative than male leaders (Eagly & Carli, 2003; Eagly & Johannesen-Schmidt, 2001; Gibson, 1995; Taleb, 2010). Also, they show a more transformational leadership style (Eagly & Carli, 2003; Eagly & Johannesen-Schmidt, 2001). According to some authors, the female leadership style encourages CSR practices (Harjoto et al., 2015; Landry et al., 2016; Setó-Pamies, 2015). It is found that “female directors apply specific initiatives to obtain more democratic and socially and environmentally committed firms [...], and act more responsibly, according to cognitive, psychological and sociological literature and, therefore, may encourage firms to disclose CSR information.” (Pucheta-Martínez et al., 2018, p.186). In other words, they will increase the board’s focus on CSR-related issues (Hossain et al., 2017).

Other reasons involve the decision-making process. Women bring heterogeneity to the board (Katmon et al., 2019; Pucheta-Martínez et al., 2018). As we have seen, “in the context of decision-making, a diverse board is more likely to provide a better platform to share a wider range of opinions, beliefs, networks and backgrounds to balance the firm’s financial and non-financial objectives and address the demands of different groups of stakeholders with conflicting needs” (Jizi, 2017, p.645). The board will benefit from having different perspectives (Al-Shaer & Zaman, 2016; Rao & Tilt, 2016) and more alternatives evaluated (Pucheta-Martínez et al., 2018), which will enhance the quality of the discussions and decisions (Rao et al., 2012), and this will likely be reflected in actions such as providing more and better NFI to stakeholders (Katmon et al., 2019). As Jizi (2017) indicates, gender diversity enhances the ability to answer effectively to the firm’s CSR obligations and report on them.

All these reasons point out that female participation on the BoD increases the probability of voluntary disclosure and improves the

ability of the board to provide better supervision of the firms' reporting (Katmon et al., 2019).

Despite all the arguments in favour of a positive relation, the evidence shows mixed results on the relationship between women on the BoD and CSR reports. Giannarakis (2014) indicates that gender composition has been largely associated with financial performance, but there is no satisfactory evidence of its relationship with CSR reports.

Bannò et al. (2021) perform a literature review of the relationship between women on BoD and the disclosure of NFI. The authors analyse 77 studies, of which 55 find a positive relationship, 5 have a negative relationship, 8 mixed results and 9 have no relationship. We can observe that, although most studies document a positive impact (Velte, 2022), consensus hasn't been reached yet. Barako & Brown (2008), Katmon et al. (2019) and Rao et al. (2012) find that there is a positive relationship between gender diversity and the quantity of NFI disclosed. Barako & Brown (2008) studied Kenian banks, while Rao et al. (2012) and Katmon et al. (2019) study listed firms from Australia and Malaysia respectively. These studies use cross-sectional data, however Frias-Aceituno et al. (2013) study the relationship with panel data from 2008 to 2010 and also find a positive impact of women directors on the quantity of integrated reports. Fernandez-Feijoo et al. (2014) indicate that in countries with a higher proportion of boards of directors with at least three women, the level of CSR reporting is higher. Al-Shaer & Zaman (2016) also find a positive relationship but this time focused not on quantity, but the quality of the NFI reporting. However, we find that the measurement for quality that the authors use could be improved and more complete. They only create an index that goes from 0 points if the firm doesn't present a disclosure, to the maximum points if the firm has a report that has been verified by an external auditor, thus leaving out many other aspects of the reports.

On the other hand, other studies find a negative impact (Cucari et al., 2018; Muttakin et al., 2015). Cucari et al. (2018) with their panel data

study from 2011 to 2014 of Italian listed firms show a negative impact of women directors on the quantity of NFI reporting.

Giannarakis (2014) and Khan (2010) indicate that there is an insignificant relationship between the women's representation in the board and CSR reporting.

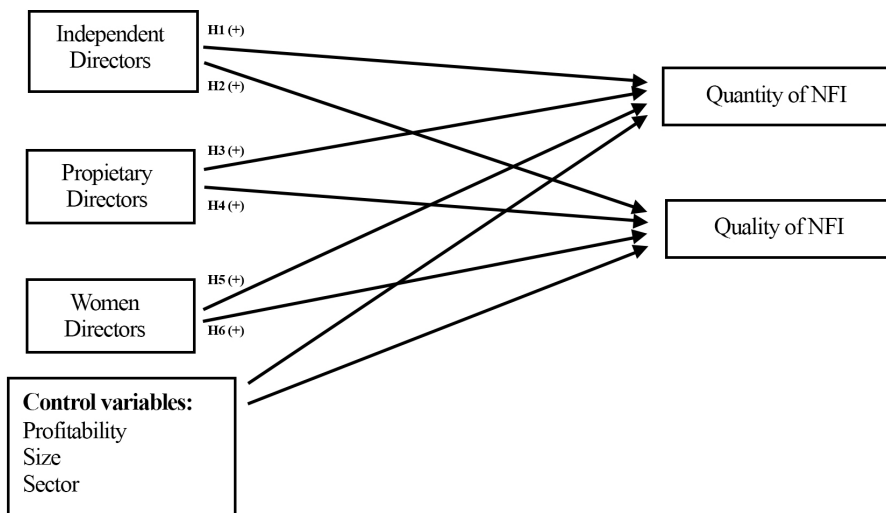
The above discussion on gender diversity leads us to propose that gender-diverse boards may affect NFI reporting. In this paper we test the following hypotheses:

H5: Women directors have a positive impact on the quantity of NFI disclosed

H6: Women directors have a positive impact on the quality of NFI disclosed

In Figure 5.1 we can see the model that we are going to study.

Figure 5.1. Overview of the research model



5.3 METHODOLOGY

5.3.1 *Sample*

The sample of our research is composed by all the firms that were part of the Ibex35 index on the period of 2015-2019. The total number of firms in our sample is 40. The Ibex35 index comprises the 35 most liquid companies traded on the Spanish stock exchange, and it is a representative of Spanish economic development (Odriozola & Baraibar-Diez, 2017). However, every six months the list is revised, and the composition of the index can change. Therefore, our sample is 40 firms and not 35. The years that we analyse are 2015, 2017 and 2019. Thus, we have a total of 120 observations in our study. The selection of the years was motivated by the interest in considering the effect of regulatory changes that were introduced in Spain affecting our selected sample. In 2017 is the first year that the regulatory changes were implemented in Spain, which made it mandatory for some firms to disclose NFI. Thus, with the selected years we have observations before the regulatory changes -2015-, the first year of implementation -2017- and after the implementation -2019-.

5.3.2 *Variables*

Dependent variables. The dependent variables in our study are quality and quantity of NFI reporting.

To measure them we adopted an index from Castilla-Polo & Ruiz-Rodríguez (2021). For quality, we measure two aspects: relevance and accuracy of the information. In Table 5.1 we can see all the information that was collected to measure it. For quantity, we considered some options applied by previous researchers such as counting words (e.g. Lee (2017)) or sentences (e.g. Al-Shaer et al. (2017)) but finally, they were discarded. By counting words or sentences there are many informative charts or figures that would be ignored (Unerman, 2000) thus counting the number of pages solves this matter. However, we

didn't count all the pages, and we excluded the non-informative images from the count, as we will explain later after Table 5.2.

All the data needed was manually collected from the reports found on the firm's website.

Quality index. As we mentioned, we measure two aspects for the quality index. In total, five variables were used, three variables for relevance issues (RE1 to RE3) and two for liability concerns (L1 and L2). The maximum possible total score in each year was 9 = RE1/RE2/RE3/L1.1/L1.2/L1.3/L1.4/L1.5/L2 (as they are dichotomous variables). The variables related to the type of standards followed were included separately in the index (L1.1, L1.2, L1.3, L1.4 and L1.5), because as Castilla-Polo & Ruiz-Rodríguez (2021) indicate, is not the same to follow one or more than one standard in quality terms.

Table 5.1. Variables for the quality index

ID	Variable	Type	Description
RE1	SR strategy	D	Explicit reference to sustainability in business strategy (broad sense or specific contents)
RE2	SR committee	D	Presence or absence of a sustainability committee within the organization
RE3	SR Awards	D	Awards or recognitions related to sustainability performance (broad or specific aspects)
L1.1	GRI	D	Preparing the report in accordance with the GRI guidelines
L1.2	UN Global Compact	D	Adhering to the principles of the UN Global Compact
L1.3	AA1000	D	Adoption of the standard
L1.4	IIFR	D	Using the International Integrated Reporting Framework (IIFR)
L1.5	Other standards	D	Adoption of any other sustainability standard
L2	Assurance	D	If the company has had any external assurance of the NFI

D: dichotomous variable

The quality index is a percentage that indicates the quality level detected for the company "a" in the year "x". It was created as follows:

$$\text{Quality Index (a, x)} = \frac{\sum_{ij=1}^n \text{Score from REi} + \text{Score from Lj}}{\text{Maximum score}} \times 100$$

Quantity index. In the following table we can see the variables that we used for this index.

Table 5.2. Variables for the quantity index

ID	Variable	Type	Description
R1	Annual Report	D	Absence (=0) or presence (=1) of annual reports in which sustainability issues were disclosed
P1	Annual Report: pages	N	Number of pages dedicated to content related to sustainability in this type of report
R2	Integrated Report	D	Absence (=0) or presence (=1) of integrated reports in which sustainability issues were disclosed
P2	Integrated report: pages	N	Number of pages dedicated to content related to sustainability in this type of report
R3	Sustainability report	D	Absence (=0) or presence (=1) of sustainability reports
P3	Sustainability report: pages	N	Number of pages dedicated to content related to sustainability in this type of report

D: dichotomous variable; N: numerical variable

The quantity index, for the company “a” in the year “x” was created as follows:

$$\text{Quantity Index}_{(a, x)} = \sum_{i=1}^3 \text{Type of report (Ri)} * \text{Number of pages (Pi)}$$

Types of report. We took into consideration different types of report as it is often that firms disclose the information in more than just one document, or in more than one format. Thus, we included in our count all the available reports published on the firm’s website that disclosed NFI: annual reports, integrated reports, and other sustainability reports (GRI, corporate governance reports, social reports, environmental reports...)

Number of pages. We wanted to be accurate when counting the pages dedicated to NFI. Thus, we didn’t include pages like the cover, the table of contents, the CEO letter, other general or contextual information (‘about this report’ section, history of the firm or business areas/divisions), or information belonging to the financial statements.

As we mentioned earlier, the only way to include all the informative charts and figures of the report is by counting pages, and not counting words/sentences. However, in the reports there are many non-informative images, which only serve as a decoration, and don't add any information about the topics. By counting pages, we could be including them and not being accurate of the actual amount of information disclosed. Some firms focus on reporting just text, but others format the document with many non-informative photos or big blank spaces, which can lead to rise the number of pages significantly: in some cases, they represent up to 40% of the extension of the reports included in our sample. To deal with this, we corrected the total number of pages by subtracting a percentage of each page according to the size of the image. For example, if we found an image occupying half of a page, we subtracted 50% of that page from the total count of pages.

Independent variables. In our study, the independent variables are independent directors, proprietary directors, and women directors. We measure them as a percentage of the total members of the board. The data about these variables was extracted manually from the corporate governance report of each firm for each year.

Control variables. We control for additional variables that are theoretically and empirically related to NFI reporting:

Profitability. Financially healthy organizations can more easily fulfil their obligations (Brammer & Pavelin, 2008), and have more available resources to allocate to this task. The firms' profitability or the levels of financial performance are related to the levels of disclosure (Brammer & Pavelin, 2008; Branco & Rodrigues, 2008; del Giudice & Rigamonti, 2020; Ortas et al., 2015). We downloaded from the ORBIS database the ROA ratio of each company for every year.

Size. Organizational size is often proposed as a determinant of sustainability disclosures (Ortas et al., 2015). Large firms are more visible; hence they are subject to more pressure and scrutiny from external groups (Brammer & Pavelin, 2008; Branco & Rodrigues, 2008; Ortas et al., 2015). Due to this, large firms may pay special

attention to sustainability disclosure in order to demonstrate that their actions are legitimate (Brammer & Pavelin, 2008). This variable was measured as a natural logarithm of TA. The information about the TA of each company was downloaded from the ORBIS database.

Sector. The sector in which the company operates has been studied as a driver of sustainability disclosures (Kilian & Hennigs, 2014; Niskala & Pretes, 1995). Companies in sectors that can potentially have a high impact on the environment are considered to have greater pressures than companies in less ESI. Thus, the former companies are more likely to disclose more sustainability information than the latter. The sectors that are considered ESI, based on prior literature (Branco & Rodrigues, 2008; Djajadikerta & Trireksani, 2012; Kilian & Hennigs, 2014; Morales-Raya et al., 2019; Zeng et al., 2012) are: pharmaceutical; chemical; forestry, paper and pulp mills; mining; oil and gas; steel and other metals; petroleum and plastic manufacturing; construction and building materials; electricity, gas distribution and water; transport; textile, clothing and fur; and tourism. In our dataset, we assign a value of 1 if the firm belongs to an ESI, and a value of 0 otherwise.

5.3.3 Method

We built the database and then imported it into the software RStudio for analysis. First, we summarize our sample data with descriptive statistics. Second, we conducted a correlation analysis to determine the relationship among the variables in our study. Next, we performed a panel data analysis. Panel data consists of repeated observations of cross-section of companies over time. The use of these techniques allows overcoming the limitations of the low explanatory capacity (Martínez-Ferrero & García-Sánchez, 2017) of cross-sectional (different individuals in a period of time) and time series analyses (one individual for several periods). We employ three different methods of static panel data analysis to estimate our regression: the Pooled OLS, Fixed Effects (FE) and Random Effects (RE). To select which of the three of them is the best method for our model we use the Hausman

test and the F-test. We also check for multicollinearity, heteroskedasticity, and autocorrelation.

5.4 RESULTS

5.4.1 Descriptive statistics

Table 5.3 reports the descriptive statistics of the dependent and independent variables in our study. We have divided the results into the 3 years of our sample to see the evolution of each variable.

We can see that the mean of quality and quantity has increased over the years. This is positive because it means that businesses are reporting more and better NFI. It is also noteworthy that the quantity and quality levels of the report vary greatly among the firms every year. In terms of quality, some firms had 0% of the score of our quality index, while others had almost 90%. Regarding quantity, for example, in 2015 the minimum number of pages disclosing NFI information was 9.5 and 230.81 the maximum; while in 2019, 16.03 and 373.07 respectively. In this variable, we can also see that there has been an increase in the SD throughout the years, which means that in general, the differences in quantity levels among firms have increased.

Independent directors occupy the largest percentage of the BoD, followed by proprietaries and women. We can observe that for independent directors this percentage has remained approximately the same every year, always close to 50% of the BoD. For proprietary directors it has also remained constant and near 30%, but with a slight decrease over the years (from 29,96% in 2015 to 27,81% in 2019). The percentage of women directors in the BoD has increased by around 4% each year, from 18% in 2015 to almost 26% in 2019. The maximum percentage of women directors was in 2017 and it was 46,15%; however, for independent directors and proprietary directors is quite higher: the former reached up to 77,77% in 2015, and the latter reached a maximum of 80% in 2019.

Regarding ROA, it has remained more or less between 2% and 4% for the periods in our sample. However, we notice there is a great variation among firms, e.g., in 2015 the minimum is -20.92% and the maximum 16.26%. Size, which is the natural logarithm of TA, has been quite constant every year. The mean value has remained at approximately 16% for all the periods. Finally, sector is a dummy variable that indicates if a firm belongs to ESI or not. We can see that the values remain constant the 3 years, as sector is a variable that is not commonly changed in businesses. The mean is 0.5 which indicates us that 20 out of 40 firms in our sample belong to ESI.

Table 5.3. Descriptive statistics

Variable	2015				2017				2019			
	Mean	Min	Max	SD	Mean	Min	Max	SD	Mean	Min	Max	SD
Quantity	82,68	9,50	230,81	52,12	86,08	36,17	225,57	52,49	98,98	16,03	373,07	68,63
Quality	58,61	0	88,89	18,49	65,28	22,22	100	18,52	65,56	33,33	100	15,67
(%) Indep directors	47,53	15,38	77,77	14,72	48,53	15,38	75	14,41	49,38	0	76,96	15,75
(%) Prop directors	29,96	0	72,72	20,52	28,06	0	66,66	19,15	27,81	0	80	19,60
(%) Women directors	18,00	0	41,66	10,91	22,25	7,14	46,15	9,36	25,61	0	42,85	10,45
Sector	0,50	0	1	0,51	0,50	0	1	0,51	0,50	0	1	0,51
ROA	2,77	-20,92	16,26	5,91	4,31	-0,12	16,09	4,22	2,06	-23,81	15,88	6,18
Size	16,70	13,63	21,02	1,75	16,82	13,78	21,09	1,69	16,91	13,90	21,14	1,66

5.4.2 Correlation analysis

Before Panel data analysis, a Spearman correlation analysis was performed to see the bivariate relationships among the variables (Table 5.4). Spearman correlation does not require normally distributed variables (Schober et al., 2018). As our data doesn't follow a normal distribution, Spearman correlation is indicated instead of Pearson's correlation.

Women directors are positively associated with quantity and quality. Nevertheless, independent directors and proprietary directors present an insignificant relationship with the two dependent variables.

There are also significant relationships among the three types of directors: a negative association between independent and proprietary directors, however, women are positively associated with both independent and proprietary directors.

Regarding the control variables, the sector is positively associated with quantity. Size is significantly related to all the other variables: it presents a negative relationship with proprietary directors, sector and ROA; and a positive relationship with all the other variables.

The assumption of no perfect multicollinearity was tested by using the VIF and tolerance. A VIF value greater than 10 (O'Brien, 2007; Thompson et al., 2017), or a tolerance below 0.20 (O'Brien, 2007; Thompson et al., 2017) indicates serious collinearity problems. We can see in Table 5.4, that the VIF values for the variables range from 1.073-3.190, and the tolerance from 0.313-0.932. We can conclude that there is no multicollinearity concern among the input variables in our study.

Table 5.4. Spearman correlation matrix

N°	VIF	Tolerance	Variables	1	2	3	4	5	6	7	8
1			Quantity	1							
2			Quality		1						
3	3,185	0,314	Indep directors	0,026 (0,780)	0,089 (0,332)	1					
4	3,190	0,313	Prop directors	0,067 (0,466)	0,014 (0,883)	-0,776*** (0)	1				
5	1,204	0,831	Women directors	0,249*** (0,006)	0,244*** (0,004)	0,319*** (0)	-0,223** (0,014)	1			
6	1,073	0,932	Sector	0,310*** (0,001)	-0,028 (0,759)	-0,025 (0,788)	0,054 (0,560)	-0,024 (0,792)	1		
7	1,188	0,842	ROA	0,092 (0,319)	-0,076 (0,410)	-0,017 (0,855)	-0,042 (0,645)	0,006 (0,952)	0,127 (0,167)	1	
8	1,333	0,750	Size	0,239*** (0,009)	0,260*** (0,004)	0,215** (0,018)	-0,236*** (0,009)	0,231** (0,011)	-0,166* (0,07)	-0,400*** (0)	1

Note: *, ** and *** correlation statistically significant at the 0.10, 0.05, 0.01 levels, respectively (two-tailed). We don't show correlation coefficients between 1 & 2 because they are both independent variables.

5.4.3 Regressions

We employ OLS, fixed effect (FE) and random effects (RE) models to analyse the data. Then, to select which of the three static panel data model is more appropriate, we run the F-test and the Hausman Test. We also check for serial correlation and heteroskedasticity. First, we show the results for the regression in which quantity is the independent variable, and then we proceed with quality as the independent variable.

Quantity regression

F-test is used to determine which model is more appropriate between OLS and FE model. The null hypothesis is that all fixed effects (FE) constants are zero. The test results indicate that the F-test = (5,5073; $p = 1.685e-10$). Therefore, the null hypothesis is rejected, thus the FE model is selected.

To select between FE and RE we continue to use the Hausman test (Hausman, 1978). We test the null hypothesis that the RE model is appropriate. The results (1,5367; $p = 0.9088$) show that the null hypothesis is accepted. Therefore, the findings of the RE model were considered for further discussion below.

In the selected model we check for autocorrelation issues. We perform the DW test to detect serial correlation. The null hypothesis of the test is that autocorrelation does not exist in the model. The results of the DW test (1,8645; $p = 0,1893$) indicate that null hypothesis is accepted, thus there is no serial correlation issues in this model.

We also aim to test the null hypothesis that there is no heteroskedasticity in the model. We use the Breusch-Pagan test, which results (51,869; $1.981e-09$) indicate that the null hypothesis is rejected, thus there is heteroskedasticity issue in our model. To deal with the heteroskedasticity problem we obtain heteroskedasticity robust standard errors and their corresponding t values (Zeileis, 2004). The robust random effects model is provided in Table 5.5.

Quality regression

We employ the F-test to determine which model (OLS or FE) is best to estimate our regression. The results of the F-test (3,904; $p= 2.435e-07$) indicate that the null hypothesis is rejected. Hence, the FE is selected. We continue with the Hausman test to decide between FE and RE. The results (6.2596; $p= 0.2818$) show that the null hypothesis is accepted. Therefore, the findings of the RE model were considered for further discussion below.

We perform the DW test to detect serial correlation. The results of the DW test (1,9238; $p= 0.2809$) indicate that the null hypothesis is accepted, thus there is no serial correlation issues in this regression.

We use the Breusch-Pagan test to check if there is heteroskedasticity problem in our model. The results (21,412; 0.0015) indicate that the null hypothesis is rejected, thus we confirm there is heteroskedasticity issue in our model. The robust regression results are provided in Table 5.5.

Regressions results

In the following table we can see the results for both regressions (quality and quantity) using the RE models. We provide robust random effect models, where heteroskedasticity issue is solved.

According to the results, independent directors have a positive significant effect on the quantity of reporting ($\beta=75.83$; $p< 0.10$), however, it doesn't show a significant relationship with the quality. In accordance H1 is accepted and H2 is rejected. Moving to proprietary directors, we find the same results as with independent directors. There is a positive significant effect on quantity ($\beta=73.90$; $p< 0.10$), but insignificant on quality. Thus, H3 is accepted, and H4 rejected, as there is no significant effect.

When it comes to the effect of women directors, we find the opposite results: the effect on quantity is insignificant, however we find a positive relationship with the quality of the reporting ($\beta=31.03$; $p<0.05$). Hence, H5 is rejected but H6 is accepted.

Table 5.5. Regressions results using the RE models

<i>Dependent Variable</i>	Quantity	Quality
<i>Independent Variables</i>	<i>Coefficients</i>	<i>Coefficients</i>
Intercept	-191,860**	0,8403
Independent directors	75,8323*	13,3390
Proprietary directors	73,9082*	16,9290
Women directors	57,8391	31,0350**
Sector	49,6435***	0,9083
ROA	0,8979**	-0,1130
Size	10,8814***	2,6215*
N	120	120
R ²	0,1728	0,0883
Wald X ²	23,6096***	10,9529*

Note: * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Regarding control variables, profitability, size, and sector are found to have a positive and significant impact on the quantity of NFI disclosed. We can see that having more available resources, higher visibility and belonging to ESI drives firms to disclose more NFI information on their reports. Size also seems to have a positive significant relationship with the quality levels of the disclosure.

5.5 DISCUSSION AND CONCLUSION

The BoD is a key element in taking decisions regarding the firm's strategy. Many authors indicate that the composition of the BoD has an influence on the CSR and CSR reports, as they emanate from it (Afeltra et al., 2022). This study aims to deepen the knowledge on the impact that certain BoD characteristics have on the quantity and quality of NFI reports. Specifically, we study independent, proprietary and women directors. We examine firms in the IBEX-35 index, which is the main national and international reference of the Spanish Stock Exchange.

The panel data analysis reveals the following results. Independent directors present a positive and significant influence on the quantity of NFI, which is in line with previous studies such as Barako & Brown (2008), Cucari et al. (2018) and Rao et al. (2012). Proprietary directors also seem to have a positive significant effect on the quantity of NFI, matching previous studies too, for example, Cabeza-García et al. (2018), Fuente et al. (2017) and Garcia-Torea et al. (2017).

We expected these results because as we argued earlier, independent and proprietary directors are inclined to comply with the firm's CSR and regulation because it will affect their reputation (Lorenzo et al., 2009) and in the case of proprietary directors it will also affect their capital (Prado Lorenzo et al., 2009).

Another surprising finding is that, although independent and proprietary directors have a positive influence on quantity, they seem not to have any significant effect on the quality of the report. This could be due to different reasons. As indicated by some authors (Lorenzo et al., 2009), outside directors will be keen on complying with the firm's CSR and regulation because it will directly impact their reputation. CSR reports have been voluntary since their beginnings and nowadays it still remains like that in many countries around the world (Yang et al., 2021). However, in the last decade, there have been some changes in the European context, which affect the Spanish firms that we include in our study. The EU Directive 2014/95/UE was incorporated in Spain with the Royal Decree-Law 18/2017 and the Law 11/2018. The Directive requires firms to report information on six topics: environmental; social; employee matters; respect for human rights; anti-corruption; and bribery matters. Firms are required to report on these topics, however, other aspects such as following a reporting framework/standard (like the GRI or the IR framework) or the verification by independent assurance providers are optional. Many authors (Al-Shaer & Zaman, 2016; Avram et al., 2019; García-Sánchez et al., 2019; Odriozola & Baraibar-Diez, 2017) consider that these optional aspects are related to the quality of the report, as they are usually included as items in the quality measurements in their studies

(as we also do in this study). This is due to the fact that following a certain reporting standard or assuring the content of the report enhances comparability, reliability, accuracy, clarity, etc (Castilla-Polo & Ruiz-Rodríguez, 2021).

To improve the quality of the report by following these practices is a costly and a time-consuming task. Being verified by an external assurer will bring economic costs to the firm and disclosing according to a specific standard will require the firm to go through a learning process in order to adapt the report to the requirements. Thus, this process will also cost time and economic efforts.

As these aspects are not mandatory by law, independent and proprietary directors might want to save the firm's resources (Prado Lorenzo et al., 2009). They might just focus on complying with the legal requirements (disclosing information about the six topics we have mentioned). Not complying with the law would have a negative impact on the director's reputation, therefore they have a positive impact on the quantity of NFI. However, not providing more quality will not harm their reputation, as it is a voluntary aspect of the law, and it will also save economic and time resources for the firm.

Another possible explanation as to why outside directors do not have a significant effect on the quality of NFI is explained by Dwekat et al. (2021) and Fuente et al. (2017). As they are outside directors, and are considered external professionals, they might "not know the company perfectly and have a lack of suitable training in social and environmental issues that do not traditionally comprise their responsibilities" (Fuente et al., 2017, p.747). As Dwekat et al. (2021) indicate, independent directors could be more concerned about corporate financials than CSR or may not have enough experience and knowledge to improve CSR.

We also find with our analysis the effect of women directors on NFI reporting: they have a positive impact on the quality, but they do not show a significant relationship with the quantity of NFI. These results are in line with prior studies indicating the insignificant effect of

women on the quantity of NFI disclosure (Giannarakis, 2014; Khan, 2010), and positive effect on the quality (Al-Shaer & Zaman, 2016; Katmon et al., 2019).

These findings could be explained by the above-mentioned female leadership style. We saw that women tend to have a transformational leadership style, and men are associated with a transactional style. Transformative style is future-oriented, and these leaders tend to innovate even when the firm is generally successful. On the other hand, transactional leadership is based on a system of reward and punishment. This style is also more present-oriented. We believe that the drivers to improve the quantity and quality of NFI information could be related to leadership styles. As we have mentioned earlier, regulation on NFI disclosure has specified the aspects that firms must provide information about, thus it increases the quantity of information that firms will have to disclose. A transactional leader will worry about complying with the law as they do not want to be punished for inadequate performance. There are other aspects such as the use of standards for reporting and the external assurance of the reports which have been considered as voluntary by the law. Thus, there is no reward nor punishment for these aspects. Following this idea, a transactional leader would not demonstrate interest on them as they are voluntary; on the contrary, transformational leaders would do. Even when the organization is already successful (which we can understand it in this case as disclosing all the NFI that the law requires), this type of leaders will be future-oriented and will consider the voluntary aspects that could increase the quality of the information disclosed. To sum up, the female transformational leadership style could explain the positive impact that women have on the quality of the NFI reports, and the non-significant relationship with the quantity.

Our results are relevant for researchers in different ways. We contribute clarifying the relationship between certain types/characteristics of directors (independent, proprietary and women directors) and the NFI reports. Independent and women directors were largely studied but still presented mixed results. Also, we have found

only a small body of literature focusing on proprietary directors and their impact on NFI reporting. Thus, we contribute deepening the knowledge on this topic.

While literature about the BoD has focused on the impact on the quantity of NFI, studies regarding the quality are scarce. Hence, we also provide more insights about this matter, measuring and including both concepts: quantity and quality.

Our study makes a methodological contribution as well. Previous authors indicated that longitudinal studies are needed to provide more insight of the changes across time on CSR annual reports (Khan, 2010). Therefore, we perform a panel data analysis which can overcome the limitations of cross-sectional studies (Martínez-Ferrero & García-Sánchez, 2017).

The results also have important implications for practitioners and policymakers. Even when this wasn't one of our aims, our findings are useful to set the criteria for the best composition of the BoD that can support the firm's strategic objectives. The results show the importance of the CG when it comes to emphasizing one or another dimension of information transparency. To improve not only the quantity but also the quality of NFI, they need to be aware of the role that the different types of directors play in the BoD. Once the influence of each type of director is demonstrated, it will be interesting to take this into account for the composition of the board in each firm. This way, they will be able to improve quantity or quality according to their strategic objectives.

The results are also of interest to policymakers because we assume that they want firms to disclose more and better NFI reports. With our study, we provide useful insights for legislators who can present new laws and influence the composition of the BoD by establishing quotas. In fact, in 2022 there has been a political agreement in the European Union to impose a gender quota of at least 33% among all directors by 2026 (European Commission Press Release, 2022).

For further research we suggest combining directors' characteristics (Dwekat et al., 2021) looking for moderating effects between the variables. For example, instead of just analysing independent directors as a homogeneous group, it could be enriching for the literature to check if there are different impacts when considering their experience, gender, age, etc of the director. In other words, study if there are differences between women and men independent directors; or classify them with respect to their age or their previous experience, etc. This could be applied not only to independent directors, but also to other type of directors.

Finally, we are aware that this study is not without limitations. We have considered just one country: we include in our sample only Spanish firms. Also, the quantity and quality index we use, although we relied on previous literature (Castilla-Polo & Ruiz-Rodríguez, 2021) might affect the results obtained as they are constrained to this research design.

5.6 REFERENCES

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Reputation, regulation and corporate governance as determinants of the improvement of NFI reporting

CHAPTER 6: GENERAL CONCLUSIONS AND CONTRIBUTIONS

Reputation, regulation and corporate governance as determinants of the improvement of NFI reporting

6.1 GENERAL CONCLUSIONS

This thesis dissertation aims to deepen the knowledge on the topic of NFI reports. Although in the last decade there has been a high production of research focused on them, and there have been important regulatory changes, the disclosures still present some problems. The number of firms that are reporting NFI has increased, however, the NFI reports are still at a low development when compared to financial reports (EY, 2022). There is need for more research that focuses on how to improve the quantity and quality of the disclosures (Ali et al., 2017). For this reason, in this thesis we make an effort to determine some of the drivers for the improvement of the reports in terms of quantity and quality.

In order to meet the objectives, we develop three studies. In the first one, which can be found in Chapter 3, we conduct a literature review following a quantitative method: bibliometric analysis. The results of this analysis help us to organize the previous knowledge and set a path for our next research steps. The two following chapters are empirical studies that focus on identifying determinants of the quantity and quality of the NFI reports. In chapter 4 we focus on two external variables of the firm: regulation and reputation; and in chapter 5 we focus on three internal variables: independent directors, proprietary directors, and women directors.

We summarize the main conclusions derived from each chapter below. Then, we indicate the implications that the results have on academics, managers, and legislators; and finally, we expose the limitations of our studies and avenues for future research.

6.1.1 Conclusions chapter 3: A bibliometric analysis of the literature on non-financial information reporting: Review of the research and network visualization

Chapter 3 is a study conducted to structure the previous theoretical and empirical literature on NFI reporting. For this, we perform a

bibliometric analysis and a literature review, and we find some interesting results.

Thanks to the bibliometric analysis we can see the evolution of the number of documents published since the first publications on the topic. About 90% of the documents were published in the last decade, which indicates the actual relevance of the topic. In addition, we also show the main articles, authors, journals, countries, universities, and the relationship between them. We find that research is mostly dominated by single-country studies, thus there is still need for more comparative studies between countries, specially between developed vs developing countries.

Our study also identifies the main research lines, which are a total of six. We name them: the essence, the determinants, the reports, the IR, the consequences, and the environmental cluster. After the literature review of the research lines, we offer some insights of each of them. Although there are many studies in each of the clusters, there are still some gaps that need to be addressed. For instance, external determinants of reporting need more attention from researchers, as the focus has been on internal factors (Ali et al., 2017). Regarding the consequences of reporting, most of the literature is concentrated on financial outcomes, hence studies involving other type of variables, such as reputation, are required. Finally, the IR standard for reporting is still at a very early stage (Dumay et al., 2016) and needs much more development from researchers, but also from practitioners (Dumay et al., 2017).

6.1.2 Conclusions chapter 4: The influence of reputation and regulation on the quantity and quality of NFI reports

The purpose of this chapter is to determine if there is any influence of the firm's reputation and the regulation on the quantity and quality of NFI reporting. With this study we try to contribute to the literature regarding the determinants of NFI reporting, specially answering to the call for more studies involving external factors (Ali et al., 2017). We use panel data techniques, as they present different advantages

compared to cross-section or time-period methods (Martínez-Ferrero & García-Sánchez, 2017).

Our results indicate that there is a positive relationship between reputation and the quantity and quality of the NFI on the reports. This means that higher reputed firms disclose more extensively and with higher quality levels than firms with lower reputation. This is in line with previous studies such as Kansal et al. (2014), Michelon (2011) or Mishina et al. (2010).

Furthermore, we also confirm that regulation has a positive influence on both dependent variables. The increase of regulation and the shift from voluntary to mandatory has had a positive effect extending the amount of NFI disclosed and improving the quality of the reports (Agostini & Costa, 2018; Arif et al., 2022; Caputo et al., 2020; Ottenstein et al., 2022).

From these results, we draw the following implications. First, our results can help enhance the credibility of the reports. As we have argued earlier in the chapter, prior literature (Schreck & Raithel, 2018) shows that firms with a bad CSR performance try to mimic the practices of the best firms and engage in window dressing. However, with these results we show the prevalence of highly reputed firms in terms of quantity and quality of NFI. By knowing this, stakeholders can take the NFI reports as genuine signals from the firms. Second, we can see that the efforts made by legislators with the objective to improve NFI reporting by firms have achieved their purpose. We believe that these results provide relevant and useful contributions and offer new motivations for firms and policymakers to keep improving this tool.

6.1.3 Conclusions chapter 5: The composition of the BoD and its effect on the quantity and quality of NFI reports

Chapter 5 analyses the composition of the BoD with the aim to determine which is its influence on NFI reports. Again, we analyse two variables of the reports: quantity and quality; and we follow panel data techniques.

We propose that a higher diversity on the BoD will affect positively on our dependent variables. Specifically, we study three types of directors: independent directors, proprietary directors, and women directors. Our arguments are based on agency theory (Fama & Jensen, 1983; A. Khan et al., 2013) and the RBV theory of the firm (Barney, 1981; Galbreath, 2005, 2016), but it also includes leadership styles perspectives (Eagly & Carli, 2003; Eagly & Johannesen-Schmidt, 2001).

From the study, we obtain the following results. Independent and proprietary directors have a positive effect on the quantity, however we don't find any significant relationship with the quality of the reports. These surprising findings are discussed in the chapter, and we provide previous literature that also match our results, such as Cabeza-García et al. (2018), Cucari et al. (2018), Prado Lorenzo et al. (2009) or Rao et al. (2012). Finally, regarding women directors we find that they have a positive relationship with the quality of information, but there is no significant effect on quantity. These results could be due to the leadership style of women, and they are also found in prior literature (Al-Shaer & Zaman, 2016; Giannarakis, 2014; Katmon et al., 2019; H. U. Z. Khan, 2010). From our view, this study provides highly interesting findings on how the composition of the BoD can affect separately the quantity or quality of NFI reports.

6.2 CONTRIBUTIONS AND IMPLICATIONS

In this section we describe the implications of the studies that we conducted for researchers, managers, and policymakers. Finally, we expose the limitations of the thesis dissertation and indicate some future research directions.

6.2.1 Contributions to the literature and implications for researchers

Our review of the literature contributes in several ways. There was a great quantity of documents being published on the topic in the last decade. First, we contribute by organizing the exponential growing literature thanks to the use of quantitative techniques. We structure the topic and present six different lines of research. Other relevant

information is also provided such as main authors, most studied variables, gaps or avenues for future research. All of this is useful for senior and junior researchers that are looking to initiate a study on this topic and for instance need a map or a general view, need to identify the most relevant authors of a specific research line, need to access the most important publications or wish to make a collaboration with other research centres or institutions, among others.

We empirically contribute to the literature on the determinants of the quantity and quality of NFI. There were some gaps and mixed results in this stream of research, thus we address these issues. We help to clarify the relationship of reputation and reporting, and also study how have the regulatory changes influenced the quantity and quality of NFI provided by the firms. Furthermore, we clarify the role of independent and women directors, and we add evidence on a very scarcely studied variable which is proprietary directors.

We also make some methodological contributions. Studies using panel data techniques on the topic are scarce, as the vast majority uses cross sectional data analyses. Hence, we add evidence to the literature using panel data, which has proven many benefits compared to times series or cross-sectional data. Furthermore, it is hard to find in the literature studies that differentiate the concepts of ‘quantity’ or ‘quality’ of the NFI reports, or studies that include both. As we have seen with our results, it is important to make this differentiation as you can obtain different outcomes for each of them. In this sense we have expanded the knowledge on this, especially with the variable ‘quality’ which is less studied than quantity. Finally, we suggest and use an improved way to measure the quantity of NFI. It is common that authors count the number of pages, which may lead to overcounting the pages due to non-informative images, blank spaces, etc. We applied a correction factor to the count to deal with this issue.

6.2.2 Contributions for managers and policymakers

The results of our studies also have valuable implications for managers and legislators. First of all, they can benefit from the map of the

literature that we elaborated. The structure that we present will be helpful for managers to easily identify issues that might be relevant for them. For instance, if they needed to improve their NFI reports, they could access knowledge regarding the different type of standards, the impact of external assurance, etc. Moreover, our results show that the firms that are issuing the best reports are the best reputed ones. This is a very relevant outcome in a context where many stakeholders think that NFI reporting is a symbolic strategy, and that firms with a bad environmental or social performance try to mimic good firms by increasing the extension of the reports (Miras-Rodríguez et al., 2020). Our results indicate that the extension and the quality of the NFI reports answers genuinely to the practices of the best firms, and that it is not the result of engaging in “window dressing”. In other words, we can help to increase the trust among stakeholders. Managers can use this outcome to support their transparency policies and their NFI reports. Finally, our results indicate managers how to strategically organize the composition of the BoD to achieve better quality or more extension of the NFI reports. With our results, they are aware of the role that each director plays in the BoD for the improvement of one or another dimension (quantity or quality). Once they know this, they can modify the composition in a way that best suits the firm’s strategic objectives or needs.

Regarding policymakers, the structure of the literature that we provide can also be useful for them. It can help them to detect researchers’ concerns on NFI reporting matters that need to be more developed. Then, they can make changes on those aspects through new regulations. For example, in the recent EU Directive 2022/2464 (European Parliament, 2022) the need for a mandatory common sustainability reporting standard is mentioned, and as a result the European Parliament is working towards this. Another implication regarding policymakers is that the results of our thesis dissertation might help stimulating regulatory changes from legislators. We have shown the positive and significant impact that regulatory changes have on the quantity and quality of the reports. Firms have not only complied with the law, but also, they have reported more and better. Having

evidence of these improvements driven by the legislation might motivate policymakers to keep building the legal frameworks on this subject. Finally, the last one of our empirical studies, indicates how the composition of the BoD affects the quantity and quality of NFI. Assuming that legislators aim to improve the reports, they could make use of our outcomes and implement mandatory quotas of representation that modify the composition of the BoD. All in all, the results of our three main chapters help policymakers: first, to detect new aspects that might need legislation; second, to stimulate regulatory changes by proving their positive effect on reports; and finally, we provide them with information of how the composition of the BoD affects NFI, which is one aspect that they can modify through legislation to improve the reports.

6.2.3 Limitations of the doctoral thesis

This thesis dissertation, like any other study, presents some limitations.

First of all, we acknowledge limitations regarding the sample. We haven't limited our sample to a specific sector or industry in our studies, however, we present some limitations regarding other aspects. We have only included listed companies in our sample. Also, even though we didn't establish any selection criteria about the size of the firms, the sample is only composed of large firms, thus we don't have any data on SMEs. Due to these reasons, we account for limitations in its heterogeneity and the influence of the specific context where the firms belong to. We must consider these when extrapolating or generalizing the results to companies with characteristics other than those we have studied.

We also find some limitations regarding the measurements that we used for the quantity and quality variables. Deciding how to measure them was a critical step, as we are aware that this would affect the results of the studies. We found many different measurements in the literature, from very simple to highly complex. We didn't incline for the simplest measurements, and we tried to improve the ones we used, for example, we included a correction factor when counting the number

of pages. However, due to our limited resources, we didn't include in the measurements other type of information from the reports that could be relevant to the research, for instance, different environmental or social indicators, etc. Considering the availability of resources, we compared different options and we tried to be very cautious in the selection of the measurement of the dependent variables.

Furthermore, the analyses of the NFI reports have been done by one researcher. Although we tried to follow a protocol to guarantee the rigour of the analyses, there may be certain bias or a degree of subjectivity in the data obtained, especially when counting the number of pages, or applying the corrective factor for non-informative images.

Another limitation is that the explanatory power of the theoretical models that we designed to explain the determinants of the quantity and quality of NFI is not very high. The highest explanatory power is obtained when quantity is the dependent variable. For example, in the first study in which we included regulation and reputation, the explanatory power of the model is 19.45% when quantity of NFI is the dependent variable, and 15.88% when it is quality. In the second study, in which we included the different variables related to the board of directors, the explanatory power achieved for quantity and quality is 17.28% and 8.83%, respectively. We indicate these percentages as a limitation, since they are not very high. Despite that, we believe that the results are still valuable since they do reveal important factors for improving the quality and quantity of NFI. In addition, the results show that the quantity and quality variables do not respond equally to the same determinants, since they are different concepts, which also contributed to the literature. This limitation encourages us to continue delving into both variables, especially quality, which is the least studied one in the literature, and the one that we explained the least with our models.

Another limitation is that our models do not include interactions between variables. We have not considered mediating or moderating variables, which could have helped to improve the explanatory power of the models. As we already commented in chapter 5, and we

suggested as a future research direction, it would be interesting to add this type of interaction, for example, in the case of the composition of the board of directors, since there are many characteristics that could be considered combined between them (e.g., independent female directors)

We believe that some of the limitations that we have exposed represent opportunities for future research.

6.2.4 Directions for future research

To conclude the doctoral thesis, we make some interesting suggestions for future research. In each of the three main chapters of the dissertation we have already mentioned specific suggestions to consider for future studies. That is why in this section we are only going to make some general indications regarding the sample, the methodology, and a couple of new issues to be addressed.

The first suggestions are regarding the sample and data. As we have mentioned earlier, the sample has some limitations, hence the first suggestion is to address this issue. It would be advisable to work with a larger sample, while increasing the heterogeneity. For instance, including SMEs in the study would be interesting. The recent EU Directive 2022/2464 (European Parliament, 2022) is making NFI reporting mandatory for listed SMEs. This opens the possibilities to study which factors drive SMEs to improve quantity and quality, which are the specific challenges or difficulties that face this type of firms, and see if the legislation and the evolution from voluntary to mandatory reporting has the same effect on them as it did on larger firms.

Another suggestion is to include more countries in the sample, specially comparing developed and developing countries. This may lead to different results if the countries have many cultural differences between them. For example, the role that women directors play in the BoD may not be the same in a developing country and hence not have the same effect on the quantity or quality of NFI.

We also indicate suggestions regarding the methodology. We are aware that studies with panel data, like the ones we performed are

valuable and bring many benefits. However, there are other methodologies that also have other advantages, and we think that they could complement each other. When studying the reports of a large quantity of firms during several years, as we have done in this thesis, there are some limitations on the depth of the analysis of the content of the reports. We have tried to standardize the procedure for data extraction; thus, the extracted data and indicators may have not captured all the details of the reports, etc. For this reason, we suggest conducting a case study with a small number of firms to study in detail the subtleties of the changes on the content and quality of the information provided. For example, to study the type of language used in the reports (subjective or objective...), whether or not negative impacts are disclosed and see what is the strategy followed by the firm when communicating them (for instance, if the company tries to avoid giving negative information, or if, on the other hand, it communicates it proactively and takes responsibility for it), etc.

Finally, we make a couple of suggestions regarding topics for future studies. The first one is regarding the European Sustainability Reporting Standards (ESRS). This is the name of the new standards for non-financial reports that are being developed by the European Financial Reporting Advisory Group (EFRAG) requested by the European Commission. The new Directive (EU) 2022/2464 entered into force in January 2023, and establishes that companies subject to it will have to disclose according to the ESRS. This new standard is the beginning of a future line of research, since it opens the door to the analysis of some related issues. For example, what are the difficulties or challenges that companies will have to face to adapt to this new standard? There are companies that were already using other standards such as the GRI, or the IR, and now they must change and adapt their reports to the new standards. What associated costs does this adaptation process entail? On the other hand, do these new standards improve or worsen the quantity and quality of the NFI disclosed by the companies, in comparison with the standards they were already using? Perhaps by having to make this change and until companies adapt to it, it might bring along a worsening in these variables. It could also happen that

companies adapt quickly and that there is no worsening. Another question to analyse is whether the objective of these new European standards is accomplished or not: has it been possible to achieve better comparability between reports from different companies, and even from different countries? These and other issues arise due to this new European regulation.

The second and last suggestion regarding a topic to investigate is related to a criticism that is made about non-financial reports. According to the legislation, non-financial reports must disclose information on six topics: environmental, social, employees, human rights, anti-corruption, and bribery. This list of topics sets the focus of non-financial reports on aspects related to sustainability or CSR. However, NFI is by definition a broad term and includes everything that is not included in the "financial reports", that is, the financial statements that companies present annually. There are some aspects that are left out of the financial statements and that do not strictly correspond to CSR either, and therefore are being forgotten. We are talking about intangible assets. Intangible assets are not reflected in the current financial statements, and as we have seen, they are not being included in NFI reports either. These highly valuable strategic assets, in which many companies base their competitive advantages on, are not being captured in the financial reports. As indicated by Ciprian et al. (2012) "companies should compensate this by extending reporting on intangible assets, especially non-financial reporting" (p. 688). Greater disclosure of intangible assets (for instance, the company's reputation) will better communicate the firm's situation, reflecting its real value. The great importance of intangible assets, and the problems that exist to measure and account for them (Kristensen & Westlund, 2003), makes it necessary to pay more attention and contribute in this regard.

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RESUMEN

Reputation, regulation and corporate governance as determinants of the improvement of NFI reporting

INTRODUCCIÓN Y MOTIVACIÓN

Han pasado muchos años desde que la responsabilidad social corporativa (RSC) y la divulgación de información no financiera (INF) despertaban interés solo en unas pocas organizaciones (Hąbek & Wolniak, 2016). Hoy en día, los informes de INF están entre las principales prioridades de las empresas más importantes del mundo, y son vistos como una parte importante de la estrategia debido a los múltiples beneficios asociados a ellos (Castilla-Polo & Sánchez-Hernández, 2020).

En las últimas décadas se ha hecho evidente la relevancia que tienen los informes no financieros a nivel mundial, como se puede observar con la evolución de la emisión de este tipo de informes. Podemos hacer una comparación entre 2002 (Kolk & van der Veen, 2002) y 2022 (KPMG, 2022) gracias a algunos estudios realizados por KPMG. En 2002, el 45% de las empresas del G250³ publicaron un informe de sostenibilidad. Para ser un año en que la divulgación sobre INF era voluntaria, puede parecer un gran porcentaje de empresas. Sin embargo, el 73% de los informes que se publicaron cubrieron solo aspectos de salud y seguridad. Solo el 10% abordó temas ambientales y sociales al mismo tiempo. Si echamos un vistazo dos décadas después, en 2022, los números indican que el 96% de las empresas del G250 informan sobre asuntos medio ambientales, sociales y de gobierno corporativo en el mismo informe. Para las empresas N100⁴ el 23% de las empresas divulgaron INF en 2002, mientras que para 2022 ascendió al 79%. No solo ha aumentado el porcentaje de empresas que divulgan, sino también la diversidad de aspectos sobre los que divulgan información. La verificación del informe por un tercero también ha aumentado: del 29% de los informes divulgados por las empresas G250 en 2002, al 63% en 2022. En España el porcentaje es aún mayor: el 85% de las empresas N100 españolas divulgaron INF en 2020 (KPMG,

³ top 250 compañías de la lista Fortune Global 500

⁴ top 100 compañías por ingresos en cada uno de los X países (En 2002, X=19; En 2022, X=58)

2020), y el 94% de estas empresas tienen el informe verificado por un auditor externo.

Divulgar INF, que comenzó como una acción voluntaria de las empresas, se está convirtiendo en un aspecto crítico para ellas. No solo para las grandes empresas, como puede parecer por la información que hemos proporcionado anteriormente centrada en las empresas G250 o N100. Es cierto que el primer intento de hacer obligatorios estos informes en Europa se dirigía a las grandes empresas. La Directiva de la UE 2014/95/UE fue promulgada por el Parlamento Europeo en 2014. Esta directiva intentó mejorar la transparencia al exigir que las empresas reporten información sobre seis temas: ambiental, social, empleados, derechos humanos, anticorrupción, y soborno. Sin embargo, cambios legislativos recientes han ido haciéndolo obligatorio progresivamente para más empresas, independientemente de su tamaño. El 5 de enero (2023) entró en vigor la Directiva (UE) 2022/2464 (European Parliament, 2022) y requerirá que aproximadamente 50.000 grandes empresas y pymes cotizadas informen sobre sostenibilidad. Estas directivas envían un mensaje claro a las organizaciones sobre el compromiso político con la transparencia, la cantidad, la calidad y la fiabilidad de la INF.

La presentación de INF ha ganado gran protagonismo no solo por el aumento de la legislación, sino también por el creciente interés por parte de los grupos de interés. El contexto empresarial actual involucra escándalos corporativos (Hąbek & Wolniak, 2016) que incluyen corrupción, fraude financiero, trabajo infantil, impactos ambientales negativos, etc. En consecuencia, los diferentes grupos de interés como gobiernos, inversores, accionistas, consumidores o comunidades locales están aumentando sus demandas. Exigen que las empresas vayan más allá de sus obligaciones legales, asuman la responsabilidad de sus impactos y aumenten la transparencia (Hąbek & Wolniak, 2016). Una forma de satisfacer las necesidades de los grupos de interés es comunicar a través de informes (Martínez-Ferrero et al., 2016) el desempeño social o ambiental de la empresa, por ejemplo: cómo abordan las desigualdades sociales, reducen sus externalidades

negativas, actuaciones para evitar riesgos laborales, etc. En una encuesta realizada en 2021 por EY (EY, 2021), se encontró que el 78% de los inversores encuestados realizan una evaluación estructurada y metódica de la divulgación de INF en comparación con el 32% tres años antes.

Si bien ha habido avances en términos de calidad y extensión de los informes, especialmente desde que se promulgaron las directivas, aún queda un largo camino por mejorar. La relevancia que tienen hoy en día los informes de sostenibilidad para las empresas los convierte en un objeto de estudio crucial. Estos informes aún carecen de madurez en comparación con los estados financieros (EY, 2022). Por ejemplo, como podemos ver en el estudio realizado por EY (2022) sobre las empresas del IBEX35, las empresas divulgan información sobre todos los aspectos señalados por la ley, sin embargo, algunos de ellos están poco desarrollados. El aspecto de gobernanza, que es el más desarrollado, tiene una puntuación de 2,9 sobre 5, pero aspectos como empleados o derechos humanos se puntúan con un 1,9 y un 1,7 sobre 5 respectivamente. Otro ejemplo es que, aunque un alto número (94%) de las empresas N100 españolas verifican su informe por un auditor independiente, el informe de KPMG (2020) señala también que: solo el 12% verificó el informe completo, mientras que el 80% verifica solo algunos indicadores específicos. Asimismo, el nivel de verificación en el 85% de las empresas es el más limitado. El hecho de que los informes se verifiquen solo de forma parcial y de forma limitada podría crear dudas sobre la credibilidad de los informes. Estos estudios ponen de manifiesto las deficiencias en cuanto a la calidad y extensión de la INF divulgada.

Otro problema que existe es que actualmente la INF es heterogénea y no comparable. Esto se debe a diferentes razones: la existencia de diferentes estándares y mediciones dificulta la comparación de la información entre diferentes empresas (EY, 2022). Como se indica por KPMG (2022), “la diversa gama de estándares de informes que se utilizan actualmente en todo el mundo dificulta la comparación entre empresas y mercados. A medida que el mundo intenta abordar

colectivamente problemas como el cambio climático y la desigualdad, es cada vez más importante que todos hablemos sobre sostenibilidad de la misma manera”. (p. 23). Además, la ley permite a las organizaciones seguir cualquiera de los estándares o pautas internacionales de informes disponibles, como el GRI, los informes integrados, el Pacto Mundial de las Naciones Unidas, o los estándares del SASB. Como se señala, “uno de los principales problemas es la ausencia de un marco estándar común obligatorio” (Turzo et al., 2022, p.9). Esta falta de un estándar obligatorio y la existencia de múltiples opciones a seguir por parte de las empresas han sido un gran desafío para la comparabilidad de la información. Conseguir que la INF sea consistente y comparable será beneficioso no solo para los grupos de interés externos, sino también para las propias empresas, ya que les permitirá establecer objetivos, medir el progreso, comparar y competir mejor (KPMG, 2022).

Para superar estos desafíos se requieren esfuerzos en todos los frentes: por parte de las empresas, comprometiéndose a divulgar la INF; de los legisladores, estableciendo marcos regulatorios más claros; y también por parte de la comunidad científica, enfocando los esfuerzos de investigación en profundizar el conocimiento sobre los determinantes en la mejora de la divulgación de INF. Con los datos presentados anteriormente hemos visto que las empresas están comprometidas, ya están divulgando INF, y gracias a cambios recientes en la legislación serán incluso más las organizaciones que comiencen a divulgar pronto. La cuestión hoy en día no es solo si las empresas están divulgando INF o por qué; sino que también debemos preguntarnos cómo pueden las empresas mejorar la calidad y la cantidad de la INF en sus informes. Es necesario que la investigación se centre en identificar qué factores mejoran la calidad y la cantidad de la INF (Ali et al., 2017), ya que todavía queda mucho por hacer en este sentido.

OBJETIVOS DE LA TESIS DOCTORAL

El objetivo principal de nuestra tesis doctoral es profundizar y avanzar en el conocimiento sobre los informes no financieros y los determinantes para su mejora en términos de cantidad y calidad. Para lograrlo, dividimos este objetivo general en preguntas de investigación más específicas.

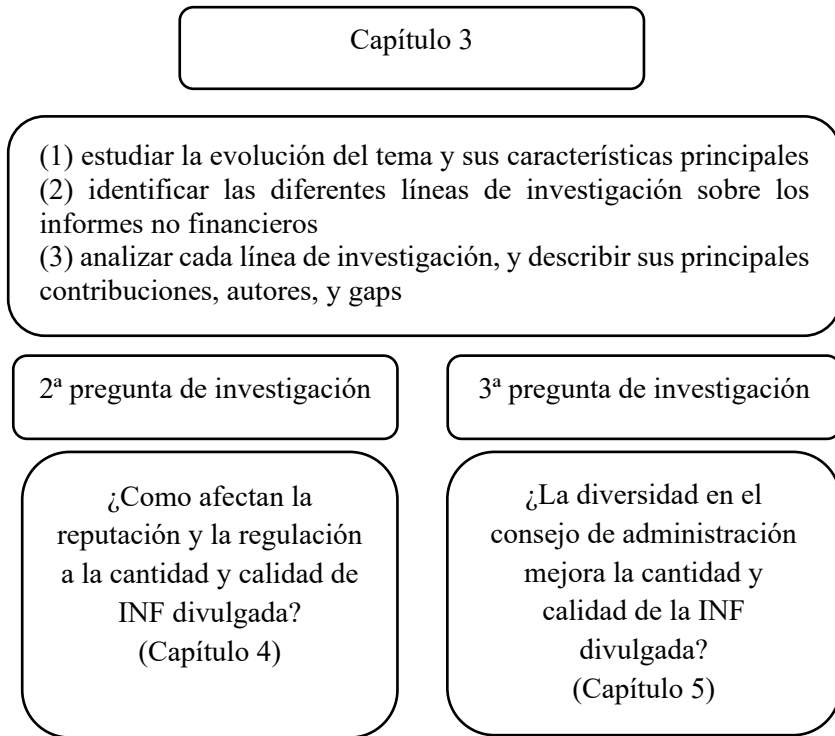
Nuestro tema de estudio puede considerarse relativamente reciente, sumado además a un crecimiento exponencial en la última década (Grueso-Gala & Camisón, 2022). La gran cantidad de estudios novedosos y el amplio enfoque de la RSC provoca que se generen múltiples términos para referirse a los documentos donde las empresas emiten información sobre sus acciones de RSC, objetivos, resultados, etc. Algunos ejemplos de los términos son: informe social, informe medioambiental, memoria de RSC, memoria de sostenibilidad, informe integrado, divulgación de responsabilidad corporativa, o informe de gobierno corporativo, entre otros. Este número de términos diferentes y el crecimiento exponencial de los estudios dificultan la evaluación del estado actual del tema. Además, tal y como han mencionado otros autores previamente, es necesario proporcionar una visión completa del objeto de estudio utilizando técnicas cuantitativas (Erkens et al., 2015). Es por ello, que en respuesta a estas necesidades, en el capítulo 3 nos proponemos estudiar mediante un análisis bibliométrico la evolución del tema, y estructurar el conocimiento para poder identificar las diferentes líneas de investigación junto con sus principales aportaciones y gaps en la literatura.

A partir de nuestro análisis bibliométrico identificamos la necesidad de un análisis más profundo sobre ciertas variables. La mayor línea de investigación (en cuanto al número de elementos) es el estudio de los determinantes de la divulgación de la INF. En revisiones de la literatura previas sobre los determinantes de la presentación de informes no financieros, encontramos que los aspectos internos como el tamaño, la rentabilidad o la industria han sido más estudiados que los aspectos externos (Ali et al., 2017; Fifka, 2013). Asimismo, en nuestro estudio encontramos que aspectos como la regulación y la reputación no están

presentes en dicho clúster, por lo que no han sido frecuentemente estudiados. Esto nos lleva a nuestro siguiente estudio, en el cual nuestro objetivo es investigar la influencia de la regulación y la reputación como determinantes de la INF presentada por las empresas de la muestra.

Finalmente, nuestro último objetivo es estudiar cuál es el efecto que tiene la composición del del consejo de administración en los informes no financieros. Siguiendo a autores previos que indican que esta cuestión precisa de más atención (Cucari et al., 2018) pretendemos profundizar en la misma. Concretamente estudiamos tres variables del consejo de administración: directores independientes, dominicales, y mujeres en el consejo. Los directores independientes y las mujeres en el consejo han sido estudiados anteriormente, sin embargo, todavía presentan resultados mixtos (Frias-Aceituno et al., 2013; Giannarakis, 2014). Finalmente, en cuanto a los consejeros dominicales, hemos encontrado muy poca evidencia empírica sobre su impacto en los informes no financieros. Por tanto, una de nuestras contribuciones es estudiarlo y aclarar esta relación.

En la Figura 7.1 podemos ver un resumen de las preguntas de investigación específicas de la tesis, situándolas en cada capítulo.

Figura 7.1. Preguntas de investigación de la tesis doctoral

Fuente: Elaboración propia

METODOLOGÍA

En este apartado vamos a describir la muestra y las técnicas de análisis que hemos seguido en los diferentes capítulos.

Muestra

La muestra de nuestro estudio incluye las empresas que formaron parte del Ibex35 en el periodo 2015-2019. El Ibex35 es un índice que agrupa a las 35 empresas más líquidas que cotizan en la bolsa española. Este índice es la principal referencia de la bolsa española, y es un indicador del desarrollo económico español (Odriozola & Baraibar-Diez, 2017). La lista de las empresas incluidas en el índice se revisa cada 6 meses, por lo que la composición puede cambiar. Si bien algunas empresas

formaron parte del índice durante todo el período de nuestro estudio, otras fueron sacadas del índice y otras nuevas se incorporaron. Para aumentar nuestra muestra, incluimos todas las empresas que formaron parte del índice, incluso durante un solo período. El número total de empresas en nuestro estudio es de 40.

Para la recogida de datos utilizamos diferentes fuentes. Toda la información referente al sector, tamaño y rentabilidad fue extraída de la base de datos ORBIS. Posteriormente descargamos todos los informes (informes anuales, informes/memorias de sostenibilidad o informes integrados) que estaban disponibles en las páginas web de las empresas. Finalmente, los analizamos manualmente uno por uno para obtener los datos que necesitábamos para el estudio de la INF.

En las siguientes tablas podemos ver algunos datos generales de la muestra. Un gran número de las empresas pertenecen a industrias intensivas en mano de obra, como podemos ver en la Tabla 7.1.

Tabla 7.1. Distribución sectorial de la muestra

Sector	Nº de empresas
Materiales básicos, industria y construcción	12
Petróleo y energía	7
Servicios financieros	7
Servicios de consumo	5
Tecnología y telecomunicaciones	4
Bienes de consumo	3
Servicios inmobiliarios	2

Fuente: Elaboración propia

En la Tabla 7.2 podemos ver parte de la información que extrajimos de los informes de cada año. Los estándares GRI son seguidos por casi la totalidad de las firmas en cada uno de los periodos. Hay otros estándares o principios a los que las empresas también se adhieren, aunque no tanto como el GRI. Por ejemplo, podemos ver que alrededor de la mitad de las firmas están adheridas al Pacto Mundial de la ONU, o que también la mitad de ellas divulgan su INF en un informe

integrado. Adicionalmente, se ha incrementado el número de firmas que cuentan con un comité específico de RSC en la organización, llegando a 24 firmas en el último año; y casi la totalidad de las firmas cuentan con la verificación externa de sus informes en 2019.

Tabla 7.2. Evolución de indicadores sobre la INF

	GRI	Pacto Global Naciones Unidas	AA1000	Informe Integrado	Otros estándares	Verificación externa	Comité de RSC
2015	37	19	13	14	3	29	20
2017	39	22	16	19	4	34	20
2019	39	17	10	17	8	38	24

Fuente: Elaboración propia

Técnicas

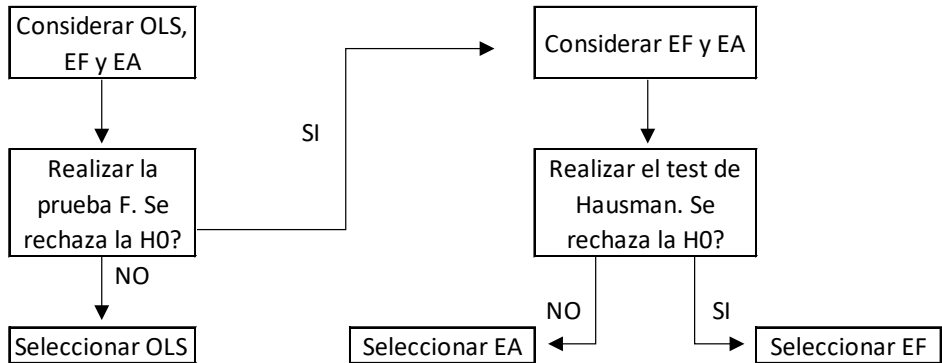
En esta tesis empleamos diferentes metodologías.

El capítulo 3 incluye la revisión de la literatura, la cual se realizó con un análisis bibliométrico. Los análisis bibliométricos se consideran un método cuantitativo (Broadus, 1987), porque utilizan herramientas estadísticas y matemáticas para analizar datos. La razón por la que realizamos un estudio bibliométrico es que las ventajas de esta técnica sirven al propósito de nuestro estudio. Queríamos mapear el tema, pudiendo identificar los estudios y autores más relevantes, entre otras características; y también, establecer cuáles son las líneas de investigación sobre este tema actualmente. Esto implica procesar una gran cantidad de documentos: primero, porque queríamos incluir artículos desde el origen del tema, lo que implica contar con un extenso período de estudio; y segundo, debido al crecimiento exponencial de los estudios sobre informes no financieros en la última década. Esto “supondría un gran reto si se hiciera con métodos cualitativos tradicionales” (Sánchez-Riofrío et al., 2015, p.1922). Uno de los beneficios de este método es que se puede analizar una gran cantidad de datos: en nuestro caso fueron 3113 documentos. Realizamos

diferentes análisis como coautoría, coocurrencia, citación, acoplamiento bibliográfico y co-citación. Estos análisis ayudaron a atajar el camino para una mejor comprensión sobre el tema.

En el capítulo 4 y 5 de la tesis empleamos técnicas de análisis de datos de panel. Los datos de panel consisten en datos que contienen observaciones de series temporales de un número de individuos. Es decir, incluyen dos dimensiones: una dimensión transversal y una dimensión de temporal. Recolectar datos de panel es más costoso que recolectar series temporales o datos transversales, sin embargo, también presenta varias ventajas en comparación a estos (Hsiao, 2007). Los datos de panel tienen mayor capacidad de capturar la complejidad, es decir, permiten probar hipótesis más complicadas. También permiten controlar el impacto de variables omitidas, ya que contienen información sobre cada individuo y las dinámicas inter temporales (Hsiao, 2007). Finalmente, entre muchas otras ventajas, proporcionan una inferencia más precisa de los parámetros del modelo. En ambos capítulos primero reportamos los análisis descriptivos y las correlaciones. Posteriormente estimamos las regresiones utilizando tres métodos diferentes de análisis de datos de panel estático: pooled OLS, efectos fijos (EF) y efectos aleatorios (EA). Para seleccionar un método de entre los tres, realizamos el test de Hausman y la prueba. El procedimiento de selección se muestra en la siguiente figura.

Figura 7.2. Procedimiento de selección entre modelos OLS, EF y EA



Fuente: Elaboración propia

Finalmente, también comprobamos diferentes problemas en los modelos. Comprobamos los problemas de autocorrelación con dos pruebas: la prueba de Durbin-Watson y la de Wooldridge; adicionalmente la heteroscedasticidad se comprueba con la prueba de Breusch-Pagan; y la multicolinealidad se prueba utilizando el factor de inflación de la varianza, y la tolerancia.

ESTRUCTURA DE LA TESIS DOCTORAL

Esta tesis está compuesta por 6 capítulos. El primero representa la introducción general. Presentamos el tema, las motivaciones, los principales objetivos, la estructura y la metodología seguida en nuestros estudios.

Posteriormente podemos diferenciar dos bloques principales. El bloque teórico, que está compuesto por el capítulo 2 y el capítulo 3; y la parte empírica que son los capítulos 4 y 5.

En el capítulo 2 hacemos una introducción general de las principales teorías encontradas al estudiar los informes de INF. Hacemos una breve explicación de los principales conceptos y perspectivas de cada uno. En este capítulo no conectamos las teorías con nuestro tema

(informes no financieros), ya que esto es algo que haremos a medida que sea necesario en cada uno de los siguientes capítulos. Los capítulos 4 y 5 tienen cada uno una sección teórica en la que relacionamos los conceptos teóricos con el tema que estamos estudiando.

El capítulo 3 comprende un análisis bibliométrico de la literatura sobre informes no financieros. Estructuramos toda la investigación previa sobre el tema y proporcionamos un mapa de su estado actual. Se identifican las diferentes corrientes de investigación y sus principales contribuciones. Obtenemos información sobre los autores, artículos o instituciones más relevantes, entre otros. Este capítulo ya ha sido publicado como artículo en una revista indexada con revisión por pares. Sin embargo, por razones de espacio limitado, la versión de la revista ha sido adaptada y reducida. La referencia a la publicación es la siguiente: Grueso-Gala, M., & Camisón Zornoza, C. (2022). A bibliometric analysis of the literature on non-financial information reporting: Review of the research and network visualization. *Cuadernos de Gestión*, 22(1), 175-192. <https://doi.org/10.5295/cdg.211545mg>

En el capítulo 4 estudiamos cuál es la influencia de la regulación y la reputación en la calidad y cantidad de la INF presentada en los informes. Presentamos los cambios regulatorios recientes y verificamos cómo afectaron a los informes no financieros; y también aclaramos si existe algún efecto de la reputación de la firma con la cantidad y calidad de la información divulgada.

En el capítulo 5 comprobamos cuál es la relación entre la composición del consejo de administración y la cantidad y calidad de la INF. En concreto, estudiamos tres aspectos para ver cómo afecta a las dos variables dependientes: la presencia de consejeros independientes, consejeros dominicales y mujeres en el consejo.

Finalmente, en el capítulo 6 presentamos las conclusiones generales de la tesis. Este capítulo resume los resultados, contribuciones e implicaciones de los estudios previos. Finalmente, también señalamos

vías para futuras investigaciones y las limitaciones de nuestros estudios.

CONCLUSIONES GENERALES

Esta tesis tiene como objetivo ampliar el conocimiento sobre los informes no financieros. Aunque en la última década ha habido un alto nivel de publicaciones sobre ellos, y ha habido cambios regulatorios importantes, este tipo de informes todavía presentan algunos problemas. El número de empresas que reportan INF ha aumentado, sin embargo, los informes no financieros aún tienen un bajo desarrollo en comparación con los informes financieros (EY, 2022). Es necesaria más investigación que se centre en cómo mejorar la cantidad y la calidad de los informes (Ali et al., 2017). Por ello, en esta tesis nos esforzamos en determinar algunos de los factores para la mejora de los informes en términos de cantidad y calidad.

Para cumplir con los objetivos desarrollamos tres estudios. En el primero, que se encuentra en el capítulo 3, realizamos una revisión de la literatura siguiendo un método cuantitativo: el análisis bibliométrico. Los resultados de este análisis nos ayudan a estructurar el conocimiento previo y marcar un camino para nuestros próximos estudios. Los dos capítulos siguientes son estudios empíricos que se enfocan en identificar algunos determinantes de la cantidad y calidad de los informes no financieros. En el capítulo 4 nos centramos en dos variables externas a la empresa: la regulación y la reputación; y en el capítulo 5 nos centramos en tres variables internas: consejeros independientes, consejeros dominicales y mujeres en el consejo.

A continuación, resumimos las principales conclusiones derivadas de cada capítulo. Posteriormente indicamos las implicaciones que los resultados tienen para académicos, directivos y legisladores; y finalmente, exponemos las limitaciones de nuestros estudios y algunas vías para futuras investigaciones.

Conclusiones capítulo 3: análisis bibliométrico de la literatura sobre informes no financieros: revisión y visualización de redes

El capítulo 3 es un estudio realizado para organizar la literatura teórica y empírica previa sobre la presentación de informes no financieros. Para ello, realizamos un análisis bibliométrico y una revisión bibliográfica. A continuación, presentamos los resultados obtenidos.

Gracias al análisis bibliométrico podemos ver la evolución del número de documentos publicados desde las primeras publicaciones sobre el tema. Cerca del 90% de los documentos fueron publicados en la última década, lo que indica la relevancia actual del tema. Además, también mostramos los principales artículos, autores, revistas, países, universidades, y la relación entre ellos. Encontramos que la investigación está dominada principalmente por estudios de un solo país, por lo que todavía se necesitan más estudios comparativos entre países, especialmente entre países desarrollados y en vías de desarrollo.

Nuestro estudio también identifica las principales líneas de investigación, que son un total de seis. Las nombramos de la siguiente forma: la esencia, los determinantes, los informes, el IR, las consecuencias y el medio ambiente. Tras la revisión bibliográfica de las líneas de investigación, ofrecemos algunas aclaraciones sobre cada una de ellas. Aunque hay muchos estudios en cada una de las líneas de investigación, todavía hay algunos gaps que deben abordarse. Por ejemplo, los determinantes externos de la presentación de informes necesitan más atención por parte de los investigadores, ya que el foco se ha puesto sobre los factores internos (Ali et al., 2017). En cuanto a las consecuencias de la presentación de informes, la mayor parte de la literatura se concentra en variables financieras, por lo que se requieren estudios que involucren otro tipo de variables, como la reputación. Finalmente, el estándar de IR para la presentación de informes aún se encuentra en una etapa muy temprana (Dumay et al., 2016) y necesita mucho más desarrollo por parte de los investigadores, pero también de los profesionales (Dumay et al., 2017).

Conclusiones capítulo 4: la influencia de la reputación y la regulación en la cantidad y calidad de los informes no financieros.

El propósito de este capítulo es determinar si existe alguna influencia de la reputación de la empresa y la regulación sobre la cantidad y calidad de los informes no financieros. Con este estudio intentamos contribuir a la literatura sobre los determinantes de la presentación de informes no financieros, especialmente respondiendo a la necesidad de más estudios que involucren factores externos (Ali et al., 2017). Utilizamos técnicas de datos de panel, ya que presentan diferentes ventajas frente a los métodos de corte transversal o de series temporales (Martínez-Ferrero & García-Sánchez, 2017).

Nuestros resultados indican que existe una relación positiva entre la reputación y la cantidad y calidad de la INF presentada por las empresas. Esto significa que las empresas de mayor reputación divulgan más ampliamente y con niveles de calidad más altos que las empresas con menor reputación. Esto está en línea con estudios previos como Kansal et al. (2014), Michelin (2011) o Mishina et al. (2010).

Además, también confirmamos que la regulación tiene una influencia positiva en ambas variables dependientes. El aumento de la regulación y el cambio de voluntario a obligatorio ha tenido un efecto positivo ampliando la cantidad de INF divulgada y mejorando la calidad de los informes (Agostini & Costa, 2018; Arif et al., 2022; Caputo et al., 2020; Ottenstein et al., 2022).

A partir de estos resultados, extraemos las siguientes implicaciones. Primero, nuestros resultados pueden ayudar a mejorar la credibilidad de los informes. Como hemos argumentado anteriormente en el capítulo correspondiente, la literatura previa (Schreck & Raithel, 2018) muestra que las empresas con un mal desempeño en RSC intentan imitar las prácticas de las mejores empresas y se dedican prácticas conocidas como ‘window dressing’. Sin embargo, con estos resultados mostramos el predominio de empresas altamente reputadas divulgando con una mayor extensión y calidad la INF. Teniendo en cuenta estos resultados, los grupos de interés pueden tomar los informes no

financieros como señales genuinas de las empresas. En segundo lugar, podemos ver que los esfuerzos realizados por los legisladores con el objetivo de mejorar la difusión de INF por parte de las empresas han logrado su propósito. Creemos que estos resultados brindan contribuciones relevantes y útiles, y suponen un impulso para que las empresas y los legisladores continúen mejorando esta herramienta.

Conclusiones capítulo 5: composición del consejo de administración y su efecto en la cantidad y calidad de los informes no financieros.

El capítulo 5 analiza la composición del consejo de administración con el fin de determinar cuál es su influencia en los informes no financieros. De nuevo, analizamos dos variables de los informes: cantidad y calidad; y seguimos técnicas de datos de panel.

Proponemos que una mayor diversidad en el consejo afectará positivamente a nuestras variables dependientes. En concreto, estudiamos tres tipos de consejeros: consejeros independientes, consejeros dominicales y mujeres en el consejo. Nuestros argumentos se basan en la teoría de la agencia (Fama & Jensen, 1983; A. Khan et al., 2013) y la teoría de recursos y capacidades (Barney, 1981; Galbreath, 2005, 2016), aunque también incluimos perspectivas de estilos de liderazgo (Eagly & Carli, 2003; Eagly & Johannesen-Schmidt, 2001).

Del estudio se obtienen los siguientes resultados. Los consejeros independientes y dominicales tienen un efecto positivo sobre la cantidad, sin embargo, no encontramos una relación significativa con la calidad de los informes. En el capítulo argumentamos estos resultados, así como también indicamos literatura previa que coincide con los efectos encontrados, como Cabeza-García et al. (2018), Cucari et al. (2018), Prado Lorenzo et al. (2009) o Rao et al. (2012). Finalmente, en cuanto a las mujeres en el consejo, encontramos que tienen una relación positiva con la calidad de la información, pero no hay un efecto significativo con la cantidad. Estos resultados podrían deberse al estilo de liderazgo de las mujeres, y también se relacionan con resultados previos de la literatura (Al-Shaer & Zaman, 2016;

Giannarakis, 2014; Katmon et al., 2019; H. U. Z. Khan, 2010). Desde nuestro punto de vista, este estudio proporciona hallazgos muy interesantes sobre cómo la composición del consejo puede afectar por separado la cantidad o la calidad de los informes no financieros.

CONTRIBUCIONES E IMPLICACIONES

En esta sección describimos las implicaciones de los estudios que hemos realizado para investigadores, gerentes y responsables políticos. Finalmente, exponemos las limitaciones de la tesis e indicamos algunas direcciones futuras de investigación.

Contribuciones a la literatura e implicaciones para los investigadores

Nuestra revisión de la literatura contribuye de varias maneras. En la última década se han publicado una gran cantidad de documentos sobre el tema que estudiamos. En primer lugar, contribuimos organizando este crecimiento exponencial de la literatura gracias al uso de técnicas cuantitativas. Estructuramos el tema y presentamos seis líneas de investigación diferentes. También se proporciona otra información relevante, como los autores principales, las variables más estudiadas, algunos gaps o vías para futuras investigaciones. Todo esto es útil tanto para los investigadores seniors como para los que se inician en este tema y precisan de un mapa o una estructura general para comenzar, necesitan identificar los autores más relevantes de una línea de investigación en concreto, los artículos más importantes, o quieren realizar alguna colaboración con una institución o centro de investigación en específico.

Además, contribuimos empíricamente a la literatura sobre los determinantes de la cantidad y calidad de la INF. Encontramos diversos gaps y resultados mixtos en esta corriente de investigación, por lo que abordamos estos problemas. Ayudamos a clarificar la relación entre la reputación y los informes no financieros, y también estudiamos cómo los cambios regulatorios han influido en la cantidad y calidad de estos. También aclaramos el papel de los consejeros independientes y de las mujeres en el consejo, y añadimos evidencia empírica sobre una variable poco estudiada que es la de los consejeros dominicales.

Adicionalmente hacemos algunas contribuciones metodológicas. Los estudios que utilizan técnicas de datos de panel sobre el tema son escasos, ya que la gran mayoría utiliza análisis de datos de corte transversal. Por lo tanto, agregamos evidencia a la literatura utilizando datos de panel, los cuales han demostrado muchos beneficios en comparación con las series temporales o los datos transversales. Además, es difícil encontrar en la literatura estudios que diferencien los conceptos de “cantidad” y “calidad” de los informes no financieros, así como estudios que incluyan ambas variables a la vez. Como hemos visto con nuestros resultados, es importante hacer esta diferenciación, ya que se pueden obtener resultados diferentes para cada una de ellas. En este sentido hemos ampliado el conocimiento al respecto, especialmente con la variable “calidad” que está menos estudiada que la “cantidad”. Finalmente, sugerimos y utilizamos una forma mejorada de medir la cantidad de INF. Es común que los autores cuenten el número de páginas, lo que puede dar lugar a contar excesivamente algunas páginas debido a imágenes no informativas, espacios en blanco, etc. Nosotros aplicamos un factor de corrección al conteo para solucionar este problema.

Contribuciones para directivos y políticos

Los resultados de nuestros estudios también tienen implicaciones valiosas para los gerentes y los políticos. En primer lugar, pueden beneficiarse del mapa de la literatura que hemos elaborado. La estructura que presentamos será útil para que los directivos identifiquen fácilmente los problemas relacionados con los informes no financieros que podrían ser relevantes para su organización. Por ejemplo, para mejorarlos, podrían acceder al conocimiento sobre los diferentes tipos de estándares, el impacto de la verificación externa, etc. Además, por otra parte, nuestros resultados muestran que las empresas que están emitiendo los mejores informes son las que tienen mejor reputación. Este es un resultado muy relevante en un contexto en el que los grupos de interés desconfían y piensan que la presentación de informes no financieros es una estrategia simbólica, y que las empresas con un mal desempeño ambiental o social intentan imitar a

las buenas empresas aumentando la extensión de los informes (Miras-Rodríguez et al., 2020). Nuestros resultados indican que la extensión y la calidad de los informes no financieros responden genuinamente a las prácticas de las mejores firmas, y que no es el resultado de la imitación de buenas prácticas. En otras palabras, podemos ayudar a aumentar la confianza de los grupos de interés. Los directivos pueden aprovechar nuestros resultados para respaldar sus políticas de transparencia y sus informes no financieros. Finalmente, nuestros resultados indican a los gerentes cómo organizar estratégicamente la composición del consejo de administración para lograr una mejor calidad o más extensión de los informes. Con nuestros resultados pueden ser conscientes del papel que juega cada consejero en el consejo para la mejora de una u otra dimensión (cantidad o calidad). Una vez que saben esto, pueden modificar la composición de la manera que mejor se adapte a los objetivos o necesidades estratégicas de la empresa.

En cuanto a los políticos, la estructura de la literatura que proporcionamos también puede ser útil para ellos. Puede ayudarles a detectar las sugerencias de los investigadores sobre asuntos relacionados con los informes no financieros que deben desarrollarse más en cuanto a legislación. De esta forma pueden hacer cambios en esos aspectos a través de nuevas regulaciones. Por ejemplo, en la reciente Directiva de la UE 2022/2464 (European Parliament, 2022) se menciona la necesidad de un estándar común y obligatorio para los informes de sostenibilidad y, como resultado, el Parlamento Europeo está trabajando para lograrlo. Otra implicación con respecto a los políticos es que los resultados de nuestra tesis podrían ayudar a estimular cambios regulatorios por su parte. Hemos demostrado el impacto positivo y significativo que tienen las políticas en la cantidad y calidad de los informes. Las empresas no sólo han cumplido con la ley, sino que también han informado más y mejor. Tener evidencia de estas mejoras impulsadas por la legislación podría motivar a los legisladores a seguir construyendo o mejorando los marcos legales sobre este tema. Finalmente, el último de nuestros estudios empíricos indica cómo la composición del consejo de administración afecta a la cantidad y calidad de la INF. Asumimos que los legisladores quieren

mejorar los informes, y es por ello que podrían hacer uso de nuestros resultados e implementar cuotas obligatorias de representación que modifiquen la composición del consejo. En resumen, los resultados de nuestros tres capítulos principales ayudan a los políticos de las siguientes formas: primero, a detectar nuevos aspectos que podrían necesitar legislación; en segundo lugar, estimular los cambios regulatorios demostrando el cumplimiento de los objetivos y su efecto positivo en los informes; y por último, les proporcionamos información de cómo afecta la composición del consejo de administración a la INF, que es un aspecto que pueden modificar mediante legislación para mejorar los informes.

Limitaciones de la tesis doctoral

Esta tesis doctoral, como cualquier otro estudio, presenta algunas limitaciones.

En primer lugar, reconocemos las limitaciones en cuanto a la muestra. En nuestro estudio no nos hemos limitado a un sector en concreto. No obstante, sí que tenemos ciertas limitaciones en cuanto a otras características. En la muestra solo hemos incluido empresas cotizadas de un solo país. Además, aunque no hemos limitado por tamaño, en esta solo se encuentran grandes empresas, por tanto, no tenemos datos recogidos de pymes. Por todo ello, reconocemos las limitaciones en su heterogeneidad y la influencia del contexto específico al cual pertenecen estas empresas. Debemos tenerlas en cuenta a la hora de extrapolar o generalizar los resultados a empresas con otras características diferentes a las que hemos estudiado.

También encontramos algunas limitaciones en cuanto a las medidas que utilizamos para las variables de cantidad y calidad. Decidir cómo medirlas fue un paso crítico, ya que éramos conscientes de que esto afectaría a los resultados de los estudios. Encontramos muchas medidas diferentes en la literatura, desde muy simples hasta altamente elaboradas. No nos inclinamos por las medidas más simples y tratamos de mejorar las que usábamos, por ejemplo, incluimos un factor de corrección al contar el número de páginas. Sin embargo, debido a

nuestros recursos limitados, no incluimos en las mediciones cierta información de los informes que también pudiera ser relevante para la investigación, por ejemplo, la existencia de diferentes indicadores ambientales o sociales, etc. No obstante, considerando la disponibilidad de recursos, comparamos diferentes opciones y tratamos de ser muy cautelosos en la selección de la medida de las variables dependientes.

Además, el análisis de los informes no financieros ha sido realizado solo por una persona. Aunque hemos tratado de seguir un protocolo para garantizar la rigurosidad del análisis, puede haber cierto sesgo o grado de subjetividad en los datos obtenidos, sobre todo a la hora de contabilizar número de páginas, o aplicar el factor correctivo de imágenes no informativas.

Los modelos teóricos que hemos diseñado para explicar los determinantes de la cantidad y calidad de INF alcanzan niveles de capacidad explicativa que no resultan muy elevados. Los niveles más altos de capacidad explicativa se obtienen cuando tenemos la variable cantidad como variable dependiente. Por ejemplo, en el primer estudio en el que incluimos regulación y reputación, la capacidad explicativa del modelo es del 19,45% para la cantidad de INF, y un 15,88% para la calidad. En el segundo estudio, en el cual incluimos las distintas variables relacionadas con el consejo de administración, la capacidad explicativa alcanzada para la cantidad y la calidad es de un 17,28% y un 8,83% respectivamente. Ponemos estos datos como limitación, puesto que no suponen un porcentaje muy elevado. No obstante, consideramos que los resultados siguen aportando valor, puesto que sí que revelan factores importantes para la mejora de la calidad y cantidad de INF. Además, los resultados evidencian que las variables cantidad y calidad no responden igual ante los mismos determinantes, puesto que son conceptos diferentes. Esta limitación impulsa a seguir ahondando en ambas variables, especialmente en la calidad, que es la menos estudiada en la literatura, y la que menos hemos podido explicar con nuestros modelos.

Otra limitación es que nuestros modelos no incluyen interacciones entre variables. No hemos considerado variables mediadoras ni moderadoras, lo cual quizá habría ayudado a mejorar la capacidad explicativa de los modelos. Como ya comentamos en el capítulo 5, y sugerimos como dirección futura de investigación, sería interesante añadir este tipo de interacciones por ejemplo en el caso de la composición del consejo de administración, puesto que hay muchas características que se pueden tener en cuenta de forma combinada (p.ej. consejeras mujeres independientes)

Creemos que algunas de las limitaciones que hemos expuesto representan oportunidades para futuras investigaciones.

Direcciones para futuras investigaciones

Para concluir la tesis doctoral, realizamos algunas sugerencias interesantes a tener en cuenta para futuras investigaciones. En cada uno de los tres estudios de la disertación ya hemos mencionado algunas indicaciones específicas sobre estudios que resultan interesantes de cara a futuro. Es por ello que en este apartado únicamente vamos a realizar indicaciones más generales respecto a la muestra, la metodología, y nuevos temas a abordar.

Las primeras sugerencias son respecto a la muestra y los datos. Como ya hemos comentado que la muestra de nuestros estudios tenía algunas limitaciones, lo primero sería solventar esto. Sería recomendable trabajar con una muestra mayor, aumentando la heterogeneidad. Por ejemplo, sería interesante incluir a las pymes en el estudio. La reciente Directiva de la UE 2022/2464 (European Parliament, 2022) hace obligatorio el informe no financiero para las pymes que cotizan en bolsa. Esto abre la posibilidad de estudiar qué factores impulsan a las pymes a mejorar la cantidad y la calidad; ver cuáles son los retos específicos que enfrentan este tipo de empresas; y ver si la legislación y la evolución de los informes de voluntarios a obligatorios tiene el mismo efecto sobre ellas que sobre las empresas más grandes.

Otra sugerencia es incluir más países en la muestra, especialmente comparando países desarrollados y en vías de desarrollo. Esto puede

llevar a resultados diferentes si los países tienen muchas diferencias culturales entre sí. Por ejemplo, el papel que desempeñan las mujeres en el consejo de administración puede no ser el mismo en un país en vías desarrollo y, por lo tanto, no tener el mismo efecto en la cantidad o calidad de los informes no financieros.

Indicamos también sugerencias respecto a la metodología. Somos conscientes del valor que aportan y los beneficios que tienen los estudios con datos de panel como los que hemos realizado. No obstante, hay otras metodologías que también tienen otras ventajas, y pensamos que se pueden llegar a complementar entre sí. Al estudiar los informes de una gran cantidad de empresas durante varios años, como hemos hecho en esta tesis, existen algunas limitaciones en la profundidad del análisis del contenido de estos. Es decir, se ha intentado estandarizar el procedimiento de extracción de datos, y los datos e indicadores que se extraen pueden en ocasiones no llegar a recoger toda la información en el máximo nivel de detalle, etc. Por esta razón, sugerimos realizar un estudio de casos con un número reducido de empresas, para estudiar en detalle las sutilezas de los cambios en el contenido y la calidad de la información proporcionada en los informes. Por ejemplo, estudiar el tipo de lenguaje utilizado en los informes (subjetivo u objetivo...), si se comunican o no hechos negativos, y ver cual es la estrategia seguida por parte de la empresa a la hora de comunicarlos (p.ej. si la empresa intenta evitar dar información negativa, o si por el contrario la comunica proactivamente y se responsabiliza de ello), etc.

Por último, realizamos un par de sugerencias respecto a temas para futuras líneas de investigación. La primera tiene que ver con los ESRS. Este es el nombre de los nuevos estándares para informes no financieros que se están elaborando por el EFRAG a petición de la Comisión Europea. La nueva Directiva (UE) 2022/2464 entró en vigor en enero de 2023, y establece que las empresas sujetas a esta directiva, tendrán que divulgar acorde a los ESRS. Este nuevo estándar es el inicio de una línea de investigación futura, ya que abre la puerta al análisis de algunas cuestiones relacionadas. Por ejemplo, ¿cuáles son

las dificultades o los retos a los que tendrán que hacer frente las empresas para adaptarse a este nuevo estándar? Hay empresas que ya venían usando otros estándares como el GRI, o los IR, y ahora deben cambiar y adaptar sus informes a los nuevos estándares. ¿Que costes asociados conlleva este proceso de adaptación? Por otra parte, ¿estos nuevos estándares, mejoran o empeoran la cantidad y calidad de la INF divulgada por las empresas, en comparación con los estándares que ya estaban utilizando? Quizá al tener que hacer un cambio, hasta que las empresas se adapten, es posible que haya una merma en estas variables. También podría suceder que las empresas se adapten rápidamente y que no hubiera ningún empeoramiento. Otra cuestión por analizar es si se logra el objetivo que tienen estos nuevos estándares europeos: ¿se ha conseguido alcanzar una mejor comparabilidad entre informes de empresas diferentes, e incluso pertenecientes a países distintos? Estas cuestiones, entre otras, surgen debido a esta nueva regulación europea.

La segunda y última sugerencia respecto a tema que investigar está relacionada a una crítica que se realiza sobre los informes no financieros. Según la legislación europea, los informes no financieros deben reportar información sobre seis temas: ambiental, social, empleados, derechos humanos, anticorrupción, y soborno. Este listado de temas pone el foco de los informes no financieros en lo que se entiende por sostenibilidad, o RSC. No obstante, la INF, por definición, es un término amplio y recoge todo lo que no quede dentro de los “informes financieros”, es decir, los estados contables que presentan las empresas anualmente. Hay algunos aspectos que quedan fuera de los informes financieros y que tampoco se corresponden estrictamente con la RSC, y por tanto, están quedando olvidados. Estamos hablando de los activos intangibles. Los activos intangibles no se reflejan en los estados financieros actuales, y como hemos visto, tampoco se están incluyendo en los informes no financieros. Son muchas las empresas que basan sus ventajas competitivas en estos activos estratégicos, los cuales los son altamente importantes, y no quedan capturados en los informes. Tal y como indica Ciprian et al. (2012) las compañías deberían ampliar la divulgación sobre activos intangibles, especialmente en los informes no financieros. Una mayor divulgación

sobre los activos intangibles hará que se comunique mejor la situación de la empresa, reflejando su valor real, con activos como por ejemplo la reputación de la compañía. Debido a la gran importancia que tienen los activos intangibles, y la problemática que hay para medir y contabilizarlos (Kristensen & Westlund, 2003) hace que sea necesario prestarles más atención, y contribuir en este sentido.

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