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Emerging Perspectives

On the Assurance of Non-Financial Disclosures

Three studies on the rise of a worldwide majority practice

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Introduction

The impact of companies on the surrounding environment is becoming a growing concern all over the world. This has resulted in the need for metrics and standards to “measure” sustainability regarding environmental, social, and governance (ESG) performance.

While competence in financial reporting remains essential, an increasingly knowledge-driven economy requires that companies and stakeholders understand non-financial information connected to social and environmental dimensions. Once considered exclusively a voluntary reporting practice to display commitment to ESG matters, non-financial disclosures (NFD) concerning sustainability information are now becoming mandatory in many countries.

Environmental and social issues, such as climate change, child labour, forced labour, working conditions, equality and diversity, will probably take up the same relevance of financial matters. Customers, employees, and other stakeholders increasingly choose whether to do business with an organization based on its non-financial policies and performance. Because of that, over the last few decades, the use of NFDs witnessed an exponential growth that led to an expansion of the audience of preparers and users, to the creation of dedicated regulations, and to an increasing attention by stakeholders.

Nowadays, several reporting frameworks for NFD coexist, but it is not possible to identify universally accepted standards. Additionally, theory and

practice highlighted the risk of greenwashing and window dressing connected to these disclosures. The mentioned issues, combined with the growing importance of the matter, stated the need of external assurance to provide credibility and legitimacy to NFDs.

The audit profession quickly developed services to meet this demand. However, NFD assurance is still in a development stage because of the heterogeneity that characterizes it. The lack of legal obligation in many countries, the plethora of reporting and assurance standards, the variety of engagements, scopes, and formats make it difficult to compare and assess the quality of this practice.

Despite so, the once considered niche profession, after almost two decades of development, is now becoming a worldwide majority practice that will seemingly continue to grow in importance in the near future. The evolution of NFD assurance, investigated through the assessment of its quality, is the topic of the present work.

Chapter 1

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Background and Aim of the Research

1.1. The rise of non-financial disclosures

Accounting and studies of the company have constantly evolved and expanded their scope over the course of time. Already in the previous century, companies have been studied regarding their impact and relations with surrounding environment. The interpretation of business studies by Zappa (1927) merges the areas of management, accounting, and organization. According to this view, accounting should investigate the interdependences and examine the various links and relationship inside and outside the company. There cannot be investigation in this sense without examining the market and the environment which give effect and meaning to the economic choices of each individual firm about their management and organisation (Onida, 1965). Companies receive inputs from the surrounding environment in the form of production factors, cultural values, legislative

constraints, ethical information and carry out activities of economic transformation as output; the latter include both the goods and services produced and the positive and/or negative influences deriving from company "behaviour" (Ferrero, 1980). In doing so it operates under specific conditions of order and balance, durable across the course of time (Giannessi, 1960), traditionally intended in the economic and financial dimensions (Amaduzzi, 1969). Between the company and its own environment there is a continuous exchange without being therefore possible to distinguish the typical changes of the original processes from those induced (Bertini, 1990). The company can be considered as a system of forces that develop, in the environment it belongs, a complex series of processes (Amaduzzi, 1969). Considering the company as a system means having in mind that there is a variety of elements or components interacting with each other based on internal and external relationships (Marchi, 1997).

Corporate disclosures traditionally answered the need for translating all of the above into data, and the typical instrument for tracing company performances across the years became financial reporting (Giannessi, 1979). That said, even if financial disclosures remain an essential element of corporate reporting, they demonstrated significant limits in representing the non-financial aspects of the company, such as knowledge, relationships, and externalities (Roslender and Stevenson, 2009). Focusing mostly on transactions values, either realised or close to realisation, it leaves out almost all intangible and non-financial factors

(Gowthorpe, 2009), placing the emphasis, above all, on realized value rather than on value creation (Marasca, 2010).

To overcome these limits new forms of disclosure emerged, with the purpose of investigating company's interactions and impact on the surrounding environment adopting non-financial measures. Early examples of NFDs are represented by sustainability reports including social and employment information issued by companies in the American steel industry during the early 1900s (Lewis et al., 1984). Moreover, widespread publication of social and environmental information appears to have emerged during the 1970s. According to Bebbington et al. (2000), Europe was at the forefront of these developments, as the result of "institutional encouragement", given the growing recognition of the importance of supplementing financial information with social and environmental disclosures. This was especially the case as the power of large multinational corporations to control and move resources internationally became a subject of worldwide concern (Gray et al. 1990).

There was considerable variation in the content and structure of early reports dealing with non-financial information. These were referred to by a variety of different names such as corporate citizenship reports, social reports, and environmental reports (Hahn and Kühnen, 2013; Junior et al., 2014). By the end of the 1990s, reporting research and practice increasingly began to consider the social and the environmental dimension simultaneously in a joint report often published

alongside traditional financial reports (Hahn and Kühnen, 2013). This type of reporting gained prominence outside the industrialised nations of North America and Europe, spreading to capital markets in other European countries, Asia, and Africa (KPMG, 2013). This coincided with a number of important regulatory developments in the early 2000s, driven largely by governments, stock exchanges and the responsible investment community (KPMG 2017). Nearly a decade later the disclosure of such information started to become mandatory in many countries.

Given the multitude of definitions for non-financial information, such as CSR reporting, sustainability reporting, environmental reporting, ESG reporting, this phenomenon has progressively enriched the accounting lexicon with a broader range of information, considering corporate governance issues, environmental and social matters, intangible assets, and intellectual properties, among other aspects. This interest has thus far increasingly expanded with several taxonomies of non-financial information types, all of which are grouped under the umbrella term “non-financial information disclosure” or the abbreviated “non-financial disclosure” (Fiandrino, 2019). The diffusion of the term “non-financial” was bolstered, in Europe, by the adoption of the Directive 2014/95/EU, also called the non-financial reporting directive, to regulate the disclosure of information concerning, above others, environmental, social and employee matters, respect for human rights, anti-corruption and bribery matters. This regulatory initiative, and its imminent revision in 2021-2022, represent one of the most innovative and significant development

in modern accounting that is shaping the “playing field” in the future to come (Doni et al., 2019).

1.2. Assurance of non-financial disclosures, from the rise to current issues

Non-financial disclosures’ growing importance has led many stakeholders to call for the assurance of these reports (Junior et al., 2014). To develop more credible NFD and decrease the risks related to information asymmetries and “window dressing”, the need for external verification has emerged (Morimoto et al., 2005). Assurance can be crucial in bridging the credibility gap that characterises NFDs (Manetti and Becatti, 2009) as the high expectations stakeholders place on it demonstrates (Green and Li, 2012). Because of this, auditors and consultants have increased the attention they give to the provision of assurance on NFD (Elliott, 2002) and have developed new professional services to satisfy this growing demand (Junior et al., 2014). The topic of NFD assurance has rapidly increased in importance, and many authors have ventured into this field of study in order to understand assurance practices and the development of the market for this service (e.g., Ballou et al., 2018; Huggins et al., 2011; Michelon et al., 2019; O'Dwyer and Owen, 2005; Perego and Kolk, 2012; Pflugrath et al., 2011; Simnett et al., 2009).

Assurance process seems to have a positive impact on the legitimacy of NFD for several reasons. First, assurance is correlated with the quality of NFD and to the reliability of information disclosed by companies (Kolk and Perego, 2010; Moroney

et al., 2012). Second, assurance also tends to improve the legitimacy of NFD and stakeholders' confidence in the disclosed information (Hodge et al., 2009; Manetti and Toccafondi, 2012; Simnett et al., 2009). This process has also been found to improve corporate image and stakeholder accountability (Dando and Swift, 2003; Manetti and Becatti, 2009; Moroney et al., 2012).

According to O'Dwyer and Owen (2005), the practice of voluntarily engaging independent assurance providers to attest to certain sustainability report disclosures commenced in 1997/1998. Since then, the market for the assurance of non-financial information has grown rapidly (O'Dwyer et al. 2011). For example, in 2005 only 30% of the sustainability reports prepared by the world's largest 250 companies were subject to independent assurance. By 2020 this number increased to 71% and became a majority practice also for large and mid-cap firm around the world (KPMG, 2020) also becoming mandatory in many countries. The already mentioned Directive 2014/95/EU, for instance, has allowed national governments to implement mandatory NFD assurance, and several countries are opting for this path.

In a world that is facing a time of change, a rising number of policy maker considers environmental and social sustainability as one of the priorities for a long-lasting development. Because of that, it can be expected in the near future that the importance of NFD assurance will continue to grow.

As a consequence of the increase in demand for NFD assurance, this practice gained a growing interest by regulators, standard setters, practitioners, and academia. Credibility and informative precision seem to be clearly linked to the practice of assurance, even when it is requested voluntarily, in order to alleviate and resolve the existing lack of confidence in NFD. Assurance mainly verifies the accuracy, confidence and reliability of data reported by companies (Hodge et al., 2009; O'Dwyer and Owen, 2005; Simnett et al., 2009). In doing so it increases the credibility of such information. This process reinforces stakeholders' confidence in NFD (Pflugrath et al., 2011; Simnett et al., 2009).

It is also possible to witness critical positions and perplexities about this emerging practice in the literature. They are connected to the lack of legal obligation in most countries to engage in this process (Waddock, 2008), to the diversity of assurance providers that can perform the service, such as accountants, consultancy companies and engineering firms (Huggins et al., 2011), to the heterogeneous standards (ISAE 3000 and AA1000AS, among others) and methodologies employed (Deegan et al., 2006; Perego and Kolk, 2012). Because of that many practitioners and academic still consider NFD assurance as a nascent, few regulated, practice and question if its provision produce substantive benefit (Boiral et al, 2018; Michelon et al, 2015) and if it should be made mandatory (Rivière-Giordano et al., 2018).

Additionally, as already mentioned, the definition “non-financial disclosure” is quite recent and grew in diffusion in the theory and practice only after the Directive 2014/95/EU. It is possible to witness a multitude of definition for NFD that makes possible to identify sustainability reports, corporate social responsibility (CSR) reports, social and environmental reports (SER), greenhouse gas (GHG) statements and carbon emissions disclosures and in general form of reporting connected with ESG. An advantage of using a non-stringent terminology is to allow for the consideration of new form of disclosures that will inevitably be added over the course of time given the rapid evolution of this form of reporting. An example of this possibility is represented by the introduction in NFD studies of disclosures about sustainable development goals (SDGs) and biodiversity (KPMG, 2020).

At present, the academic contributions present in the literature focus mainly on one of the types of reporting listed above. For this reason, it is difficult to trace a unitary evolutionary path and define a stage of development of NFD assurance (Gillet-Monjarret and Rivière-Giordano, 2017). A growing body of literature has examined NFD assurance from different perspectives. However, as is the nature of empirical research, most of these papers have focused on a particular aspect of the market for this service (Maroun, 2018). There is a need to bring together this scattered research into a single study which provides a comprehensive overview of this new form of assurance (Farooq and De Villiers, 2017).

This need is also reflected in the study of NFD assurance in terms of its quality. Audit quality is a much-debated topic in both academic and professional literature. Over time several concepts, frameworks and models have been proposed mostly distinguishing the different factors that influences audit quality, such as inputs, processes, and outputs (Knechel et al., 2013). So far, the debate around audit quality has mostly focused on financial dimensions, and even after decades of development, little consensus remains on how to define it, let alone measure it (Epps and Messier, 2007). In case of NFD assurance the definition of quality is even more complex due to the wide range of definition, criteria, levels of application, scope, format, etc., result in many different levels of NFD assurance quality (Perego and Kolk, 2012) that limit the utility of NFD assurance for third parties, as well as making difficult any study focusing on single aspects. Although there are a broad range of alternative professions that could provide assurance for NFDs, little is known about the best practices for conducting a high-quality assurance engagement (Cohen and Simnett, 2015). The main objective of NFD assurance is to improve disclosures' credibility (Farooq and di Villiers, 2017). However, unlike a financial statements audit, it is regulated in a heterogeneous manner across different countries. As a result, there is a lack of consensus on how engagements should be undertaken (Manetti and Becatti, 2009; O'Dwyer and Owen, 2005). Instead, the scope and objective of engagements is determined by the market forces of demand and supply (Simnett et al., 2009). This has given rise to a

diverse and dynamic landscape (Manetti and Toccafondi, 2012) that causes problem of comparability and assessment of assurance's quality, and by reflection to the verified disclosures (Venturelli et al., 2020). On the light of the above, many still consider NFD assurance a nascent profession.

This practice was once mostly perceived in a dichotomous manner, considering the differences of its presence/absence on the perception by external stakeholders. The service itself, in terms of process and outcomes, has been studied in a limited manner. NFD assurance seems to be reaching a more "mature" stage of development where its characteristics matter more than its mere presence. The fact that NFD assurance quality is a quite recent topic in the literature and also in the practice permits to witness a wide range of criteria and definitions for it. Because of that, it seems worthy to investigate the matter in detail.

1.3. Aim and research questions

The aim of this research is to study the evolution of NFD assurance in both theory and practice. As a means of comprehending its development, quality of assurance is specifically investigated in its assessment and comprehension of effect on external users. This should allow for the verification of a potential shift in approach, from "if assurance should be provided" to "how assurance should be provided."

Given the lack of comprehensive analyses on the evolution of the research related to this topic, also linked to the multitude of definitions and disclosures that can be considered NFD, the first question that this research tries to answer is the following.

i. What has been the evolutionary path of NFD assurance?

On a second stage, on the light of the heterogeneous “playing field” of NFD assurance, definitions of quality for this practice are investigated in order to assess if and how is possible to assess assurance no longer dichotomously (in regard to its presence/absence) but in regard to different characteristics and outcomes. In a nascent stage of this practice, conducted mostly on a voluntary basis, seemed physiological to consider its quality in a limited manner. Now that this profession is evolving, it has become crucial to reach a definition of assurance quality. The second research question is formulated in this sense.

ii. How could NFD assurance quality be defined and assessed?

Finally, if assurance quality can be defined and assessed, its impact on external users should be quantifiable. This requirement stems from the fact that, given the practical nature of the topic, defining assurance quality at a conceptual level is quite limited. It appears to be reasonable to evaluate it in terms of the impact

it has on its users. This line of thought led to the formulation of the third research question, which is as follows.

iii. How does NFD assurance quality impact external users?

1.4. Research design: three studies on the evolution of NFD assurance

This research combines theoretical and practical perspectives, coherently with the fact that accounting is a practical discipline, and willing to reduce the gap between theory and practice in this field (Zambon and Girella, 2016). To address the research questions three different approaches are adopted in as many studies. The overarching logic adopt a deductive reasoning that moves from the generic to the specific.

First of all, studies of NFD assurance are systematized in order to understand relations, reciprocal influences between academic and professional literature, and trace the evolutionary path of this practice. Doing so, one of the key topics that emerges as worthy to be investigated in detail, is the assessment of the quality of NFD assurance. In a second stage, given the lack of universal accepted definition of assurance quality, this is investigated through a conceptual analysis of regulations and standard, academic contributions, and possible similarities with audit quality. Lastly, after having investigated the nature of NFD assurance quality, its effect on external users, specifically financial markets, is tested in an empirical

study. All of these “steps” aim to understand the evolution of NFD assurance in order to reach a better comprehension of worldwide phenomenon and try to contribute to its further development. The background and methodology of each study are summarized below.

1.4.1. First study: systematic review

Until now, there have been few studies on the evolution of NFD assurance, nor have scholars addressed potential gaps between theory and practice in this field. To address the first research question a systematic review is developed with the following aims: first, to explore the evolution of the NFD assurance literature by systematising academic studies (i.e., papers published in scientific journals) and professional contributions (i.e., papers published in non-scientific sources); second, to understand whether theory and practice have influenced each other in the field of NFD assurance, i.e., whether a bridge between theory and practice can be identified within this discourse.

1.4.2. Second study: conceptual analysis

The disclosure of non-financial information is becoming mandatory in many countries. The provision of assurance on NFDs, however, is still mostly voluntary and conducted with a variety of standards and methodologies. In such a heterogeneous context, the assessment of the quality of this service is complex and widely debated both in theory and in professional practice. To answer the second

research, question the analysis moves from the general topic of NFD assurance to a specific feature of it: assurance quality. As a sign of the evolution of the practice, the debate is becoming more focused on the characteristics and outcomes that define its quality, more than its provision per se.

Analysing the concept of assurance quality in regulations and standards, academic contributions, and possible similarities with audit quality, this study underlines limits and potential paths of development for the current models for reporting and assuring NFDs. In doing so, the study particularly focuses the process and outcome factors that influence the quality of NFD assurance.

1.4.3. Third study: empirical research

The last part of the research delves deeper in the matter of NFD assurance quality no longer on a conceptual but empirical level. A quantitative approach is adopted in order to understand the effect that assurance quality produces on external users, specifically, financial market. The study examines how the credibility and accuracy of NFD work jointly to enhance market confidence. The relationship explored is the one between assurance quality, as a proxy for credibility, and market confidence, with the mediating effect of restatements as indicators of accuracy.

Regression models are developed employing Baron and Kenny's three-stage mediation analysis (1986) with a sample of 1,580 firm-year observations of NFD issued by European companies. This study explores whether NFD assurance quality

enhances capital market confidence in non-financial information by providing greater credibility, and the role that restatements play in this relation.

Chapter 2

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Systematizing the Theory and Practice of Non-Financial Disclosure Assurance

2.1. Background and purpose of the study

In the last few years, scientific and professional interest in the accounting issues related to non-financial disclosure (NFD) has increased. This can be attributed to two main factors. First, there is growing awareness that organisational, non-financial dimensions, such as those related to intangibles, environmental and social impact, respect for human rights, gender diversity policies, etc., are relevant levers to improve organisational financial performance and achieve a long-term sustainable competitive advantage (De Luca et al., 2020; Fornaciari and Pesci, 2018; Zambon et al., 2019). Second, the measurement and understanding of non-financial dimensions go far beyond the accounting department, and they are of interest to a vast audience of internal and external stakeholders (Chiucchi et al. 2018; Giuliani and Chiucchi, 2019). Consequently, non-financial information is no

longer only the subject of internal reporting but has increasingly become an object of disclosure (Athanasakou et al., 2020; Bravo, 2017; Dumay, 2016).

The rising importance of NFD is also witnessed by the plethora of concepts, methods and tools proposed by scholars, practitioners, and institutions to improve business reporting as well as by the growing number of regulatory initiatives (De Villiers and Sharma, 2017; Girella et al., 2018). For example, the European Union has established various initiatives to promote NFD, such as the Directive 2014/95/EU on the “Disclosure of non-financial and diversity information by certain large undertakings and groups”, that have made non-financial reports, also called non-financial statements or non-financial declarations, mandatory for around 6,000 large European public-interest entities.

To reduce the risks related to information asymmetries and “window dressing” practices and to enhance the credibility of NFD, the need for assurance has arisen (Morimoto et al., 2005). The Directive 2014/95/EU has allowed national governments to implement mandatory NFD assurance, and several countries have chosen this option. Consequently, the auditing profession has increased the attention it gives to the provision of assurance on subject matter other than financial information (Elliott, 2002; Elliott and Jacobson, 2002). Thus, specific auditing frameworks, such as the International Standard on Assurance Engagements 3000 (ISAE 3000) released by the IAASB, or the AA1000 Assurance Standard (AA1000AS) issued by a British non-profit organisation, The Institute of Social and

Ethical Accountability (ISEA), have assumed important roles in this arena. The accounting authorities of individual countries have also issued specific standards for the auditing of sustainability reports. This has been carried out, in particular, by Australia (Standards Australia, 2005), Sweden (FAR SRS, 2004), Germany (IDW, 2005), the Netherlands (NIVRA, 2005), France (CNCC, 2004) and Italy (CNDC, 2006). The main reporting initiatives, i.e., the GRI-Global Reporting Initiative and the IIRC - International Integrated Reporting Council, have also issued specific assurance guidelines. These frameworks and guidelines aim to support the development of assurance engagements of non-financial information according to specific high-quality standards. Some would argue that the fanfare about the emergence of this assurance service from a professional perspective is paradoxically matched by the paucity of research related to it (Simnett et al., 2009). Thus, questions related to why, who, what, and how to assure NFD have emerged (Zhou et al., 2016).

The extant literature reviews on the assurance of NFD tend to be focused on specific topics, namely the market for sustainability assurance (Farooq and De Villiers, 2017); the consequences of the assurance, such as stakeholder reactions (Velte and Stawinoga, 2017); or the theoretical frameworks and underlying issues (Gillet-Monjarret and Rivière-Giordano, 2017). Consequently, it seems that there is a lack of comprehensive analyses on the evolution of the research related to this topic.

It is also noteworthy that the above-mentioned literature reviews do not consider the professional literature, even when it plays a relevant role (e.g., in intellectual capital, block chain, etc.), as is highlighted in several accounting publications (Schmitz and Leoni, 2019; MacDonald and Richardson, 2011; Sulaiman et al. 2018). Accounting is a practical discipline, but the relationship between theory and practice still appears to be relatively unexplored (Zambon and Girella, 2016). Some argue that the professional accounting literature acts as a written archive of the knowledge of a practice that encompasses concepts and techniques commonly known by practitioners. This idea stems from the fact that the accounting profession's body of knowledge is institutionalised through professional training (e.g., education, apprenticeship, etc.) and ongoing professional development activities (e.g., publications, courses, etc.) (Richardson, 1997). Thus, it seems interesting to investigate this type of literature as well. Several scholars have also highlighted the existence of a gap between academic literature and practice, despite the advantage that both could gain from mutual interaction (MacDonald and Richardson, 2011; Sulaiman et al., 2018; Kaplan, 2011). In the field of NFD assurance, little is known about whether and how practice has influenced the research on the assurance of NFD, and vice versa.

In light of these considerations and to contribute to the development of a bridge between theory and practice in auditing (Parker et al., 2011; Power and Gendron, 2015), a systematic review is developed with the following dual aim: first,

to explore the evolution of the literature on NFD assurance by systematising academic studies (i.e., papers published in scientific journals) and professional contributions (i.e., papers published in non-scientific sources); second, to understand whether theory and practice have influenced each other in the NFD assurance field or, in other words, whether a bridge between theory and practice can be identified within this discourse. Thus, a longitudinal analysis of the academic and professional literature will be presented.

The study is structured as follows. The method used for the literature review is discussed in the next section. Then, the selected studies are analysed, and the findings interpreted. Finally, some valuable insights are extracted and discussed to draw some conclusions and to outline a future research agenda.

2.2. Methodology

Given the aims of systematising the existing literature on NFD assurance and developing a longitudinal analysis of academic and professional contributions, the systematic review methodology seemed the most appropriate. According to Littell et al. (2008), a systematic review allows scholars “to comprehensively locate and synthesise research that bears on a particular question, using organised, transparent, and replicable procedures at each step in the process”. The present review is based on a research protocol that attempts to identify the most relevant scientific and professional sources pertaining to the objectives of this study. It is based on the

four-step approach proposed by Fink (1998) and enriched by using the structure proposed by Tranfield et al. (2003):

1. selecting key terms, databases, websites;
2. applying practical screening criteria;
3. applying methodological screening criteria;
4. analysing data, synthesising findings, and identifying valuable insights.

Computer-assisted qualitative data analysis was conducted on the selected papers through Bibliometrix, an R-tool for comprehensive science mapping analysis (Aria and Cuccurullo, 2017). The database was compiled from the selected academic and professional papers published up to the end of 2018. The present research and data extraction refer to the period ending in July 2019. More detail will be provided below. In a later stage of the research, this study aimed to identify and analyse the evolutionary path of NFD assurance based on the selected literature.

This review is also enriched by the analysis of the professional literature relating to NFD assurance and the possible intermingling of this body of literature and the academic literature. Thus, for each step and when relevant, it is highlighted how the research protocol has been designed and applied differently to the academic and professional literature.

2.2.1. *Selecting key terms, databases, websites*

Considering the multitude of definitions provided for non-financial information and NFD, at the beginning of the research, the terms “*Assurance + Non-financial information + Disclosure*” and “*Assurance + NFI*” were used for searches. In light of the many inconsistent results and the relatively limited occurrence of the term “non-financial information” due to its recent usage, it was decided that the more generic words “*Sustainability + Assurance*” would also be employed. With this terminology, it was possible to identify studies related to sustainability reports, corporate social responsibility (CSR) reports, social and environmental reports (SER), greenhouse gas (GHG) statements and carbon emissions disclosures. These reports have also been the object of searches. In order to include contributions about specific reporting standards, combinations of the word "assurance" and some of the most frequently utilised ESG standards were also used.

To recap, the search strings employed were: “*Assurance + Non-financial Information + Disclosure*”, “*Assurance + NFI*”, “*Sustainability + Assurance*”, “*Corporate Social Responsibility (or CSR) + Assurance*”, “*Social + Environmental + Assurance*”, “*Greenhouse gas (GHG) + Assurance*”, “*Carbon emissions + Assurance*”, “*Triple Bottom Line (or TBL) + Assurance*”, “*Global reporting (or GRI) + Assurance*” and “*Integrated reporting + Assurance*”. As the issue of NFD

assurance involves both academics and practitioners, both scientific and professional sources have been considered in this review.

Concerning the scientific sources, the choice was made to use the Scopus database provided by Elsevier (www.scopus.com) because of the need for comprehensive repositories based on verified sources and that include papers with specific quality standards. Across different scientific fields, Scopus is one of the databases that is most widely used to search the literature. Furthermore, it is one of the largest searchable citation and abstract sources which is continually expanded and updated (Aghaei Chadegani et al., 2013).

Professional publications were identified through an analysis of the most relevant practitioner-oriented sources. The analysis focused on the websites of leading professional accounting bodies and players recognised at the international level. Specifically, the organisations considered are the “Big Four” accounting firms (Deloitte, KPMG, EY, PWC), Chartered Professional Accountants Canada (CPA Canada), the American Institute of Certified Public Accountants (AICPA), Chartered Accountants Australia and New Zealand (CAANZ), the Association of Chartered Certified Accountants (ACCA) and the Institute of Chartered Accountants in England and Wales (ICAEW). In addition, the professional publications cited in the selected academic papers were also included. In this way, it was possible to take into consideration the works published by accounting and assurance companies, national and international professional associations,

international institutions and articles by authors published in professional journals. The selection of a relatively small sample is consistent with the approaches adopted by Unerman (2000) and Kim and Kuljis (2010), who claim that rather than superficially examining a large-scale sample of multiple web-based sources, a small sample allows for greater insights into key issues.

2.2.2. Applying practical screening criteria

In line with the aim of this research, the present study considered only the publications that are focused on NFD assurance. Therefore, publications about NFD that only mention assurance incidentally or in which it is secondary in importance were excluded. Moreover, to avoid language bias or a preference for specific languages, the search was restricted to publications in English.

With reference to the academic literature, quality criteria, such as journal rankings, were not used for exclusion purposes, as this review aims to give a comprehensive overview of the issues regarding the assurance of NFD. To develop in-depth analyses and comparisons and to draw significant insights, exclusively with sources specifically focused on the topic of this study indexed in Scopus, a homogenous set of sources has been considered, containing only journal papers. This led to the exclusion of books, presentations, book reviews and comments, reinforced by the will to consider only reliable and original sources, i.e., those that had passed a reviewing process (thus, presentations and other types of seminal

works have not been considered) and aimed to offer a structured scientific contribution (thus, book reviews have not been considered). Finally, the strict focus on journal articles is due to the fact that a systematic literature review is a process normally used "to collect articles, and then a qualitative approach is used to assess them." (Snyder, 2019, p. 335).

Regarding the professional literature, the choice was made to focus only on "research products". For this reason, reporting standards, laws, and guidelines as well as their mere explanation or summary were excluded, as they were considered too broad and generic.

2.2.3. Applying methodological screening criteria

In the third step, a review protocol for the analysis of the academic and professional publications was determined.

With regard to academic publications, the review protocol (Table 2.1) that was developed is divided into three sections and it represents an adaptation of that suggested by Stechemesser and Guenther (2012). The first section contains the bibliographic data of each publication, such as author(s), year and title of the publication, authors' affiliations, authors' geographic origins, the name of the journal, H Index and SJR 2017. The second section is focused on the background of the publications: type of research (distinguishing only the two macro-categories conceptual and empirical); methodology of the publication (quantitative,

qualitative, or mixed); the scale of the publication (national, international, comparative, or other); and, if relevant, the country analysed. The third section is centred on assurance categorisation and regards the object of the assurance process (and reporting frameworks), whether the assurance is voluntary or mandatory and the frameworks and assurance models considered in the publication.

The professional publications were analysed through a reduced review protocol: year, publishing organisation, title of the work, type of contribution, number of citations in the chosen academic database, first and last year of citations, and eventual presence of references to academic publications.

The review protocol was tested with several publications to ensure that it was applicable not only for accounting publications but also for those from other disciplines (Levy and Ellis, 2006; Webster and Watson, 2002).

In order to obtain a complete list of the literature, avoid the exclusion of any significant publications and improve the validity of the research, “backward & forward snowballing” for searching references was applied (Lutz and Woodhouse, 1997; Xiao and Watson, 2019). In particular, a backward search was conducted to identify relevant work cited in the selected articles by using the list of references at the end of the articles. A forward search to find all the articles that have since cited the articles reviewed was also conducted.

Table 2.1. Review protocol

Bibliographical data		
Author(s)	Who wrote the publication?	-
Year	When was the work published?	-
Title	What is the title?	-
Authors' affiliation	What is the institutional background of the first author?	-
Authors' geographic origin	What is the geographic origin of the first author?	-
Journal name	What is the name of the Journal?	-
SJR 2017	SCImago Journal Rank of the year 2017	-
H Index	H Index of the last year	-
Citations	How often is the publication cited?	-
Age	How many years have passed since publication?	-
Publication background		
Type of research	Does the research rely on empirical methods?	Conceptual, empirical
Methodology of the publication	Which methods are employed?	Qualitative, quantitative, mixed
Scale of the publication	On what scale was the research developed?	National, international, comparative, other
Country	Which country/countries is/are subject of the publication?	-
Assurance categorisation		
Object of assurance (and eventual framework)	What document is the object of assurance and with which framework does it comply?	GRI, IRR, ...
Voluntary/mandatory	Does the publication concern voluntary or mandatory assurance?	Voluntary, mandatory, mixed
Assurance model(s)/framework	Which assurance models or frameworks are considered in the publication?	ISAE 3000, AA1000AS, ...

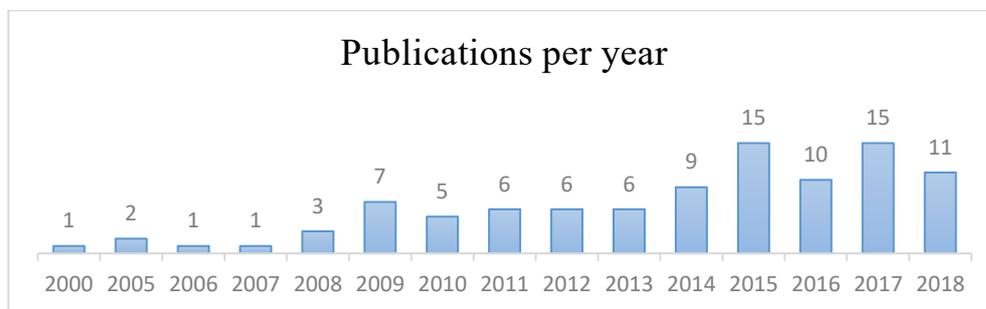
2.3. Findings

This section discusses academic and professional publications separately. In both cases, the search results are presented following the structure of the review protocols.

2.3.1. Academic publications

The search in the database yielded 106 hits considered relevant to the research. Excluding double publications, the final analysis dealt with 98 journal papers. The full list is presented in Annex 1.

Figure 2.1. Publications per year.

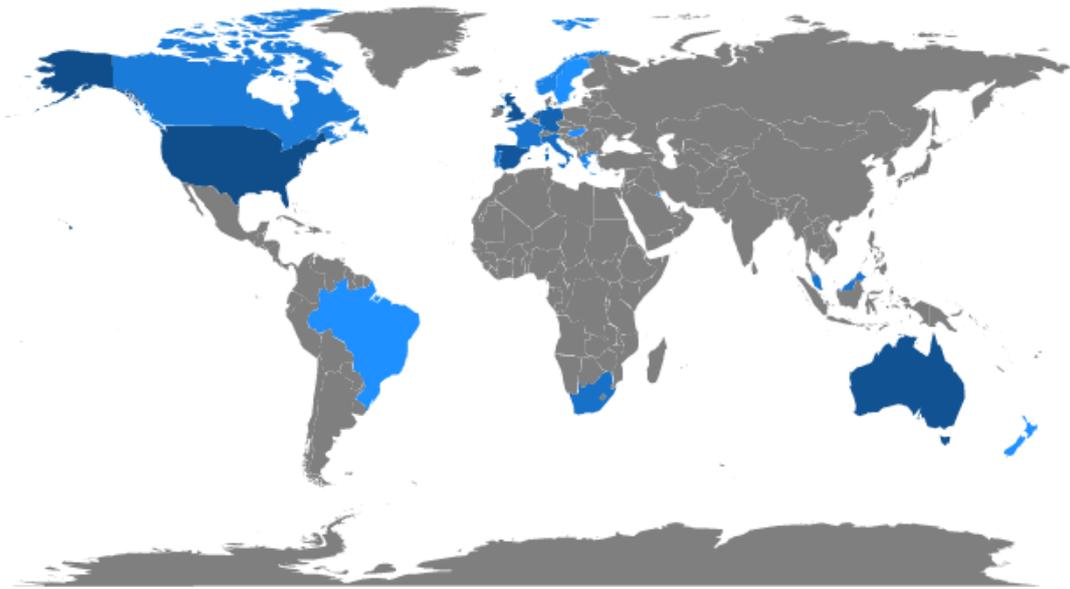


The oldest source identified was published in 2000. In Figure 2.1, considerable growth in publications appears in 2009 and 2015. 2015 is also the first year with more than ten publications. The years with the largest number of articles published are 2015 and 2017, with fifteen each.

The works are primarily authored by researchers from the accounting and management domains, but the presence of environmental studies scholars is worth mentioning.

Authors mainly come from Europe (54%), the USA (20%) and Australia (16%). Of the other countries, South Africa and Malaysia are the only ones with significant contributions.

Figure 2.2. Scientific publication production by country.



Overall, 44 different journals were counted. Only 16 of them contain more than one publication, as shown in Table 2.2. The journal with the largest number of articles is “Auditing: A Journal of Practice and Theory”, and it is the only one with

ten publications. Other journals with a large number of contributions are: “Australian Accounting Review” (7), “Journal of Business Ethics” (7), “Accounting Auditing & Accountability Journal” (6) and “Journal of Cleaner Production” (6). The vast majority (75%) of journals belong to the accounting and management domains, while only a minority (25%) are part of the energy, sustainability and environmental domains.

Academic journal quality is a much-debated issue. In the present study, the quality and prestige of the different publications in the pool of references, the SJR and the H Index, were applied in combination. While the H-Index gives more importance to the productivity of the journal, the SJR is more oriented towards measuring the influence and the quality of the journal. Using them in combination can allow a valuation that considers both the quantitative and qualitative profiles of the scientific journals. The ones with the highest SJR for the year 2017 are: “Accounting Review” (3.95), “Contemporary Accounting Research” (2.60) and “Accounting, Auditing & Accountability Journal” (2.19). The journals with the highest H-Index are “Journal of Cleaner Production” (132), “Journal of Business Ethics” (132) and “Accounting Review” (125).

Table 2.2. Journals with more than one publication

Journal name	# of Publications
Auditing	10
Australian Accounting Review	7
Journal of Business Ethics	7
Accounting Auditing & Accountability Journal	6
Journal of Cleaner Production	6
Business Strategy and the Environment	5
Managerial Auditing Journal	5
Sustainability Accounting Management and Policy Journal	5
Corporate Social Responsibility and Environmental Management	4
Accounting Forum	2
British Accounting Review	2
Corporate Governance	2
International Business Review	2
Journal of Business Economics	2
Social Responsibility Journal	2
Sustainability	2

To create a ranking of journals that considers both the H-Index and SJR, a combined score with min-max normalisation was calculated (Tsai, 2014). First, the H-Index and SJR scores were scaled to a range of 0 to 1, with 0 being the lowest and 1 being the highest score. Then, the two normalised indicators were added with the same weight in the combined score, in order not to favour one over the other.

The combined score obtained ranges from 0 to 2. This methodology was adopted because, in contrast to standardisation, it reduces the effect of outliers with a smaller standard deviation (Lee, 1997).

Table 2.3. Top 10 journal rankings

Journal	Combined score	H Index	SJR 2017
Accounting Review	1.95	125	3.95
Journal of Cleaner Production	1.37	132	1.47
Journal of Business Ethics	1.32	132	1.28
Accounting, Organizations and Society	1.28	110	1.77
Contemporary Accounting Research	1.24	77	2.60
Accounting, Auditing & Accountability Journal	1.13	76	2.19
Business Strategy and the Environment	1.04	75	1.88
Environmental Management	0.95	95	0.92
Auditing: A Journal of Practice & Theory	0.87	58	1.71
International Business Review	0.81	73	1.01

Thus, considering both the SJR and the H-index, three journals stand out: "Accounting Review", "Journal of Cleaner Production" and "Journal of Business Ethics".

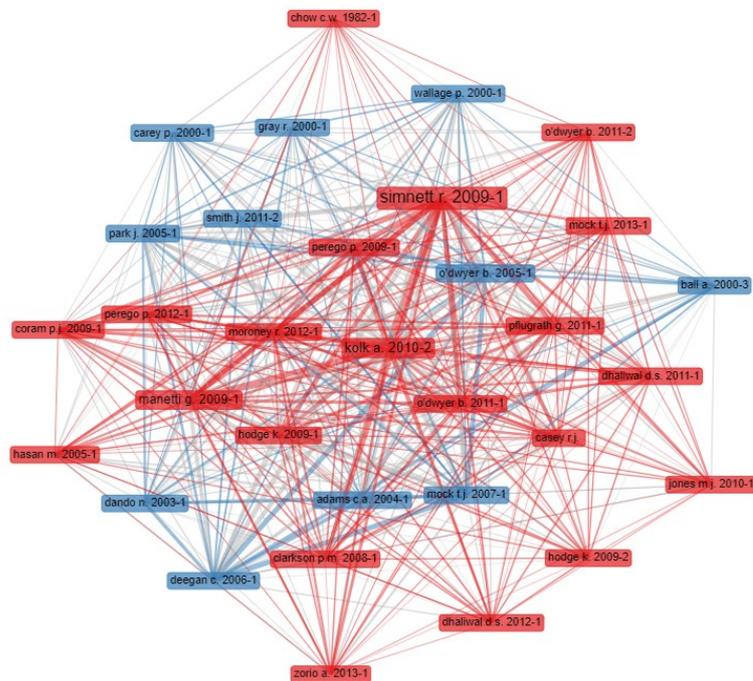
The authors with the highest number of overall citations are Simnett R. (766), O'Dwyer B. (511), Owen D.L. (409), Kolk A. and Perego P. (336).

The most influential article (Simnett et al., 2009) has been cited 365 times. Only two other articles count more than 200 citations (O'Dwyer and Owen, 2005; Kolk and Perego, 2010), and five count between 100 and 200 (O'Dwyer et al., 2011;

Perego and Kolk, 2012; Pflugrath et al., 2011; Manetti and Becatti, 2009; O’Dwyer, 2011). The average number of citations per paper is 39. The most cited publications have mostly been published between 2008 and 2011, when the topic began to garner significant attention from the scientific community.

Another descriptive aspect that can be analysed is the interaction, i.e., co-citations, among the authors that have contributed to the NFD assurance field (see Figure 2.3). In this case as well, the standout publication appears to be the one authored by Simnett et al. (2009).

Figure 2.3. Co-citation network



Regarding the types of publications, they were classified into conceptual/theoretical and empirical. Empirical publications were further divided into qualitative and quantitative studies, classifying all those methodologies that rely on statistical techniques as quantitative. Out of the 98 publications, 86 are empirical publications while the remaining 12 are conceptual/theoretical. Of the empirical publications, more than 80% are quantitative, with surveys and regression models being the most commonly employed methods. As far as qualitative contributions are concerned, their presence is becoming more significant. Very few were published before 2015, and nearly 60% of them have appeared in the last four years. This demonstrates that academics in this field are beginning to recognise the validity of this type of research.

In terms of publication scope, 38 are national, i.e., country-based, 13 offer comparisons among different countries and 25 are international. There are also four studies on specific organisations and four on specific industries. In other cases, the scope is not specified. Europe is the most highly represented region (26 publications), and inside Europe, studies tend to focus on the UK (11 publications). As for other parts of the globe, North America, mostly the USA, counts 10 publications, Oceania, mainly Australia, 8 publications, and other countries account for 12 publications. In other cases, the country of analysis is either not relevant or is not specified.

As mentioned above, NFD assurance is a broad topic with a multitude of disclosure practices and assurance frameworks. In this section, the focus is on the type of documents that the scientific community has taken into consideration and, accordingly, what can be considered NFD. The majority of articles do not refer to a specific model or framework; rather, they consider the content of the disclosure. Generic sustainability reports are the most often studied (31 articles), followed by GRI reports (29 articles) and generic CSR reports (19 articles). The predominance of this type of report was stable before 2010 and began to slowly dwindle thereafter. It should be underscored that “generic”, i.e., not framed or not labelled, sustainability/social reports represent the object of the majority of the studies (50 out of 98).

Table 2.4. – Object of assurance

Object of assurance	
Generic sustainability report	31
GRI report	29
Generic CSR report	19
Integrated Report <IR>	5
GHG statement	4
TBL report	3
NFI disclosure	3
Carbon emission disclosure	2
Social and environmental report (SER)	2

Interestingly, studies concerning the assurance of specific disclosure models appear to have considerable representation, with 29 concerning GRI reports and five relating to Integrated Reports, albeit to a lesser extent than those for which the disclosure model is not specified. The rise of this kind of research dates to post 2009 and has shown steady growth since then. After 2016, more than 80% of the publications specifically concern the above-mentioned models, indicating that scholars worldwide are converging on these frameworks. Only three articles refer to NFD, demonstrating that the usage of this term is still limited in the scientific community. GHG statements and carbon emissions disclosures are considered in only six articles. The analysis of the type of assurance and frameworks studied demonstrates the following situation: 40 articles concern voluntary assurance, 3 regard mandatory assurance, 3 relate to both, while 52 articles do not specify this information at all. The assurance frameworks referred to are almost exclusively ISAE 3000 and AA1000AS, with the former slightly more prominent than the latter. Nevertheless, in many cases (47 publications) the assurance framework is not specified.

2.3.2. Professional publications

The search in the websites for the chosen accounting organisations yielded 26 hits considered relevant to the research. According to the purpose of this study, that is to investigate the influence academic and professional literature could have on

each other, the professional publications cited in academic papers have been included in the analysis. This search produced 93 additional publications. Thus, 119 publications have been examined.

Contributions from many different countries can be identified, especially from national accounting bodies. The geographic distribution of the professional literature presents analogies with the academic distribution, although to a limited extent. Apart from international entities, the most influential contributions come from Europe and Australia, two of the regions where this topic became relevant earlier than in the rest of the world.

Professional publications tend not to be considered by academics and to be cited exclusively by authors from the same country as the publishing organisation. Thus, the vast majority of the publications were cited only once. This situation could be due to several factors, such as the fact that academics tend not to cite professional publications or that practitioners do not usually refer to their competitors' publications.

In this light, the analysis was focused on the ten most cited works in an effort to understand their characteristics and influence on the academic literature.

Table 2.5 shows that the publishing entities of the most cited publications are a Big Four accounting firm (KPMG), three professional accounting bodies (ACCA, Accountancy Europe and CPA Australia), a think tank and advisory firm (SustainAbility) and an international environmental authority (UNEP). They are all

international entities, with the exception of Accountancy Europe, which operates at a regional level and CPA Australia, which is a national professional body.

Table 2.5. Most cited professional publications

Year	Organisation	Title	Type	Cit.	Years cited
2008	KPMG	The KPMG Survey of Corporate Responsibility Reporting 2008	Survey	30	2010-2018
2011	KPMG	The KPMG Survey of Corporate Responsibility Reporting 2011	Survey	25	2013-2018
2013	KPMG	The KPMG Survey of Corporate Responsibility Reporting 2013	Survey	24	2015-2017
2002	KPMG	The KPMG Survey of Corporate Responsibility Reporting 2002	Survey	11	2006-2018
2005	KPMG	The KPMG Survey of Corporate Responsibility Reporting 2005	Survey	10	2009-2018
2015	KPMG	The KPMG Survey of Corporate Responsibility Reporting 2015	Survey	6	2017-2018
2004	CPA Australia	Triple Bottom Line—A Study of Assurance Statements Worldwide	Survey	5	2007-2013
2002	Sustainability and UNEP	Trust Us: The Global Reporters 2002 Survey of Global Sustainability Reporting	Survey	4	2005-2010
2004	ACCA	Towards transparency: Progress on global sustainability reporting 2004	Comparison of standards	4	2005 - 2012
2006	Accountancy Europe	Key Issues in Sustainability Assurance an Overview	Discussion paper	4	2008 - 2013

Apart from the publication by ACCA (2004), which is a comparison of standards adopted in different regions, and the discussion paper on sustainability assurance by Accountancy Europe¹ (2006), the other publications are surveys that aim to collect data and practices from the most prominent companies worldwide.

The time span of the most cited professional publications ranges from 2002 to 2015. The shorter length of this period, compared to the academic literature, which ranges from 2000 to 2018, can be related to the evolution and length of the academic publication process (submission, revision, publication).

The majority of the most cited professional publications can be found in the period 2002-2006. After 2006, only biennial editions of the KPMG Survey of Corporate Responsibility Reporting are present. This time distribution is very different from that of academic literature, which presents few contributions until 2009, and afterwards, shows fast, continuous growth. In contrast, the number of relevant professional publications seems to decrease over time.

Considering the time lag between professional publications and their first citation by academic literature, the average time is four years until 2009, with one exception (KPMG, 2008). After 2009, the time lag decreases to two years. It seems difficult to imagine an additional decrease due to the length of the academic

¹ The document was originally published by Fédération des Experts Comptables Européens, which became Accountancy Europe in 2017.

publication process. This suggests that academic literature has become faster in reacting to professional contributions.

The analysis of the citations shows that six editions of the KPMG Survey of Corporate Responsibility Reporting are the most cited sources by far. The 2008 edition is the single most cited publication by academic literature (30 cites). With the exception of the 2 conceptual publications produced by ACCA and Accountancy Europe, the other sources are cited by academics only because of the data they provide.

The number of years during which scholars cite a specific professional publication varies considerably from work to work. In particular, there are great differences between KPMG surveys and other professional publications. Focusing only on the latter, they tend to be cited in the following five to seven years. After this period, the publication is not mentioned anymore. KPMG surveys are more often cited than the other professional publications and they are also mentioned for a longer period (i.e., twelve years for the 2002 edition of The KPMG Survey of Corporate Responsibility Reporting). This phenomenon can be related to the development of longitudinal analyses that consider all the extant surveys.

2.4. Discussion

In this section, the results of the literature review are analysed to propose some reflections on trends, gaps, and possible research perspectives. The analysis

is proposed referring to the academic literature, to the professional literature and to the influence they have on each other.

Figure 2.4. Word cloud



2.4.1. The evolution of the academic literature

From the analysis of the academic literature, the first aspect that tends to emerge is that most of the studies are focused on sustainability (see Figure 2.4). Scholars have highlighted that most of the social, environmental and intellectual capital issues tend to be incorporated (or even “phagocytised”) by sustainability issues (Chiucchi et al., 2018). This means that the idea of sustainability has become the umbrella under which the different organisational non-financial dimensions are included. This idea of sustainability as a concept that is becoming broader and more popular is evidenced by the increasing number of publications, citations and number of authors involved in the discourse. Moreover, it seems that the debate on

NFD assurance is carried out not only by accounting journals, either general or specialised, but also by non-accounting publications active in the discourse of sustainability management.

Regarding the evolution of the academic literature, one of the core themes of this study which emerges from the evidence is that it is possible to identify four different stages of academic literature concerning NFD assurance. For each stage, it seems possible to define the period, the most recurrent aims of the research and methodology employed and the most active countries. Trends in the disclosure and assurance frameworks studied are also highlighted.

Figure 2.5. NFD Assurance: A timeline



In the first stage (8 articles), from 2000 to 2008, the contributions in this field are mainly focused on the identification and evaluation of standards for the assurance of generic sustainability reports. Most authors come from Australia and

Europe, and the research is based on what happens in these countries. A much more significant presence of conceptual and qualitative/exploratory studies emerges than in the rest of the time periods analysed. As an obvious consequence, there are no dominant standards or frameworks for disclosure and NFD assurance. The type of assurance, when specified, is always voluntary and limited.

The second stage (27 articles), from 2009 to 2012, is characterised by a limited presence of conceptual papers, although they are mostly concentrated in this timeframe, and this stage sees the rise of state-of-the-art quantitative studies. The conceptual papers attempt to suggest conceptual frameworks (Smith et al., 2011) or standards (Simnett and Nugent, 2007; Simnett et al., 2009) to develop historical analyses (Junior et al., 2014) or propose research agendas (Huggins et al., 2011, Ridley et al., 2011; Simnett, 2012). The empirical studies aim to describe the situation in specific countries as they adopt and implement the first standards for both disclosing and assuring non-financial information. Another significant trend is represented by the studies whose purpose is to measure the impact of sustainability assurance on company stakeholders. In this case, the leading country in terms of publications is the UK. Other European countries, like Greece and France, are just beginning to pay attention to this issue. Different types of NFD, like TBL reports, carbon emissions disclosures, GRI reports, social and environmental reports (SER), GHG statements, etc., become the object of assurance, which is still voluntary and

limited in most cases. ISAE 3000 and AA1000AS are generally recognised as the primary assurance standards by the academic literature.

The time period of the third stage (27 articles) is less clearly identifiable, but it can be approximated to between 2013 and 2015. In these years, it appears that the topic reaches its peak of relevance for the scientific community as the number of publications increases significantly, especially in comparison to the previous years. Subsequently, the numbers continue to grow but at a more even pace. Determinants and factors influencing the assurance of NFD are studied during these years for the first time. These kinds of publications commonly aim to understand why companies disclose and assure NFD voluntarily; what kind of assurator is most often chosen and how; and how the sector, governance structure, and similar factors influence sustainability assurance. The methodologies employed are mostly quantitative. In this phase, the USA is the object of many studies and it becomes evident that multi-national and international comparative studies are on the rise. There are no significant differences in terms of the types of disclosure and assurance, apart from the first appearance of articles concerning mandatory assurance (Ackers and Eccles, 2015; Ferguson and Pündrich, 2015).

The fourth and final stage (36 articles) ranges from 2016 until the end of the period considered in this study. The most significant difference from the previous phases concerns the object of assurance. Integrated Reporting starts to appear and, along with GRI reports, becomes the principal object of assurance in the articles

published in this timeframe, although GRI reports are more often mentioned. Conceptual papers are mainly literature reviews (Gillet-Monjarret and Rivière-Giordano, 2017; Velte and Stawinoga, 2017) or research agendas (Bagnoli and Watts, 2017; Cohen and Simnett, 2015; Simnett and Huggins, 2015). With regard to the empirical studies, many efforts are made to measure the value impact of assured NFD on investors and markets. The themes that were the object of research in the previous stages, mainly developed with quantitative methods, are re-investigated in this phase to adapt them to the new standards and playing field. This phase also boasts six articles and the highest number of qualitative studies, and the case study methodology is the most commonly employed (Brown and Kohlbeck, 2017; Seguí-Mas et al., 2016). The distribution of the research is more evenly spread from a geographic point of view, with Europe still ahead of other countries. In summary, it is in this phase that the issues of NFD and NFD assurance are further developed into a well-established practice.

Thus, from this analysis it is possible to point out a number of trends common to all the phases. First, nearly every article addresses a similar type of assurance: voluntary and limited. This is an obvious consequence of the fact that, in many countries, disclosing and assuring NFD has not yet been made mandatory. It has only been in recent years that some legislative initiatives, like the European Directive 2014/95/EU, are changing this situation (Cantino et al., 2019). Second, there is a clear predominance of empirical, quantitative studies. This is a more

general trend that primarily concerns accounting research. However, in the specific case of NFD assurance - a relatively recent topic - most academics try to generalise and understand its dynamics and determinants, and this has left the area of exploratory studies quite underdeveloped. The final aspect worth mentioning is the geographic concentration of nearly all the research in three regions: Europe, North America, and Australia. Asia is absent from this line-up, and the same can be said for South America and Africa, with the exception of South Africa.

2.4.2. The evolution of the professional literature

Regarding the professional literature, national accounting associations or similar organisations produce most of the publications, especially in the early stages of the studies. Each of the Big Four accounting firms provided contributions to the topic, but KPMG is, without a doubt, the one that played the most significant role. Their Survey of Corporate Responsibility Reporting, which was first published in 1993, has become a point of reference in the field of sustainability assurance both for academic and professional literature. Almost every journal paper analysed since 2013 cites at least one edition of the survey.

Most of the professional publications analysed are surveys about companies or countries, and this is the reason why the documents contain no references. This fact makes it more challenging to understand the mutual influences that may occur between professional and academic publications. Despite this difficulty, between

2000 and 2010 there is evidence of discussion papers and documents that aim to establish a dialogue between and among professionals, scholars, regulators, and standard setters (ACCA, 2004; Accountancy Europe, 2006).

In recent years, there has been a noticeable spike in the number of professionals-oriented publications due to the consolidation of standards for reporting and assuring NFD. The organisations that set the standards also periodically publish points of reflection and insights geared towards professionals. Those on the leading edge of this effort are the Global Reporting Initiative (GRI), the International Integrated Reporting Council (IIRC), the International Federation of Accountants (IFAC) and Account Ability (AA).

When a longitudinal view is taken of the professional literature, two main stages can be discerned. The first includes publications before 2015, while the second extends from 2015 to the present. In the first stage, the mostly survey-type studies (see the dominant role of the KPMG surveys) prove useful to understand the phenomenon and direct managerial attention to the issue. In the second stage, the publications largely attempt to offer overviews and recommendations to stimulate and improve managerial and professional approaches to NFD assurance. In this phase there is parallel growth in terms of both the approaches to NFD and the increasing numbers of companies engaging in NFD. The market consequently grows in terms of firms, consulting firms operating in the field and the number of regulatory and guideline initiatives.

2.4.3. Mutual influence between academic and professional literature

One of the purposes of this research is to understand whether the academic and the professional literature have influenced each other. The relationship between academia and practice has been a topic of concern since the introduction of accounting as a university subject. In literature, this relationship has been approached from the viewpoint of the gap between theory and practice or that between education and practice (MacDonald and Richardson, 2011). This study contributes to the first stream of research.

Does the professional literature consider academic papers? Only one of the ten most influential professional publications (Accountancy Europe, 2006) refers to the academic literature and cites only one publication: a conference paper by Owen and O'Dwyer written in 2004 which became a journal paper in 2005. As mentioned above, this paper represents one of the earliest and most often cited publications by scholars.

Does the academic literature consider professional publications? From the analysis, it emerges that only the survey-type professional publications are cited by scholars as data sources. Other types of professional publications are not taken into consideration or cited. More specifically, of the ten professional sources mentioned by scholars, six are different editions of the KPMG Survey of Corporate Sustainability Reporting. These surveys track sustainability reporting trends in the world's largest companies. Two of the other referenced documents serve the same

purpose, albeit with different modalities (Sustainability Ltd and UNEP, 2002; CPA Australia, 2004). The remaining two publications consist of a comparison of sustainability reporting frameworks (ACCA, 2004) and a discussion paper on sustainability assurance (Accountancy Europe, 2006).

Stepping back to take a broader view, it emerges that in the first of the four evolutionary phases, scholars cited professional publications that aimed to establish a dialogue between theory and practice (i.e., ACCA, 2004 and Accountancy Europe, 2006). Throughout the past decade, this phenomenon started to fade and almost completely disappeared after 2013. Academic publications do not consider the professional literature that proposes conceptual and exploratory studies aiming to develop new standards and practices or to improve the production and usage of NFD. Generally speaking, academic scholars tend not to consider professional publications or, more precisely, consider them only as data sources.

To summarise, there appears to be very limited intermingling between the academic and professional literature. The former has a minimal impact on the latter, and the professional publications are considered by academics almost exclusively for the raw data they provide. This result is consistent with the extant studies. Concerning the distance that stretches between academia and practice, some argue that this could be due to the adoption of rigorous social science methods that have led researchers away from the “messy and confusing” issues that exist in practice, allowing them to focus instead on a limited set of research questions that can be

“addressed by a narrow set of generally accepted research methods” (Kaplan, 2011:369). Moreover, this gap between research and practice is perceived to have widened over the past 50 years (Pfeffer, 2007), as most management academics focus on “issues that no manager would or should ever care about” (Miller et al., 2009:273). As for the distance between practice and theory, a possible explanation is that practice tends to focus on experimental and unproven ideas and methods as well as on data collected and/or treated with no scientific method (Kaplan, 2011). Another explanation could be that most of the knowledge provided by professional publications tends not to survive the test of time (Abrahamson and Fairchild, 1999; Macintosh, 1994; Mock, 1995). The gap between practice and theory is also witnessed by the fact that even accounting standard setters tend to consider academic literature in a limited manner (Pizzo et al., 2016). The same thing happens with the professional literature on this topic, possibly also because of its close connection with accounting standards.

It is worthy of note that even if there are academics that regularly publish in professional journals, none have been identified in the domain examined in this study. This can be explained by the fact that large consulting organisations and professional organisations have their own research offices.

In summary, this research work underscores the existence of a research-practice schism in the field of NFD assurance.

2.5. Conclusions and avenues for future research

The aim of this study is twofold: first, to explore the evolution of the literature on NFD assurance by systematising academic studies (i.e., papers published in scientific journals) and professional contributions (i.e., papers published in non-scientific sources) in the auditing field and, second, to understand whether mutual influence between theory and practice exists in the field of NFD assurance. In order to achieve this dual aim, a systematic literature review has been performed and the results have been analysed, adopting a longitudinal perspective.

As far as the first objective is concerned, the analysis has identified a four-stage development process in the academic literature: 1) Identification and problematisation; 2) Investigating the effects; 3) Investigating the determinants; 4) Development and consolidation. This development process can be useful to visualise and understand the past in order to generate new research projects for the future. Regarding the professional literature, it has progressed from an observatory stage characterised by surveys that helped to understand the current state to a proactive stage focused on overviews and recommendations. As regards the second objective, the present study highlights a very limited, nearly non-existent intermingling between academic and professional studies.

This research presents some limitations which must be considered in order to critically interpret the findings. The analysis of the interconnection between academic and professional publications was performed using citations. This

approach can be of limited usefulness in identifying the influence of the academic literature on professional publications. Because of the different target audiences, it is quite common that practitioner-oriented publications do not have references to articles in academic journals. This limitation could be overcome with additional studies analysing the theme and content similarities and differences of academic and professional publications.

For the final selection of academic sources, a single source of data was considered with the aim of developing an in-depth analysis. Some authors would argue that searches should not be restricted to bibliographic databases in order to have access to a wider selection of publications (Tranfield et al., 2003). Nevertheless, the one-source solution was chosen to provide a deeper analysis of the selected literature and a more homogeneous standard.

Lastly, employing a systematic methodology rather than making a review based on discretionally selected publications to find and analyse the sources of literature may limit the theoretical and contextual discussion. This limitation is inherent in the characteristics of the systematic review, but it could be overcome by further studies on the theoretical framework regarding NFD assurance research, starting with contributions that some authors have already provided (Gillet-Monjarret and Rivière-Giordano, 2017).

The practical implications of this study could concern both researchers and practitioners. It offers the opportunity for an in-depth understanding of the topic

and its evolution, with a categorisation that is understandable and consistent with both fields. In doing so, it endeavours to provide output relevant for both “worlds” that can narrow the gap that many acknowledge.

The limited influence academic and professional studies have on each other is undoubtedly a limitation, but it can also represent a starting point for continued evolution. There is growing pressure on accounting research, as in many other fields, to produce contributions with practical impact (McGeachin et al., 2016). In order to increase the practical relevance of academic studies, the research agenda could better consider the point of view of professionals. The collaboration between academics and practitioners could represent a valid arena in which to carry out research that is scientifically rigorous and relevant, thus reducing the risk of accounting research becoming an “increasingly closed community of scientists” (Quagli et al., 2016).

Lastly, for both academic and professional publications, this work can act as a springboard for future research. One future research avenue that could be explored is the passage from voluntary to mandatory NFD assurance. This is already occurring in some countries and may be about to occur in many others. How this transition is changing the playing field, and the further changes that will take place in terms of standards and practices, could also be a relevant research topic.

Another research perspective regards the impact of sustainability assurance on corporate governance, i.e., how the need to assure NFD can influence the

“production process” of this information as well as the management of internal control systems over non-financial reporting.

Moreover, while many studies aim to measure to what extent the assurance of NFD influences firm market values or the cost of capital, its role in the determination of a firm’s internal credit rating developed by banks and credit institutions represents an unexplored field.

Additionally, NFD assurance is still studied mostly as a dichotomous phenomenon (assured vs non-assured NFD). The heterogeneity linked to this practice (diversity of regulations, criteria, levels, scope, etc.) call for analysing and evaluating the differences of output in detail (Kolk and Perego, 2010; Martínez-Ferrero et al., 2018). Analysing NFD assurance in relation to its quality, and how this influences external stakeholders, could be a promising path of research for the future.

From the present analysis, it emerges that very few authors have studied the perspective of assurance providers. Considering the rising importance and relevance that disclosing NFD has gained and the prospects for its growth in the near future, it could be interesting to investigate the role played by assurance providers in the policymaking and production processes of NFD as well as the role they wish to play in the future.

Finally, most of the empirical studies analysed consider large, listed corporations, overlooking the point of view of SMEs. Understanding the possible

benefits, challenges and risks that SMEs will face when adopting NFD assurance could be another viable research avenue.

Chapter 3

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In Search of NFD Assurance Quality.

A Conceptual Analysis

3.1. Introduction

In last decade of studies on NFD assurance, most of the contributions focused on understanding its credibility and legitimacy (Farooq and De Villiers, 2017; Green and Li, 2012; O'Dwyer et al., 2011). In this sense, many authors have ventured into the study of this practice trying to understand assurance characteristics (Manetti and Becatti, 2009; Maroun, 2018; Perego and Kolk, 2012), the perspectives of internal and external stakeholders (Rupley et al., 2012) and its effect on financial markets (Casey and Grenier, 2015; Cuadrado-Ballesteros et al., 2017; Martínez-Ferrero and García-Sánchez, 2017).

The credibility and informational accuracy of the non-financial reporting is clearly linked to the practice of assurance. Due to the risk of greenwashing (Lyon and Maxwell, 2011), of window dressing (Lin, 2010) and more generally the urge

to reduce the risks associated with information asymmetries, the need for assurance on NFD has emerged (Morimoto et al., 2005). Assurance process seems to have a positive impact on the legitimacy of NFD for several reasons. First, assurance is correlated with the quality of NFD and to the reliability of information disclosed by companies (Kolk and Perego, 2010; Moroney et al., 2012). Second, assurance also tends to improve the legitimacy of NFD and stakeholders' confidence in the disclosed information (Hodge et al., 2009; Manetti and Toccafondi, 2012; Simnett et al., 2009). This process has also been found to improve corporate image and stakeholder accountability (Dando and Swift, 2003; Manetti and Becatti, 2009; Moroney et al., 2012).

In the literature, however, it is also possible to witness critical positions and perplexities on the practice of NFD assurance. They are related, for instance, to the lack of legal obligation in many countries to engage in this process (Waddock, 2008); to the diversity of assurance providers that can perform the service, such as accountants, consultancy companies and engineering firms (Huggins et al., 2011); to the different standards and methodologies employed (Deegan et al., 2006; Perego and Kolk, 2012). Specifically, the wide range of criteria, type of engagement, scope, format, etc., result in many different levels of assurance quality that may limit the study of the phenomenon (Perego and Kolk, 2012). Lastly, concerns have been raised on the effectiveness of assurance in increasing quality of NFD rather than

being a formal element with the main purpose of creating legitimacy for providers and clients (Michelon et al., 2019).

Recently, answering calls for research in this sense (Cohen and Simnett, 2015; Maroun, 2018), the discourse has starting to evolve considering no longer the assurance dichotomously (presence vs absence), but in relation to its quality. Unlike financial audit, assurance of NFD is not yet governed by universally accepted standards and principles. Although there is a convergence, both in terms of reporting and assurance standards, there is still no uniformity at the regulatory level (Perego and Kolk, 2012). The wide range of standard and methodologies makes difficult to assess the quality of a service still characterized by such a high level of heterogeneity. This problem is strongly connected with the lack of comparability that many highlighted as one of the main limits of NFD (La Torre et al., 2018).

Regulation of NFD play a crucial role in this regard. Although it is true that the rising importance of NFD has led to a growing number of initiatives in this regard (De Villiers and Sharma, 2017; Girella et al., 2018), there is still a considerable degree of discretion on the methodologies adopted. In Europe, for instance, the Directive 2014/95/EU allows to disclose to non-financial information without any restriction in terms of standards and methodologies applied. Additionally, the provision of external assurance on the content of NFDs is not mandatory, and, even if some countries contemplated it in the transposition of the

directive at national level, this practice has even less boundaries and regulations than the reporting.

The present study aims to understand how NFD assurance quality is defined and assessed. In order to do so a conceptual analysis is developed, adopting a broad approach that consider different sources and perspectives, focusing in particular on the process and outcomes of NFD assurance. The analysis starts from regulations and standards about NFDs reporting and assurance, moves to the different perspectives provided by academic literature, and concludes with potential similarities with audit quality. Lastly, in the final reflections section, similarities and differences of the various perspectives are discussed in order highlight points of convergence.

The investigation focuses mostly on the European context because this continent has always demonstrated pioneering the field of non-financial disclosures (Bebbington et al., 2000; Maroun, 2018). The scarcity of mandatory policies regarding non-financial disclosures worldwide makes the Directive 95/2014/EU innovative (Doni et al., 2019). Additionally, since 2019 the European Commission began to discuss the possible revision of the Directive, as one of the main activities in the development of the European Green Deal (European Commission, 2019). The revision, which is happening between 2021 and 2022, represents an opportunity of debate on the improvement of NFD reporting and assurance practices. This study tries to contribute focusing in particular on assurance quality and its assessment.

3.2. Regulations and standards for the reporting and assurance NFDs

3.2.1. Regulations and standards for the reporting of NFDs

According to the last edition of The KPMG Survey of Sustainability Reporting eighty percent of the big companies worldwide² disclose non-financial information, mostly about sustainability. In the last twenty years this percentage grew steadily, demonstrating that a practice once adopted mostly by some pioneering countries (mostly Europe, North America and Australia), has become a worldwide phenomenon destined to grow further and acquire ever greater relevance (KPMG, 2020).

The rise of importance of NFD, initially triggered by the need for multinationals to be accountable for their negative environmental and social effects (Kolk, 2003), led to the development of many reporting framework and to regulatory initiative to support, first, and make mandatory, later, the disclosure of information about environment and social sustainability (Mock et al., 2013).

At a regulatory level, the 2030 Agenda is maybe the strongest symbol of the commitment of governments at international level. European Union's main initiative to contribute the 2030 Agenda is the Directive 2014/95/EU, also known as "Non-financial reporting directive" or "Disclosure of non-financial and diversity

² The data refers to "N100" list, a worldwide sample of 5,200 companies. It includes the top 100 companies by revenue in each of the 52 countries considered by the survey. These statistics provide a broad-based snapshot of sustainability reporting among large and mid-cap firms around the world (for the full list of the 52 countries refer to KPMG, 2020, p. 50).

information by certain large undertakings and groups”, that have made non-financial reports, also called non-financial disclosures or non-financial statements, mandatory for about 6,000 large, European public-interest entities (PIEs).

The Directive, in force since the fiscal year 2017, requires disclosing annually information about, at least, environmental matters, social and employee-related matters, respect for human rights, anti-corruption and bribery matters, without prescribing the adoption of specific reporting standard or methodologies. In a later Communication from the Commission (2017/C 215/01) the Directive has been integrated with non-binding guidelines with the purpose of facilitating the disclosure of non-financial information by proposing samples of general and industry specific KPIs. One of the main purposes of this integration was to increase comparability of data. However, no calculation methodologies are provided and furthermore, since it is not binding, it is difficult to verify its effective application in practice.

In the absence of stringent regulations for NFD reporting methodologies, over the time different standards have emerged from the practice. Currently, the broadly dominant reporting framework employed worldwide is GRI, issued by the Global Reporting Initiative, followed by Integrated Reporting (<IR>), developed by the International Integrated Reporting Council (IIRC) (KPMG, 2020). Both issuing entities are private not-for-profit organizations that operates at an international level

backed by regulators, companies, investors, the accounting profession, and academia.

GRI is employed mostly to disclose non-financial information, while <IR> is used to combine both financial and non-financial data in a single annual report. Because of that the comparison between the two is only partially possible since they serve different purposes and support the preparation of disclosures with information of different nature. Additionally, despite this greater homogeneity of practices compared to the past, there are still different forms of reporting adopted, others than GRI and <IR> (such as SASB and ISO) and moreover, even in reports that use the same framework it is possible to find significant differences (Boiral, 2013). This is connected to the multidimensional character of non-financial information that made difficult, so far, to determine universal metrics and techniques (Venturelli et al., 2020). In addition, the occurrence of material errors seems to be more frequent in non-financial disclosure than in financial reporting due to the high level of complexity that characterizes the processing of non-financial data (Michelon et al., 2019). In light of this, at the current state, the adoption of a single standard is not sufficient to ensure harmonization and comparability of information due to the possibility of preparing different reports and employ several calculation methodologies, indicators and KPI under the same standard.

These problems should be overcome, at least partially, thanks to the proposal, adopted by the European Commission in April 2021, for a Corporate Sustainability

Reporting Directive (CSRD), which would amend the existing Directive 2014/95/EU. The proposal extends the scope to all large companies and all companies listed on regulated markets (except listed micro-enterprises); requires the assurance of reported information; introduces more detailed reporting requirements, and a requirement to report according to mandatory EU sustainability reporting standards; requires companies to digitally ‘tag’ the reported information, so it is machine readable and feeds into the European single access point envisaged in the capital markets union action plan. The Commission’s proposal for a CSRD envisages the adoption of EU sustainability reporting standards. The draft standards would be developed by the European Financial Reporting Advisory Group (EFRAG). The standards will be tailored to EU policies, while building on and contributing to international standardisation initiatives. The first set of standards would be adopted by October 2022.

According to EFRAG’s “Proposals for a Relevant and Dynamic EU Sustainability Reporting Standard Setting”, dated February 2021, the standard-setter should elaborate standards from a target architecture based upon three layers of reporting, three reporting areas and three topics. The resulting standards should provide a basis to develop a data taxonomy that facilitates the digitisation of sustainability statements and enhance comparability. By the end of 2021, the first official set of European NFD reporting standards should be formally adopted and published and with them the draft of legislation to amend Directive 2014/95/EU.

3.2.2. Regulations and standards for the assurance of NFDs

The rising importance of non-financial disclosures led to the need of external assurance (Junior et al., 2014, O'Dwyer and Owen 2005; Simnett et al., 2009). Unlike financial statement audit, NFD assurance is a relatively new and limitedly regulated practice (O'Dwyer et al. 2011). Guidance on exactly how a NFD can be assured is also limited (Maroun and Atkins, 2015). The result is a considerable variation in the methods used to perform the engagements as well as in the scope, type, and level of assurance provided (Deegan et al. 2006; Cohen and Simnett 2015). Nonetheless, assurance has now become a majority practice (KPMG, 2020) and, although it needs further development, it is considered pivotal to provide credibility to NFDs and increase stakeholder's confidence (Pflugrath et al., 2011). Despite the growing importance of NFD assurance it is still mostly considered in regard of its absence or presence, more than to its quality.

The difficulty of evaluating assurance services is linked, first of all, to the subject matter. As already mentioned, it is possible to prepare NFDs without restrictions in terms of models and methodologies employed. The heterogeneity and lack of comparability witnessed in the reporting of non-financial information is transmitted also to its assurance, and consequently to the assessment of the quality of this service. Additionally, it is possible to find further causes behind this criticality in the regulation and standards.

In regard to assurance the Directive 2014/95/EU, prescribe that “statutory auditors and audit firms should only check that the non-financial statement or the separate report has been provided”. In the transposition in national laws, member states can require, additionally, the disclosed non-financial information to be verified by an independent assurance services provider. No restriction is contemplated on methodology and outcomes of the assurance engagement. European countries opted for different solutions concerning assurance when transposed the Directive. For instance, a study from Aureli et al. (2018) illustrates how this difference concerned the assurance on the content of NFDs (additionally to its mere presence) and the definition of assurance providers allowed to carry out the engagement (auditors and audit firms vs other independent assurance of providers). These choices are extremely significant because they may introduce, for the first time, mandatory assurance on NFDs and additionally, profoundly shape the market for this service, limiting the choice of assurance providers. As a consequence of this, at present, between European countries it is possible to witness different mandatory conditions of assurance of NFDs, different restrictions regarding the qualified provider, heterogeneity of standards and methodologies used to carry out assurance engagement. Mandatory assurance on NFDs is one the elements that should be introduced with the mentioned EU Corporate Sustainability Reporting Directive, however, the legislative process is still ongoing.

Concerning the reporting standards, both GRI and <IR> recommends the use of external assurance to ensure accuracy and reliability to disclosed information (GRI, 2016; IIRC, 2021), however, none of them mandate this practice nor provide specific information on the characteristics, contents, and methods of execution of assurance. Additionally, criteria to assess the evidence and conduct test procedures, on the information disclosed in compliance with these standards, are provided only in a limited manner.

Moving to assurance standards, in the practice the two assurance most adopted for NFDs are AA1000AS and ISAE 3000³ (Junior et al., 2018; Maroun, 2018; Martínez-Ferrero et al., 2018). For reasons of synthesis, additional information about these, and other mentioned standards, are provided in Table 3.1.

According to ISAE 3000 the practitioner develops an understanding of the subject matter in order to assess the risk of material misstatement. On the basis of the assessed level of risk and quantified materiality, test procedures are performed to support an opinion on the subject matter. Two level of assurance are contemplated; a “limited” engagement gives a moderate level of assurance. An opinion is expressed in the negative: “nothing has come to the practitioner’s attention to suggest that the subject matter does not comply with the given criteria”. A “reasonable” assurance engagement results in a high level of assurance and the

³ The current version is named ISAE 3000 (Revised), because represents a revision of the first issued standard. From now it is referred in the text just as ISAE 3000.

practitioner expresses an opinion on whether or not the subject matter of the engagement complies with the stated criteria (IAASB, 2013).

AA1000AS standard was intended to address concerns about auditors' responsibilities, the type of opinions being provided and the importance of independence in a NFD assurance context (Dando and Swift 2003). Like ISAE 3000, an engagement performed under AA1000AS involves a risk assessment process and execution of test procedures to support an opinion on the subject matter of the engagement, distinguishing "high" and "moderate" level of assurance. Unlike ISAE 3000, AA1000AS is characterised also by two types of assurance engagements. "Type 1" engagements evaluate the adherence AA1000 principles. A "Type 2" engagement, additionally, ensure information reliability and quality. In order to sufficiently assure the reliability and quality of specified information, assurance providers must commit to providing findings and conclusions relating to the completeness and accuracy of such information (AccountAbility, 2020). While the level of assurance is based on the confidence of the assurance providers, the type of engagement refers to its scope. Combing the two elements is possible to classify four different kinds of engagement.

According to previous literature, accounting firms and auditors rely on ISAE 3000 for assuring non-financial information while consultants usually employ AA1000AS (Deegan et al., 2006; Junior et al., 2014). Prior studies additionally highlighted that limited/moderate assurance has, over time, become more

prominent than reasonable/high assurance engagements (Martínez-Ferrero et al., 2018; Mock et al. 2013).

In addition to the non-financial assurance standards just examined practitioners, especially the ones with auditor background, often rely on standards to ensure independence and quality control (Seguí-Mas et al., 2018). Two relevant examples, in the European context, are the Code of Ethics for Professional Accountants and the International Standard on Quality Control 1 (ISQC 1). It is worth mentioning that both standards are applied in both audit and other assurance engagements. The Code of Ethics for Professional Accountants is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality, and professional behaviour. ISQC 1 maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements. Both standards provide requirements and instructions to ensure high ethical and quality standard, however, in the case of NFD assurance they are referred to mostly in regards of the requirements of professionals engaged in the service. They are connected in a limited way to more technical and methodological aspects of the single engagement, and by consequences, to its process and outcomes.

Neither the Directive neither the most adopted standards provide clear guidance on the assessment of evidence and on the definition of thresholds for

materiality. From the analysis of the regulations and standards conducted, the picture that emerges is characterised by similar principles but very heterogeneous application methodologies. Additionally, none of framework considered provide stringent rules on the reporting and assurance of NFD. In the past, this “open” model was inevitable in light of the multidimensional nature of non-financial information and of the early stage of development of these practices. Currently, the high degree of subjectivity combined with “soft rules” is generating problems of evaluation and comparison of information, with consequent difficulties in defining quality.

Table 3.1. Regulations and standards for NFDs reporting and assurance

Standard	Issuing entity	Type	Latest version
Directive 2014/95/EU	European Union	Regulation	2014
GRI Standards	Global Reporting Initiative (GRI)	Reporting standard	2016
<IR> Framework	International Integrated Reporting Council (IIRC)	Reporting standard	2021
AA1000AS v.3	AccountAbility	Assurance standard	2020
ISAE 3000 (Revised)	International Auditing and Assurance Standards Board (IAASB - IFAC)	Assurance standard	2013
International Code of Ethics for Professional Accountants	International Ethics Standards Board for Accountants (IESBA - IFAC)	Ethical standards	2020
International Standard on Quality Control 1 (ISQC 1)	International Auditing and Assurance Standards Board (IAASB - IFAC)	Assurance quality standard	2005

3.3. Research perspectives on NFD assurance quality

Studies about NFD assurance produced contributions on several aspects of this practice, such as its determinant, its characteristics, and its outcomes. For reasons of synthesis, and consistency with the aim of investigating the quality of assurance mostly considering process and outcome factors, this section will be focused on aspects that are related to these two dimensions.

3.3.1. The choice of assurance provider and the level of assurance

The difference in terms of quality of the service between different NFD assurance providers has been investigated by academic literature for some time. Several results have been produced that often contrast each other. For instance, Perego (2009) claims that large accounting firms are more likely to provide high-quality assurance, in terms of report format and procedures performed, than other service providers. Hodge et al. (2009), on the contrary, finds only weak evidence that a proxy group for sustainability report users places more reliance on an assurance opinion provided by a professional accountant than specialist consultants. This is consistent with a study by Pflugrath et al. (2011) which showed that analysts in Australia and the UK see little difference in the perceived credibility of NFDs attested to by different assurance providers.

There is, however, some evidence suggesting that the assurance services provided by accounting and consulting firms differ. For example, O'Dwyer and

Owen (2007) and Perego and Kolk (2012) find that consultant assurance providers pay much more on the issues of completeness, fairness, and overall balance within their opinion statements than accountants and auditors. They are usually more ready to adapt and less conservative than their counterparts at accounting firms (O'Dwyer and Owen, 2007; O'Dwyer, 2011). Contrary to the findings of O'Dwyer et al. (2011) and Jones and Solomon (2010), because they do not audit the financial statements and have specialised skills, they may be seen as better placed to assure non-financial information (Wong and Millington, 2014). This is partially supported by an analysis of international NFD assurance practices by Mock et al. (2007) who claim that the Big 4 are less likely to provide a reasonable level of assurance than other assurance providers. This is possibly due to a perceived litigation risk. Perhaps for a similar reason, the large accounting firms tend to provide more information on the procedures used and assurance framework applied than other assurers but are less likely to publish recommendations for improving non-financial reporting or performance. Gillet (2012) questions whether practitioners, particularly those qualified in financial reporting audit, have the requisite expertise to conduct a NFD assurance engagement.

Large accounting firms may have a more comprehensive approach to assurance than other assurance providers (O'Dwyer and Owen, 2005). They seem to provide higher quality in terms of report formats and the scope of their testing practices (Perego and Kolk, 2012) which could be linked to greater tendency to

concentrate on the whole NFD and underlying processes than other assurance providers (Mock et al., 2013).

Concerning the level of assurance, according to Rivière-Giordano et al. (2018), it depends on the maturity of non-financial reporting. A moderated statement is provided when less than fifty per cent of the firm perimeter can be verified and when the data reliability has been assessed at eighty per cent. A reasonable statement is provided when more than fifty per cent of the firm perimeter can be verified and when assurance providers can assess the data reliability at ninety-five per cent (Grant Thornton, 2005). Consequently, choices made by companies on a specific level of NFD assurance create a new informational context for investors. In this regard, compared to the timeline of financial reporting and its audit, non-financial information reporting and its assurance are considered by many still in early stage of development (Tschopp and Huefner, 2015). According to Hodge et al. (2009) the provision of a high or moderate level of assurance does not necessarily affect users' perception of the credibility of tested NFDs. These authors do, however, warn that the outcome of their experiment may be due to a lack of understanding of the technical difference between limited and reasonable assurance engagements by non-auditors. Contrasting results are produced by Rivière-Giordano et al. (2018), according to which, financial analysts are less likely to give recommendations in favour of a company that displays NFDs with limited/moderate assurance than a company with no assurance statement at all.

3.3.2. Symbolic outcomes of NFD assurance

Limited assurance is connected to a key aspect concerning assurance outcomes: the symbolic and substantive use of this practice. According to the substantive approach to corporate legitimacy, concrete changes in corporate actions are employed to align organizational strategies and processes to social norms (Chen and Roberts, 2010). Translating this concept to NFD assurance, under a substantive approach, assured NFD are a means to enhance a firm's transparency for stakeholders and reduce information asymmetry regarding their non-financial performance (Sen et al., 2006). The symbolic approach, on the other hand, implies the use of assurance statements to portray a corporation as committed, regardless of its real efforts (Cho and Patten, 2013), carrying the risk of facilitating an inaccurate company image (Hopwood, 2009; Marquis and Qian, 2013). According to this categorization it is possible to expect different outcomes from assurance of NFD (Maroun, 2018). The symbolic use of NFD assurance will produce symbolic display/impression, protection of management's interests, avoidance of scrutiny. Substantive outcomes, instead, will be improving NFD quality, reduce agency costs, reduce legal risk, enhance value relevance, enhance credibility, stakeholder confidence and positive change.

According to Ball et al. (2000), NFD assurance is focused on the application of controls rather than the quality of disclosures and the reliability of non-financial performance. As a result, the assurance process is inward-focused and may not be

relevant to external stakeholders. Similarly, O'Dwyer and Owen (2007) discover that the majority of test procedures are intended to validate data included in NFDs and the data processing system. Lastly, concerns have been raised on the effectiveness of assurance in increasing quality of NFD rather than being a formal element with the main purpose of creating legitimacy for providers and clients (Michelon et al., 2019). Connected to this, a recent stream of research (Ballou et al, 2018; Michelon et al., 2019; Venturelli et al., 2020) highlighted a greater presence of restatement in externally assured NFDs, questioning to what extent this correlation is linked to greater accuracy and update of methodologies rather than a display of commitment by disclosing companies and assurance providers.

Limited regulation of NFD assurance engagements, low number of qualified opinions, and reluctance to provide recommendations raise the possibility of “capture” of assurance services and to produce symbolic outcomes (Adams and Evans, 2004; Manetti and Toccafondi, 2012; O’Dwyer et al., 2011). If this is the case, NFD assurance fails to improve accountability and empower stakeholders, and functions only as a symbolic showcase in which non-expert users misplace their trust (O’Dwyer and Owen, 2005).

3.3.3. Materiality construction in NFD assurance

The definition of materiality is a debated issue in the reporting of non-financial information, since, as highlighted, there are no stringent rules and

methodologies for defining the thresholds. O'Dwyer and Owen (2005) underline a low level of detail on how materiality is being determined; the absence of a strategic testing approach by some assurance providers and reluctance to address assurance reports to the broad group of stakeholders who make use of NFDs. Despite an increase in information provided in the statements by assurance providers, details about the nature and scope of the work being performed may still be insufficient (Ball et al., 2000; Deegan et al., 2006; Gillet, 2012). As a result, the extent to which users comprehend and are prepared to place their trust in assurance opinions is called into question (Deegan et al., 2006; Wong and Millington, 2014).

A case study conducted by Canning et al. (2018) develops and extends Power's (2003) theorisation of how new areas are made auditable, typifying interrelated concept and processes. First, when looking for technologies capable of dealing with non-financial data, assessor flexibility is required. Non-accountant assessor intuition underpins flexibility, allowing them to deal with inherent ambiguity in the non-financial assurance domain. Second, non-accountants who adhere to the perceived authority of structured financial audit methodologies rationalize this intuition retrospectively. Third, collaborative, holistic decision-making processes emerge gradually and are characterized by the mobilization of alliances of (accountant and non-accountant) expert assessors seeking synergies in order to unite the distinct aspects of their formal and tacit knowledge bases. These alliances seek social cohesion, which aids in the formation of a social consensus

around the approaches that both types of assurors take to determining and assessing materiality. Non-accountants gained confidence in their intuitive materiality judgments by loosely tying them to financial audit methodologies. This is in line with MacLulich's (2003) claim that in a new audit regime where auditors are expected to perform a more qualitative assessment, the assurance process may benefit from more unstructured judgments.

3.3.4. Models for measuring NFD assurance quality

To overcome the difficulty of directly measuring the quality of NFD assurance academic literature has proposed, over the years, several proxies. Details about the indexes and its variables are presented in Table 3.2. The common ground on which they are based is the evaluative framework provided by O'Dwyer and Owen (2005). These authors linked the minimum requirements of a high-quality assurance statement to the standards issued by the leading entities of NFD reporting and assurance (specifically AccountAbility, Accountancy Europe and GRI). In a mature environment the adherence to standard such as ISAE 3000 and AA1000AS could be considered, per se, a synonym of high-quality assurance. However, as treated in the previous section, there are several variables in the adoption of the mentioned standards (e.g., level of assurance, scope, assessment of information, etc.) that result in a considerable level of heterogeneity of process and outcomes.

Every research mentioned is based on content analysis and/or “binary” analysis of assurance statements employed to code an index to measure the quality of NFD assurance and study its possible determinants. Perego and Kolk (2012) study the effect of different assurance standards and assurance providers on assurance quality, illustrating great variability in the adoption of assurance practices and adding that several multinational corporations project a decoupled or symbolic image of accountability through assurance, thereby undermining the credibility of these verification practices. In contrast Zorio et al. (2013), that analyse the determinants of assurance quality for Spanish listed companies, conclude that the level of assurance quality is fairly acceptable, according to the index proposed. According to Seguí-Mas et al. (2015) country-level, industry factors and the choice of assurance provider do affect assurance statements’ quality. Coherently, evidence produced by Martínez-Ferrero et al. (2018) shows a greater quality of statements when the assurance providers are industry specialists, because of their stronger industry knowledge, and when they have greater experience in the assurance market because of the extended length of the relationship with the client. In addition, the higher quality associated with industry expertise and experience is increased when assurance providers are accounting firms, given their greater skills and training within the audit profession.

Table 3.2. NFD assurance quality indexes

Authors	Perego and Kolk, 2012	Zorio et al., 2013	Seguí-Mas et al., 2015	Martínez-Ferrero et al., 2018
Type (score/index)	Index ranging 0 - 27	Index ranging 0 - 10	Index ranging 0 - 31	Index ranging 0 - 23
Method (binary/context)	Content analysis	Binary methodology and content analysis	Content analysis	Content analysis
Relations investigated	Different assurance standards and assurance providers on determinants of assurance quality	Determinants of assurance quality for Spanish listed companies	Determinants of assurance quality for big cooperatives	Expertise and experience of assurance providers as determinants of assurance quality
Elements included				
General information	Title, addressee, report date	Addressee	Title, addressee, report date.	Addressee
Assurance provider	Name of the assurance provider, location, responsibilities, independence, impartiality, competencies	Name of the assurance provider, independence, mention to IFAC's independence standard	Name of the assurance provider, location, responsibilities, impartiality, competence	Responsibilities, independence
Assurance process	Scope, level, criteria to assess evidence, assurance standard, reference to materiality level	Assurance standard, level of assurance, procedures undertaken	Scope, criteria to assess evidence, assurance standard, level, reference to materiality level, stakeholder participation in the assurance process	Level, scope, criteria to assess evidence, assurance standard, reference to materiality level
Assurance outcomes	Summary, completeness, responsiveness to stakeholders, general conclusion/opinion	Conclusion, number of sections, recommendations,	Summary, completeness, responsiveness to stakeholders, limitation to the scope, general conclusion/opinion, recommendations.	Completeness, responsiveness to stakeholders, general conclusion/opinion

3.4. Learning from audit quality

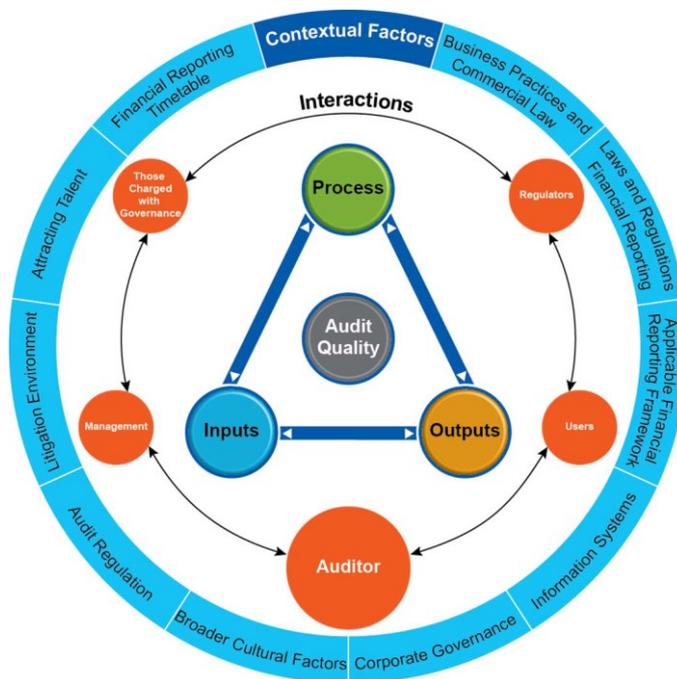
The different nature of NFDs and financial reports has made necessary to develop new methodologies and processes for the assurance of non-financial information. However, in defining the quality of NFD assurance, some elements, not without adjustments, could be drawn from the audit. Furthermore, given that the development of the concept of audit quality took place over several years, and is still evolving, it could be possible to capitalize on the experiences already matured in order to accelerate the same process for NFD assurance quality. According to both practice and theory, audit quality is a complex subject and there is no definition or analysis of it that has achieved universal recognition (DeAngelo, 1981; IAASB, 2014; Knechel et al., 2013). Nevertheless, given the longer tradition it had and the considerable number of contributions by standard setters, practitioners, and academics, it is possible to find several models and experiences for assessing the quality of audit.

At a regulatory level, the adoption by European countries of a unique body of rules for the audit of financial information, the International Standards of Audit (ISA) by IAASB, ensures homogeneity and strict methodologies in the conduction of audit engagements. Because of that minim requirement in terms of process and outcomes are provided. Additionally, the matter of audit quality is treated by specific principles such as the already mentioned ISQC 1 (mostly at a service

provider level) and ISA 220 (at an engagement level). Each of these standards provide clear definitions and explanations for their practical application.

Additional models, practical or theoretical, suggest qualitative and quantitative criteria to achieve a broader perception of audit quality. The Framework for Audit Quality (IAASB, 2014), for instance, describes factors that contribute to audit quality at the engagement, audit firm and national levels, for financial statement audits. Its core is represented by input, process, and output factors, also considering the key interactions between these elements and the contextual factors (Figure 3.1).

Figure 3.1. IAASB’s Framework for Audit Quality



Source: International Accounting Standards Committee (IASB), 2014.

The framework aims to raise awareness on the key elements of audit quality, encourage stakeholders to explore way to improve audit quality and facilitate the dialogue between stakeholders of the topic. It does not overlap with the ISAs principle because it is primarily concerned with defining key elements and factors that influence audit quality, rather than prescribing specific methodologies and rules.

A similar categorization is noticeable also in the academic literature, as demonstrated by Knechel et al. (2013), according to which indicators of audit quality are divided in four categories: input, process, outcomes, and context elements. Focusing on process, the quality of the audit process is dependent on the quality of auditor judgments during each phase of the audit process, for instance, when assessing risks, performing analytical procedures, and obtaining and evaluating audit evidence (Dowling and Leech, 2007). Because of large amounts of uncertainty, both during the audit process and in audit outcomes, auditors' judgments are susceptible to individual cognitive biases. It is possible to recognize common factors and biases that have been found to threaten audit quality when making professional judgments during the different audit processes (Ayers and Kaplan, 2003). Also, the audit process can mitigate the effects of individual errors in judgments thanks to reviews and quality control processes (Woods and Jacobs, 2010).

The outcomes of an audit are uncertain and unobservable. As such, researchers turn to indirect, but measurable, proxies for audit outcomes. Further, they tend to identify what high audit quality “is not” rather than what it “is” (Knechel et al, 2013). The common measures of audit outcomes, to proxy for low audit quality, include the presence of financial statement restatements, auditor-related litigation, poor financial reporting quality, inaccurate audit reports, and audit deficiencies identified during regulatory reviews (Balsam et al., 2003; Francis et al., 1999; Li and Chen, 2011). In addition, going concern reports for financially distressed firms are used as a positive audit quality outcome measure (Carson et al., 2013). The authors note that these measures are indirect and that each has their own unique limitations as proxies for audit quality. However, due to the impossibility to observe audit outcomes, indirect measures may be the next best solution (Knechel et al, 2013).

By searching for specific metrics and indicators for assessing the quality of the audit, it is possible to draw on the American experience. Audit Quality Indicators (AQIs), issued by PCAOB, are a portfolio of quantitative measures. Taken together with qualitative context, the indicators may inform discussions among those concerned with the financial reporting and auditing process, for example among audit committees and audit firms. AQIs are based on twenty-eight non-binding indicators divided in three categories: professionals, process, and results. The full list presented at Table 3.3. For each indicator KPI, metrics and

calculations are provided. Since their introduction, AQIs have gained popularity, albeit not without criticism, in the professional and academic fields due to their ease of calculation, comprehensibility, and comparability between different situations. Recently, some audit regulators in Europe have been experimenting with their use.

Table 3.3. Audit Quality Indicators (AQIs)

	Audit professionals
	Availability
1	Staff leverage
2	Partner workload
3	Manager and staff workload
4	Technical accounting and audit resources
5	Persons with specialized skill and knowledge
	Competence
6	Experience of audit personnel
7	Industry expertise of audit personnel
8	Turnover of audit personnel
9	Amount of audit work centralized at service centres
10	Training hours per audit professional
	Focus
11	Audit hours and risk areas
12	Allocation of audit hours to phases of the audit
	Audit process
	Leadership and tone at the top
13	Results of independent survey of firm personnel
	Incentives
14	Quality ratings and compensation
15	Audit fees, effort, and client risk
	Independence
16	Compliance with independence requirements
	Infrastructure
17	Investment in infrastructure supporting quality auditing
	Monitoring and remediation
18	Audit firms' internal quality review results
19	PCAOB inspection results
20	Technical competency testing
	Audit results
	Financial statements
21	Frequency and impacts of financial statement restatements for errors
22	Fraud and other financial reporting misconduct
23	Inferring audit quality from measures of financial reporting quality
	Internal control
24	Timely reporting of internal control weaknesses
	Going concern
25	Timely reporting of going concern issues
	Communications between auditors and audit committee
26	Results of independent surveys of audit committee members
	Enforcement and litigation
27	Trends in PCAOB and SEC enforcement
28	Trends in private litigation

Source: Public Company Accounting Oversight Board (PCAOB), 2015.

3.5. Final reflections

Having illustrated, in a broad perspective, the various concepts related to NFD assurance quality, it is possible to highlight convergences and criticisms. From the analysis possible suggestions for development emerge that are addressed mostly to regulators and standard setters.

Starting from NFD standards and considering their impact on assurance quality, ISAE 3000 and AA1000AS provide only broad parameters for expressing an opinion on certain non-financial information, not all of which has been tailored for the practicalities of NFDs reporting. For example, tests of controls, common in financial report audits, are unfeasible if generally accepted control frameworks are not agreed to and if these do not match the objectives of reporting guidelines developed either internally or by standard setters such as the GRI and IIRC (Maroun and Atkins, 2015). In addition, test procedures are typically framed in quasi-mathematical terms. These are appropriate for testing financial balances and transactions but may not always be suitable for mainly qualitative, subjective, and prospective nature of NFDs. Lastly, <IR> framework is mainly principles-based and GRI provide recommendations that are far from by considered as reporting rules. Consequently, there is considerable variation in how the framework is interpreted and applied, making problematic to assess the quality of assurance provided on such disclosures.

Another key aspect considered is the determination of materiality. Professional standards were developed in a financial reporting context where balances and transactions can be quantitatively assessed and evaluated against clearly defined criteria (Edgley et al., 2010). While there has been some research on different materiality frameworks, precisely how these can be applied for the purpose of assuring NFDs remains unclear. Related closely to this, the criteria against which the report would need to be evaluated are vastly homogeneous.

As explained by O'Dwyer (2011), subjective assessments of non-financial performance and reporting must be coupled with evidence obtained from institutionalised financial audit methodologies constraining the potential of NFD assurance. This is often seen in the limitation of the scope of the assurance opinion largely because of the lack of generally accepted standard providing robust assurance for all aspects of an organisation's non-financial reporting. Even when suitable criteria are available, these cover-specific disclosures rather than the corporate report as a whole or underlying non-financial performance. In addition, the criteria normally deal with factual content. Examples include opinions on water usage, greenhouse gas emissions, health and safety statistics and total number of employees. Details on matters such as the viability of the business model, the interconnection between different types of capital and adequacy of selected key performance indicators are outside the scope of conventional assurance

engagements. Similarly, the extent to which stakeholders' concerns are being addressed by NFDs is not covered.

In order to move from the analysis to suggestions for improvement, the various academic contributions considered should be considered in terms of their timescale. Earlier research was focused on what was then emerging forms of reporting of non-financial information and associated assurance practices (Dando and Swift, 2003; O'Dwyer and Owen, 2005). The last two decades has seen the growing popularity of NFDs (KPMG, 2020) and the emergence of an integrated reporting framework which further emphasises the need for multi-dimensional reporting to complement conventional financial statements (De Villiers and Alexander, 2014). At the same time, stakeholders are beginning to appreciate the role played by high-quality NFDs for explaining how companies are generating sustainable and responsible returns (Maroun and Atkins, 2015; Barth et al., 2017). As more jurisdictions mandate or promote the preparation of NFDs in statutes or codes on corporate governance, companies are coming under increasing pressure to explain how they are ensuring that their corporate reports are accurate, reliable, and complete (Junior et al., 2014). The result is a clear need for a more comprehensive approach to assurance which, unlike current attest services, can provide insights on the NFDs as a whole and underlying business practices (Cohen and Simnett, 2015).

For what concern the choice of assurance provider the debate on the differences, in terms of quality, between accountant and non-accountant, is still

open. For this reason, the choice of some countries to limit the assurance of PIEs' non-financial disclosure to statutory auditor could be contraindicated, if they are only accountant and accounting firm. Rather, the creation of specific professional registers for NFD assurance providers, could be advisable. Access should require the same professional requirements and compliance with ethical/quality standards as currently required for auditors (e.g., ISQC 1). This way, the coexistence and contamination of both categories' peculiarities: accountants' "method" experience and non-accountant assurance providers' "industry" experience could be allowed to continue (Canning et al., 2018).

The level of NFD assurance is strongly related to the quality of this service as well as the potential symbolic outcomes. To overcome the problems connected with limited assurance, regulators may consider introducing the mandatory application of reasonable assurance. However, due to the difficulty in achieving sufficient levels of confidence when performing NFD assurance engagements (Rivière-Giordano et al., 2018), an exclusively reasonable assurance model would be difficult to apply for the time being.

Examining the various models for measuring NFD assurance quality and evidence proposed by authors, this practice has a higher level of homogeneity than NFD reporting, as evidenced by greater convergence in terms of process and outcomes. As a result of that, assurance, and by consequence the assessment of its quality, seems more comparable than the reporting of non-financial information. It

is worth noting, as a possible future development, that studies on assurance quality focused primarily on its determinants. The impact and perception of assurance quality among external stakeholders, as defined by these models, has received little attention.

A major change in the “playing field” is imminent and is bound to fundamentally affect the issues highlighted by this study. It seems clear that it is not just the European Commission’s view that the current NFD reporting regime is not sufficient; the same view is shared by member states and the European supervisory authorities. As consequence, the development of EU reporting standards for NFDs has begun and it seems it will start from the best and most widely accepted elements of existing international ESG reporting standards (EFRAG, 2021).

Concerning NFD assurance, as previously highlighted, it shows a greater level of homogeneity, compared to reporting. In terms of the professional and ethical standards of subjects performing the assurance, the rules already in place for financial reporting can be applied to non-financial reporting too, as is already done in many cases. While greater adaptation is required, also the process and outcomes factors can benefit from existing models, not so much from direct translatability of methodologies as from capitalizing on the experience that led to their formation and refinement.

It is possible to expect that a common set of standards for NFD reporting will lead to a greater comparability of NFD assurance and ease the assessment of its

quality. NFD assurance standards and practices seem more homogeneous and easily adaptable than reporting ones. For this reason, it seems reasonable to expect that, once the reporting "playing field" is homogenized, the assurance profession will adapt quickly.

To increase the evaluability of assurance quality it would be advisable to provide this practice with specific regulation. Once that assurance on the content (and no longer on the mere presence) of NFDs will be mandatory in every European country the focus should shift to prescribing its minimum characteristics. For instance, while it may be too early to make reasonable assurance on NFDs mandatory, it is possible to start getting closer to that model by providing clear rules for the assessment of evidence, definition of materiality and triangulation of information.

The revision of Directive 2014/95/EU represents a great opportunity in this regard. Leaving an open environment in terms of methodologies and standards adopted to report and assure NFDs seemed the best way, initially, to facilitate the mandatory adoption of these practices. Considering that a convergence emerged, and strengthened during the last few years, it may be time to provide more stringent rules. Given the multidimensional nature of non-financial information, imposing universally applicable methodologies and metrics for its disclosure and assessment would be difficult. As a result, a well-balanced option could be the provision of

sector-specific indicators, mandatory minimum indicators with strict rules, and firm-specific indicators defined only in terms of thematic areas and principles.

Chapter 4

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Does NFD Assurance Quality Influence Market Confidence? An Empirical Study

4.1. Introduction

In recent years, interest in social, environmental, and ethical performance in companies has increased. This has been proven by the greater attention being paid to performance not solely related to financial aspects (Kolk, 2003). For this reason, financial disclosures have been accompanied by the reporting of non-financial information on corporate strategy and operations (Cormier and Magnan, 2014), and specifically, on aspects of social and environmental performance (Rupley et al., 2012). The reporting and understanding of these non-financial dimensions are of interest for a growing audience of internal and external stakeholders (Giuliani and Chiucchi, 2019). Thus, companies must deal with their stakeholders' expectations under the pressure of being ethical and transparent (García-Sánchez et al., 2019).

In all, NFD should incentive companies to improve the accuracy and the usefulness of the information disclosed about social and environmental matters (Cho and Patten, 2013).

The growth experienced by this disclosure practice has not coincided with a greater confidence in the reliability of the data divulged (Simnett et al., 2009). Even if some scholars and practitioners have joined the debate regarding the usefulness and credibility of NFD, several aspects are still unknown (Rupley et al., 2012) such as the market reactions to NFD (Cuadrado-Ballesteros et al., 2017; Francis et al., 2005; Martínez-Ferrero and García-Sánchez, 2017). Concerning investors' opinion on NFD, it must be highlighted that these reports produce better informed investors, allowing them access to data that had been previously unavailable (Francis et al., 2005). Findings like those revealed by Martínez-Ferrero and García-Sánchez (2017) support the argument defended by the authors that NFD allows investors to better understand economic risks, which translates into a lower cost of capital for firms. It is not sure, however, how different elements, such as its assurance, influence capital markets.

To develop more credible NFD and decrease the risks related to information asymmetries, the need for assurance has emerged (Morimoto et al., 2005). This need has also been recognised by policy makers across the globe. For instance, in the European context, the Directive 2014/95/EU has allowed national governments to make the assurance NFD mandatory, and several countries have chosen this

option. Assurance can be crucial in bridging the credibility gap that characterises NFD (Manetti and Becatti, 2009) as the high expectations stakeholders place on it demonstrates (Green and Li, 2012). Because of this, auditors and consultants have increased the attention they give to the provision of assurance on NFD (Elliott, 2002) and have developed new professional services to satisfy this growing demand (Junior et al., 2014). The topic of NFD assurance has rapidly increased in importance, and many authors have ventured into this field of study in order to understand assurance practices and the development of the market for this service (e.g., Ballou et al., 2018; Huggins et al., 2011; Michelon et al., 2019; O'Dwyer and Owen, 2005; Perego and Kolk, 2012; Pflugrath et al., 2011; Simnett et al., 2009). However, the effect of NFD assurance on capital markets, especially regarding quality, is still scarcely explored. For this reason, this research explores the topic aiming to understand whether, and to what extent, capital markets evaluate assurance quality in a positive way. Thus, the first research question this study addresses is whether or not higher quality NFD assurance decreases the cost of capital by improving market confidence.

Contributing to the debate about NFD assurance and the dynamics of this rising profession, a recent stream of studies (Ballou et al., 2018; Michelon et al., 2019) links the accuracy of NFD (specifically, CSR reports) with the issuance of corrections in posterior reports; so-called restatements. Ballou et al. (2018) state that the information in a NFD is considered to be restated if it is updated in a later

disclosure because of error/omission or improvements in definitions, scope, or calculation methodologies. While the presence of information restatements from previous years is negatively regarded in financial reporting, both professionals (KPMG, 2011, 2013) and the academic literature (Ballou et al., 2018) underline that this practice is perceived positively in NFD reporting, as a means of improving data accuracy and reporting methodologies.

The two above-mentioned studies highlight a positive correlation between NFD restatement and assurance, providing alternative and partially complementary explanations for this phenomenon. Ballou et al. (2018) support the thesis that assurance, by providing correction to previous disclosures related to errors and methodological updates, enhances the accuracy and comparability of NFD. Michelon et al. (2019) claim that restatements have mostly become an instrument used by NFD assurance providers to legitimise their profession and compete in a new, fast-growing market. Considering the above, the second question that arises in this study is whether the issuance of restatements increases market confidence in NFD, thereby achieving a decrease in the cost of capital, and what the relationship with assurance quality in this process is. Therefore, the second research question examines whether the effect of assurance quality on the cost of capital is mediated by the issuance of NFD restatements and if there are differences in this relationship based on the type of restatement.

This study explores whether NFD assurance quality enhances capital market confidence in non-financial information by providing greater credibility. While previous studies have focused on examining determinants of restatements, giving a key role to assurance, it was difficult to identify prior contributions that have focused on the consequences of NFD restatement issuance, in particular, on capital markets. Taking as a reference the two aforementioned studies (Ballou et al., 2018; Michelon et al., 2019), restatements are conceived as elements that ensure legitimacy in relation to the demands of shareholders, investors, and other stakeholders. But how the issuance of NFD restatements is perceived by capital markets is a question still to be answered.

In addition, to connect NFD assurance quality and restatements, this study tries to explore if the latter can, at least partially, explain the relationship between assurance quality and market confidence. NFD assurance is still studied mostly as a dichotomous phenomenon. If assurance quality is really associated with a greater chance of issuing restatements, these could be possible mediators of the eventual positive effect of assurance quality on market confidence. Therefore, it should be possible to measure the combined effect of NFD assurance quality (as a means of demonstrating credibility) and restatements (as a means of guaranteeing accuracy) on capital market reactions and, in particular, on the cost of capital. This study highlights how capital markets react to NFD assurance quality and whether this reaction appears to be justified by the employment of restatements. Adopting the

theoretical perspective of the signaling theory and the legitimacy theory, the aim is to understand if companies that invest in NFD assurance quality and employ restatements signal credibility and accuracy, respectively, to the capital market by reducing information asymmetry. It is also questioned if by doing so, they obtain greater legitimacy.

To achieve this, the link between assurance quality, restatements and market confidence is explored, focusing on the cost of capital, and employing Baron and Kenny's three-stage mediation analysis (1986). This process has been extensively used in prior literature to examine the mediating effect (e.g., Veríssimo and Lacerda, 2015; Wang and Sarkis, 2017)⁴. Regression models are employed with 1,580 European firm-year observations of NFD. The findings of this study provide novel and relevant results for NFD assurance literature by supporting, first of all, that capital markets positively react to assurance quality, as a means of providing greater credibility to NFD and ensuring market confidence. Second, this credibility is contingent on the greater accuracy provided by restatements, therefore confirming their mediating effect. This relationship, however, is confirmed only for

⁴ Regarding mediation, Baron and Kenny (1986, p. 1176) describe it as the function that an indicator assumes when 'it accounts for the relationship between the predictor and the criterion'. Basically, a mediator - in this study, NFD restatements - plays two roles in any causal relationship. On the one hand, the mediator is the dependent variable for the independent variable (assurance quality). On the other hand, the mediator is the independent variable for the criterion (the capital market reaction). The model employed in this study is defined partial mediation, because the independent variable includes a direct effect on dependent variable. A full mediation model would occur if the inclusion of the mediation variable drops the relationship between the independent variable and dependent variable to zero. For further details on different mediation models, see Wood et al., 2007.

restatements related to methodological updates, and is not verified for restatements connected to errors and omissions, which instead produce a negative effect on market confidence. Additionally, this research has ethical implications since it investigates a potential misuse of restatements, especially the ones related to error, by NFD assurance providers and more generally, the substantive rather than symbolic verifying role of NFD assurance.

The chapter is structured as follows. The second section is dedicated to the background of the study and the hypotheses proposed. The third and fourth sections illustrate the empirical research, the methodology employed (i.e., data collection, empirical models, etc.) and the results. In the fifth section the results are discussed and analysed. The last section is dedicated to conclusions.

4.2. Theoretical framework and development of hypotheses

4.2.1. NFD assurance quality and the cost of capital

Credibility and informative precision seem to be clearly linked to the practice of assurance, even when it is requested voluntarily, in order to alleviate and resolve the existing lack of confidence in NFD. Because of the risk of greenwashing (Lyon and Maxwell, 2011) and window dressing (Lin, 2010), external users are often sceptical of NFD. To overcome this problem, a growing number of companies are requesting external and independent asseveration on these disclosures (KPMG, 2017) as a means of guaranteeing credibility. Thus, assurance mainly verifies the

accuracy, confidence and reliability of data reported by companies (Hodge et al., 2009; O'Dwyer and Owen, 2005; Simnett et al., 2009) and reinforces stakeholders' confidence in NFD (Pflugrath et al., 2011; Simnett et al., 2009; Mercer, 2004).

The signaling theory and the legitimacy theory are closely connected in studies about assurance of NFD (Alon and Vidovic, 2015; Simoni et al., 2020). Companies engage assurance service providers for their disclosures in order to decrease information asymmetry toward external stakeholders, especially financial markets. In doing so, they achieve greater legitimacy⁵. The purpose of signaling is to acquire information from the market to resolve the extensive information asymmetry present in economic and social areas (Spence, 2002). According to the signaling environment described by Connelly et al. (2011), one party, the sender, must choose whether and how to communicate (or signal) information, and the other party, the receiver, must choose how to interpret the signal, sending feedback to the signaller. In other words, the signaling theory focusses on signals and responses, or a receiver's feedback to the signals. The signaling theory explains the relationship between the sender and receivers of signals, particularly the signals sent and received in the capital market (Yu et al., 2017). Several authors (Cheng et al., 2014; Zhou et al. 2016), have suggested that voluntary assurance of NFD sends

⁵ More specifically, reference is made to "material legitimacy" of NFDs, according to the model of Dumay et al. (2015). Material legitimacy blends what is important to the organisation (strategic legitimacy) with the primary concerns of its major stakeholders (institutional legitimacy). In this perspective "material" issues are the one that companies disclose to achieve mutually beneficial outcomes for themselves and their stakeholders.

a signal to potential investors that management considers such disclosures to be an important aspect of corporate performance. The credibility of this signal plays a crucial role since it influences the usefulness of these disclosures and depends directly on the extent to which the signaller is honest. The signal, therefore, corresponds to the quality of the signaller (Davila et al., 2003).

To analyse this matter from a capital market perspective and in response to the call for research in this regard (Cohen and Simnett, 2015), recent studies have started exploring whether assurance actually enhances the credibility of NFD to the point of increasing market confidence in disclosing companies. For instance, Casey and Grenier (2015) find that the provision of assurance of this kind of disclosures lowers the cost of capital. According to Cuadrado-Ballesteros et al. (2017), NFD reduces information asymmetries to a greater extent when assured, strengthening its value relevance. Similarly, Martínez-Ferrero and García-Sánchez (2017) claim that voluntary NFD decrease the cost of capital to a greater extent when an assurance statement is provided due to the increase in the credibility of the corporate social responsibility information it provides. These contributions are based on the argument that NFD make a company's non-financial performance public for external stakeholders, thereby reducing information asymmetries (Francis et al., 2005) and the agency cost associated with them (Jensen and Meckling, 1976).

The extent to which the quality of assurance contributes to this improvement, however, is still an unexplored aspect. This could be partially linked to the difficulty

of assessing the quality of assurance, given the limitations mentioned above, as well as the multitude of reference standards and a rapidly evolving regulatory environment. Additionally, assessing assurance quality is still subjective and may be affected by the perceived standing of different types of assurance providers (Pflugrath et al., 2011; Maroun, 2018). However, after more than two decades of development in non-financial information reporting, it seems worthy to further investigate the connection between assurance quality and market confidence. In the recent past, when this practice was still in a nascent stage, it was natural to consider NFD assurance dichotomously, simply by evaluating its presence or absence. Considering the many developments that have occurred in terms of standards, dissemination, and the use of NFD and assurance, it seems appropriate not to consider this element exclusively in a dichotomous manner but also in relation to its quality.

Despite the limited number of studies along these lines, according to the signaling theory (Spence, 2002; Watson, 2002), information quality and credibility are determinant in reducing information asymmetries between disclosing companies and external users. Based on this, it seems reasonable to expect financial markets to be positively influenced by the quality of NFD assurance. This is due to the greater reduction in information asymmetries higher assurance quality provides, thereby increasing the credibility of disclosures. This hypothesis needs to be verified because, for financial markets, the presence of assurance itself could be the

factor that increases the credibility of NFD, not its quality. In line with García-Sánchez et al., (2019), it seems reasonable to believe that the provision of higher assurance quality leads to greater market confidence. This practice should be able to reduce information asymmetries in proportion to its quality. Market confidence can be assessed through several measures; among many this research focuses on cost of capital, consistent with other studies (Diamond and Verrecchia, 1991; Cuadrado-Ballesteros et al., 2017), because it is commonly employed investigating the effect of corporate disclosures on financial markets.

Summarising, it is expected higher assurance quality to signal the credibility of NFD, thanks to the greater reduction in information asymmetries it provides. This should lead to an improvement in market confidence which translates into a reduction in the cost of capital, as positive feedback.

Hypothesis 1. *Higher NFD assurance quality decreases the cost of capital by improving market confidence.*

4.2.2. Restatements as mediators of the impact of NFD assurance quality on the cost of capital

In this context, characterised by the uncertainty about information credibility, researchers started to study the issuance of rectifications, or restatements, in NFD and their association with the assurance practice (Ballou et al., 2018, Michelon et al., 2019). A NFD is considered restated if a later disclosure rectifies the data it

contains due to error/omission or improvements to definition, scope, or calculation methodologies. Both studies find a higher probability of a NFD to contain restatements if it is externally assured. However, the reaction of capital markets to the issuance of NFD restatements is still little explored. Therefore, it seems worth studying whether the issuance of restatements, as a means to providing greater accuracy, increases market confidence in non-financial information. Does this practice decrease the cost of capital? How this produces any effect on the relationship between assurance quality and market confidence? Answering these questions could also explain, at least partially, what is argued as first hypothesis.

According to Ballou et al. (2018) and KPMG (2011), restatements are considered "good" and represent an advance in the accuracy and quality of NFD. They are a part of what is considered a maturation process, demonstrating, once again, a significant step forward in terms of the evolution characterising this reporting practice (Tschopp and Huefner, 2015). Financial reporting rectifications may be perceived as a demonstration of lack of ability or fraudulent intent by the disclosing company, while, for the reporting of NFD, still in a relatively "nascent" stage, correction, revision, and frequent updates to methodology are better tolerated. It is worth mentioning, however, that frequent use of restatements, prolonged over time, may reduce confidence in a company's disclosing practices (KPMG, 2011). Therefore, the positive perception of NFD restatements, especially

connected to error and omissions, will probably reduce over the course of time, as this kind of reporting reaches a greater level of maturity.

Ballou et al. (2018) claim that assurance leads to greater incidence of both error and update restatements. In this regard, restatements improve the accuracy of NFD by identifying and correcting errors but also when there are updates to definitions, scope and calculation methodologies, making issuing a restatement necessary to ensure the comparability of data. The greater accuracy of the data could partially make up for the difficulty in interpreting, evaluating and comparing NFD (Cohen et al., 2011; Deegan et al., 2006; Perego and Kolk, 2012). This difficulty is determined by heterogeneity of reporting standards (Boiral and Gendron, 2011; Collison and Slomp, 2000) and equivocal assurance guidelines (Moroney and Trotman, 2016). From this perspective, restatements which increase the accuracy of NFD could reduce information asymmetries and improve assurance quality.

Michelon et al. (2019) assert that the use of restatements may be employed inappropriately, becoming an instrument to legitimise NFD and its assurance. In their study, the positive association between NFD assurance and restatements is stronger for error as opposed to methodological updates, and more specifically, with quantitatively non-material restatements. The heterogeneous principles for NFD reporting and assurance allow assurance providers to “socially transform restatements into a representative solution to the problem associated with the

quality of CSR reporting. As such, they create legitimacy and demand for their services” (Michelon et al., 2019, p. 24).

In summary, although the two studies agree on recognising the tendency of assurance providers to resort to restatements, it is not clear to what extent this has had a positive effect in terms of improving the accuracy of NFD and in what measure it is a practice captured by assurance providers to legitimise their profession (O’Dwyer, 2003). To contribute to this dialogue and to better understand the effects of NFD assurance quality on external users, this research analyses the effects of restatements on market confidence through the cost of capital.

In accordance with the signaling theory, if the issuance of restatements signals the accuracy of NFD, it is expected that this will be positively assessed by capital markets, increasing investors’ confidence in the information disclosed and, therefore, decreasing the cost of capital required for their investments. More specifically, understanding to what extent restatements are an effective legitimacy-building strategy employed by assurance providers requires further study (Michelon et al., 2019; O’Dwyer et al., 2011) and whether they actually contribute to increasing NFD reporting and assurance credibility by providing greater accuracy. Furthermore, if in agreement with the two above-mentioned studies (Ballou et al., 2018; Michelon et al. 2019), assurance is positively associated with the issuance of restatements, it seems interesting to understand whether this effect is related to the quality of the assurance, verifying whether restatements are

mediators (Baron and Kenny, 1986) in the relationship between NFD assurance quality and market confidence. From the above, can the issuance of restatements explain, at least partially, the positive effect of assurance quality on market confidence?

Hypothesis 2. *The effect of NFD assurance quality on reducing the cost of capital is mediated by the issuance of restatements.*

Given the different kinds of restatements, the second hypothesis has been further developed to gain understanding about whether these different types of restatements send different signals to investors. According to Ballou et al. (2018) and Michelon et al. (2019), it is possible to distinguish two kinds of NFD restatements. The first one represents the correction of errors and integration of omissions from previously disclosed information, referred to as “error restatements”. The second kind is related to updates in calculation methodology, definitions applied, scope and more generally, advancements in reporting techniques that update previously disclosed data for reasons of accuracy and comparability with more recent disclosures. These are referred to as “update restatements”.

The two types of restatements serve different informative purposes. Update restatements may be perceived more positively in NFD reporting since they can be used to improve data comparability, accuracy, and reporting methodologies. Error

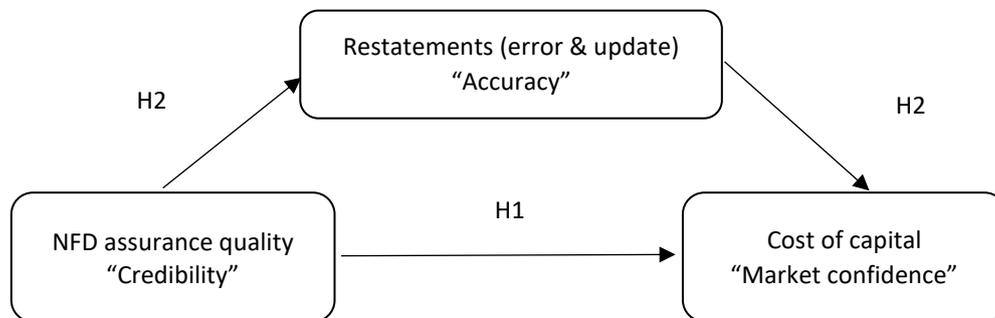
restatements may be positively considered because this reporting practice is in its early stages of development. However, error restatements are usually perceived in a negative way in accounting, especially for financial reporting. As KPMG (2011, p. 27) notes, “in the long-run, however, restatements, errors and omissions in CSR reporting will begin to erode investor confidence in not only the data presented, but potentially also the quality of the wider governance structure and internal controls within”. Because of this, the integration of the differences between these types of restatement in the empirical model could be useful to understand the level of maturity of NFD reporting and its assurance and to better comprehend the relationship between assurance quality, restatements, and the cost of capital. If this practice is still developing, as many of the previously mentioned authors claim, it seems coherent to expect no differences in market reactions due to restatement type. In this case, both error and update restatements would signal accuracy to investors and play a mediating role in the relationship between NFD assurance quality and the cost of capital. Do the types of restatements show any differences as mediators of the effect of assurance quality on market confidence?

Hypothesis 2a. *The effect of NFD assurance quality on reducing the cost of capital is mediated by the issuance of restatements related to error.*

Hypothesis 2b. *The effect of NFD assurance quality on reducing the cost of capital is mediated by the issuance of restatements related to updates.*

Overall, Figure 4.1 provides a graphic perspective of the objectives. The aim is to investigate whether the influence of NFD assurance quality on the cost of capital appears mediated by the issuance of restatements.

Figure 4.1. The mediating effect of restatements on the relationship between NFD assurance quality and market confidence



4.3. Method

4.3.1. Sample and data

The initial sample originates from economic and financial information collected from Thomson Reuters Eikon for the period of 2012-2018. The sample was restricted to publicly held companies in Europe. After removing duplicate observations (companies on more than one index), obtained 12,061 firm-year observations were obtained (1,723 different firms for the 7-year period).

In the second stage, it was added non-financial disclosures and assurance data contained in the General Reporting Initiative (GRI) database⁶, as most sources in prior literature have done (e.g., Fuhrmann et al., 2017; Boiral and Heras-Saizarbitoria, 2019; Ruiz-Barbadillo and Martínez-Ferrero, 2020). The GRI database provides information about NFD like the type of report (whether GRI reports are NFD/integrated reports based on the GRI Standards or reports that do not satisfy the database requirements of the GRI-Standards report type), adherence to the GRI guidelines (the extent to which the GRI Sustainability Reporting Framework and GRI Standards have been applied to a report), whether or not companies assure the above disclosures, information about the assurance process (level, standard, scope, etc.) and so on. To the date of the research data from the GRI were only available until financial year 2016 (NFD published in 2017). At this stage, data collected from Thomson Reuters Eikon and from the GRI were merged, obtaining a sample composed of 1,805 firm-year observations from 2012 to 2016. It must be highlighted that the sample examined refers to a period when assurance of NFD was still voluntary in Europe. The Directive 2014/95/EU on non-financial information was not adopted in most countries before 2017.

Each observation belongs to a NFD published by firms in the 5-year period from 2012 to 2016. In the third stage, having information from the GRI database,

⁶ In recent years, the GRI has been accepted as a framework for the design and preparation of NFD at an international level, such as Fuhrmann et al. (2017) declare. In this regard, the GRI plays a role very similar to that of accounting principles for financial auditing. Peter and Romi (2014) advocate the use of the GRI as a manifestation of more comprehensive reporting in NFD issues.

data from the 1,805 firm-year observations was hand-collected about whether or not the NFD contained restatements of a previously issued disclosure. In this stage, it was collected information about NFD restatements by hand-revising each disclosure of the sample. Following the above referenced papers, the search was performed employing the following words: “restat”, “error”, “correct”, “update”, “revis”, “adjust”, “amend”, “figure”, “previous”. According to Ballou et al. (2018) and Michelin et al. (2019), restatements for M&A, divestiture and similar reasons have not been considered. Moreover, the same restatement in multiple reports has been considered only once (i.e., same restated 2011 numbers presented in 2013 and 2014 disclosures).

After the above-referenced hand-collection process, firm-year observations with disclosures not available (185 out of 1,805) and database mismatches (40 out of 1,805) were excluded. The final sample is made of 1,580 firm-year observations belonging to 353 firms for the period of 2012-2016. The procedure is summarised in Table 4.1.

Table 4.1. Sample selection

	Obs.
Initial sample of firm-year observations <i>Thomson Reuters Eikon & GRI databases</i>	1,805
<hr/>	
<i>Minus:</i>	
Disclosure not available	185
Database mismatch	40
<hr/>	
Total firm-year observations available (reports analysed)	1,58
Single firm observations	353
<hr/>	

Sample distribution is represented in Table 4.2. It seems consistent over time (Panel A). However, from the 20 countries analysed, it must be highlighted that the United Kingdom (253 observations out of 1,580; 16.01 percent), followed by Sweden (202 observations out of 1,580; 12.78% percent), are the most representative countries of the sample. Finally, the top three industries with more representation in the sample are industrials (355 observations out of 1,580; 22.54 percent), financials (214 observations out of 1,580; 13.59 percent) and consumer discretionary (162 observations out of 1,580; 10.29 percent).

4.3.2. Measurement of variables

As a dependent variable, a market confidence proxy is employed. Following the recommendation of Botosan and Plumlee (2005), the cost of capital is measured using the price–earnings–growth (PEG) proposed by Easton (2004), a model widely employed in previous research (e.g., El Ghouli et al., 2011). “**PEG_Ratio**” is calculated by relating the expected earnings per share in $t=1$ “ eps_1 ”, the expected dividend per share in $t=1$ “ dps_1 ”, the current price per share in $t=0$ “ p_0 ” and the

variation of earnings per share in $t=2$, with respect to $t=1$ "g₂" as $(\text{eps}_2 - \text{eps}_1)/\text{eps}_1$. This model requires that the dividends per share be equal to zero because "g₂" is not reliant on the dividend strategy. As follows:

$$\text{PEG_Ratio} = \sqrt{\frac{\text{eps}_1}{P_0} \times g_2}$$

As an independent variable, despite of the lack of an observable indicator, some of the scarce literature that has previously examined NFD assurance quality has evaluated it through a content analysis of the assurance statement (Ruiz-Barbadillo and Martínez-Ferrero, 2020). Prior literature advocated focusing on assurance statements as final output under the premise of Perego (2009), who claimed that assurance statements are characterised by a lack of homogeneity in terms of format, standards, levels, criteria. Nonetheless, Larrinaga et al. (2020) have recently demonstrated the convergence of sustainability assurance practices into norms and how the institutionalisation of sustainability assurance is coupled with more homogeneous sustainability reporting practices.

In this regard, previous studies took as a reference the measure that, initially, O'Dywer and Owen (2005) and later, Perego and Kolk (2012), developed. Following their perspective, the score "**Assurance_Quality**" is based on the criteria indicated in Table 4.3, with a range of 0-23, following Martínez-Ferrero et al.

(2018) and Ruiz-Barbadillo and Martínez-Ferrero (2020)⁷. The coding process and the methodology adopted for the content analysis are the same illustrated in the two mentioned studies.

The items that make up said score, as well as the criteria and its coding rules, depend on assurance characteristics. These items set a minimum standard for statement quality (Perego & Kolk, 2012) and define assurance procedures, a reporting format, opinions, and recommendations. It should be also noted that this score represents assurance quality because it is evaluated under the minimum requirements that assurance standards, such as ISAE3000, AA1000A5 and the GRI, prescribe. In this respect, Perego and Kolk (2012) argue that the rigor and quality of the assurance engagement is reflected by the extent to which the assurance provider follows different assurance standards.

Regarding the mediating variable and in line with previous studies, a dichotomous variable is employed for the disclosure of restatements/rectifications in NFD (Ballou et al., 2018; Michelon et al., 2019). In this regard, the variable “**NFD_Restatement**” codes as 1 if the report contains changes to previous disclosures for one of the following reasons: (i) error or omission (error); (ii) updates to calculation methodology (without error); (iii) updates to definitions applied (without error); (iv) updates to scope (without error); and, (v) some

⁷ Other models for the measurement of assurance quality are offered by the literature (Perego and Kolk, 2012; Zorio et al., 2013; Seguí-Mas et al., 2015). The one developed by Martínez-Ferrero et al. (2018) has been selected because the index is built on the elements considered most relevant for the present study. Refer to Chapter 3 to consult the other models in detail.

unspecified reason (without error). It is coded as 0 if the report is without restatements.

In order to analyse the difference between each type of restatement, the mediating variable “**NFD_Restatement**” is replaced by two indicators associated with the type of restatement. Following Ballou et al. (2018), the variable “**NFD_Restatement**” is broken down into two new dummy variables. The first indicator is “**Error_Restatement**”, which codes as 1 if the NFD contains changes to previous disclosures for error or omission (error) and 0 otherwise. The second one is “**Update_Restatement**”, which codes as 1 if the NFD contains changes to previous disclosures for updates to calculation methodology, definitions applied, scope or some unspecified reason (all changes without error) and 0 otherwise.

In order to avoid biased results, control variables were included according to each dependent variable, following previous studies (Ballou et al., 2018; El Ghouli et al., 2011; Martínez-Ferrero et al., 2018, Michelon et al., 2019; Simnett et al., 2009). As follows: “**Size**” is the natural logarithm of total sales; “**Leverage**” is the ratio of total debt to total equity; “**Financial_Res**” is the ratio of cashflow to revenues; “**GRI**” is a dichotomous indicator that codes as one in the case of GRI guideline adoption and zero otherwise; and “**Number_Restatements**” is the number of restatements in each NFD. Finally, year, country and industry are controlled by dummy variables.

Table 4.2. Sample characteristics

Panel A. Sample by year	Obs.	Freq.
2012	307	19.43
2013	328	20.76
2014	323	20.44
2015	305	19.3
2016	317	20.06
Panel B. Sample by country		
Austria	31	1.96
Belgium	43	2.72
Czech Republic	5	0.32
Denmark	81	5.13
Finland	147	9.3
France	144	9.11
Germany	127	8.04
Greece	39	2.47
Hungary	9	0.57
Ireland	18	1.14
Italy	103	6.52
Luxembourg	8	0.51
Netherlands	81	5.13
Norway	15	0.95
Poland	29	1.84
Portugal	26	1.65
Spain	112	7.09
Sweden	202	12.78
Switzerland	107	6.77
United Kingdom	253	16.01
Panel C. Sample by industry		
Communication Services	118	7.49
Consumer Discretionary	162	10.29
Consumer Staples	127	8.06
Energy	88	5.59
Financials	214	13.59
Health Care	72	4.57
Industrials	355	22.54
Information Technology	73	4.63
Materials	151	9.59
Real Estate	90	5.71
Utilities	125	7.94
Other	5	0.32
Total	1,580	100

Table 4.3. NFD assurance quality index

Ranking criteria	Definition	Scale (total 23 points)
1 <i>Addressee</i>	Party to whom the assurance statement is formally addressed (either in title, separate addressee line or within text)	0 No reference 1 Addressee is internal or “the readers”. Stakeholder mentioned in the addressee 2
2 <i>Responsibilities of assurator</i>	Explicit statement that the reporter is responsible to express an (independent) opinion on the subject matter (the sustainability/environmental/social report)	0 No reference 1 Reference
3 <i>Independence of assurator</i>	Statement expressing the independence of the parties involved	0 No reference 1 Reference or mere statement expressing that Independence. 2 Compliance with independent and IFAC, IESBA code of ethics
4 <i>Objective of the assurance engagement</i>	Objective to be achieved through the engagement (indicating the level of assurance intended)	0 No reference 1 Review, limited assurance, independent opinion, independent assurance, external verification, external assurance or validation 2 Reasonable assurance or reasonable and limited assurance (e.g., two different levels of assurance for different parts of the report)
5 <i>Scope of the assurance engagement</i>	Assurance statement coverage	0 No reference 1 Reference to GHGE section 2 Reference to multiple section 3 Reference to entire report
6 <i>Criteria used to assess evidence and reach conclusion</i>	A statement that refers to particular criteria against which the sustainability report has been prepared (e.g., GRI and often internally developed standards)	0 No reference 1 Reference to publicly unavailable criteria 2 Reference to publicly available criteria (e.g., internally developed criteria that are published anywhere in the report or GRI)
7 <i>Assurance standard used</i>	Standards used which govern the work of the assurance provider (e.g., AA1000AS, IAE3000)	0 No reference 1 Reference to publicly unavailable criteria 2 3 Reference to publicly available local criteria Reference to AA1000AS, IAE3000
8 <i>Summary of work performed</i>	Statement explaining the actions taken to arrive at a conclusion	0 No reference 1 Reference

Ranking criteria	Definition	Scale (total 23 points)	
9 <i>Materiality (from a stakeholder's perspective)</i>	Degree of information provision on materiality level (when the conclusion states that the report is in conformance with the AA1000AS principles -materiality, completeness, and responsiveness- this qualifies for a reference, and thus a 1 was assigned)	0	No reference
		1	Reference limited to a broad statement (e.g., "covers all material aspects" or "...in all material respects...") but also negative claiming that assurator has not undertaken any work to confirm that all relevant/material issues are included.
		2	Reference and explanation of materiality setting, or reference limited to a broad statement and stakeholder perspective introduced (e.g., "issues material to stakeholders have been considered")
		3	Reference, explanation of materiality setting, and stakeholder perspective introduced
10 <i>Completeness</i>	Statement expressing that all material aspects are covered by the report (when the conclusion states that the report is in conformance with the AA1000AS principles of materiality, completeness, and responsiveness this qualifies for a reference and thus, a 1 will be assigned)	0	No reference
		1	Reference
11 <i>Responsiveness to stakeholder</i>	Statement referring to the organisation's procedures (or lack of them) for identifying stakeholder interests and concerns	0	No reference
		1	Reference
12 <i>General conclusion/opinion</i>	Statement expressing the result of the assurance exercise (if there is no general conclusion, but the conclusion solely refers to the 3 principles of AA1000AS of materiality, completeness, and responsiveness, a 0 was assigned)	0	No reference
		1	Mere statement expressing the opinion of the assurator (e.g., "XY's report is a fair presentation of XY's non-financial performance"). 1 should be assigned only if the conclusion consists only of one sentence.
		2	Explanatory statement (more than one sentence, included recommendations for improvement if proceed)

Source: Martínez-Ferrero et al. (2018)

4.3.3. Empirical models

To test the research hypotheses, the study employs dependence techniques for panel data with the objective of ensuring the consistency and explanatory capacity of the proposed regression models. Regarding the technique of analysis, the nature of the dependent variable needs to be considered. For dummy variables – NFD restatements – coding as 1 and 0, Logit models seemed the appropriate choice because it ensures efficient and consistent coefficients. For numerical indicators – cost of capital or its robust measure — the choice fell on the dynamic panel, generalised method of moments (GMM), by Arellano and Bond (1991), in particular the two-step estimator proposed by Roodman (2009).

To test capital market reactions to NFD assurance quality and the restatement issuance mediating effect with the distinction between error and update restatements, Baron and Kenny's (1986) process in three stages was adopted. These authors propose that the mediator variable (restatements⁸) is regressed on the independent variable (NFD assurance quality) in the first stage:

⁸ In order to explore how each type of restatement can mediate the effect on the cost of capital of higher assurance quality, the test of hypotheses 2a and 2b examines Models 1 to 3 by replacing the mediating variable “NFD_Restatement” with “Error_Restatement” and “Update_Restatement”.

$$\begin{aligned}
& \text{NFD_Restatement}_{it} \\
& = \beta_1 \text{Assurance_Quality}_{it} + \beta_2 \text{Size}_{it} + \beta_3 \text{Leverage}_{it} \\
& + \beta_4 \text{Financial_Res}_{it} + \beta_5 \text{GRI}_{it} + \beta_6 \text{Year}_t + \beta_7 \text{Country}_i \\
& + \beta_8 \text{Industry}_i + \eta_i + \mu_{it}
\end{aligned}$$

In the second stage, the dependent variable (cost of capital) is regressed on the independent variable (NFD assurance quality):

$$\begin{aligned}
\text{PEG_Ratio}_{it} & = \alpha_1 \text{Assurance_Quality}_{it} + \alpha_2 \text{Size}_{it} + \alpha_3 \text{Leverage}_{it} \\
& + \alpha_4 \text{Financial_Res}_{it} + \alpha_5 \text{GRI}_{it} + \alpha_6 \text{Number_Restatements}_{it} \\
& + \beta_7 \text{Year}_t + \beta_8 \text{Country}_i + \beta_9 \text{Industry}_i + \eta_i + \mu_{it}
\end{aligned}$$

In the third and final stage, the cost of capital indicator is again regressed on both the independent and mediator measures:

$$\begin{aligned}
\text{PEG_Ratio}_{it} & = \delta_1 \text{Assurance_Quality}_{it} + \delta_2 \text{NFD_Restatement}_{it} + \delta_3 \text{Size}_{it} \\
& + \delta_4 \text{Leverage}_{it} + \delta_5 \text{Financial_Res}_{it} + \delta_6 \text{GRI}_{it} \\
& + \delta_7 \text{Number_Restatements}_{it} + \delta_8 \text{Year}_t + \delta_9 \text{Country}_i \\
& + \beta_{10} \text{Industry}_i + \eta_i + \mu_{it}
\end{aligned}$$

It must be noted that in this third step, Baron and Kenny (1986, p. 1177) require that “*the effect of the independent variable on the dependent variable must be less in the third step than in the second step*” to support mediation. That is, δ_1

should be lower than α_1 to support the mediating effect of restatement issuance and therefore confirm the joint influence of the credibility and accuracy of NFD on the decrease in the cost of capital.

4.4. Results

4.4.1. Descriptive results

Distribution of restatements and their characteristics are illustrated in Table 4.4. Panel A shows that out of 1,580 firm-year observations, 422 NFD contain a restatement; that is, 26.71 percent. From Panel B, moreover, out of the 422 restated disclosures, 149 include corrections of errors (35.31 percent), 258 involve updates/improvements to estimation/calculation methodology, definitions or scope (61.14 percent); 14 both error and update restatements (3.32 percent); a single case out of the 422 has restated for an unspecified reason (0.23 percent). These values are certainly similar to the distribution reported by Ballou et al. (2018), who documented the clear dominance of restatements linked to updates. In Panel C, referring to the number of restatements by report, out of the 422 NFD containing restatements, the majority presents a single one (377 out of 422, 89.34 percent). This data contrasts with reports containing 2 restatements (44 out of 422, 10.43 percent) and with 3 or more restatements (1 out of 422, 0.23 percent). Finally, Panel D reports the distribution according to the type of data. 287 out of 422 firm-year observations involve restatements about environmental information (68.01

percent); 95 of them involve restatements about social aspects, including employment data (22.51 percent); 2 of them about governance data (0.47 percent); and 38 of them involve restatements about different data (environmental, social and governance) representing 9.00 percent.

Table 4.4. Distribution and characteristics of NFD restatements

Panel A. Distribution		
	Obs.	Freq.
Non-NFD Restatement	1,158	73.29
NFD Restatement	422	26.71
Total	1,580	100
Panel B. Type of restatement		
Error-correction	149	35.31
Update (methodology, scope, definition)	258	61.14
Error and update	14	3.32
Unspecified	1	0.23
Total	422	100
Panel C. Number of restatements by disclosure		
1 restatement	377	89.34
2 restatements	44	10.43
3+ restatements	1	0.23
Total	422	100
Panel D. Type of data restatement		
Environmental	287	68.01
Social (including employment)	95	22.51
Governance	2	0.47
Combination	38	9.00
Total	422	100

Descriptive statistics are reported in Table 4.5. This table also reports univariate descriptions between the non-restatement (“**NFD_Restatement**” = 0) and restatement (“**NFD_Restatement**” = 1) groups and the mean difference tests. Regarding the cost of capital, “**PEG_Ratio**” shows a mean value of around 2.8 percent, a value that decreases towards 0.8 percent for those firm-year observations with a restatement. The above provides primary evidence of how capital markets react to the publishing of NFD restatements. The assurance quality indicator reports a low mean value of 8.147. Comparing the two groups (non-restatement vs. restatement), 7.585 vs. 9.689, there is clearly higher assurance quality in the subsample with restatements. A positive connection between restatements and assurance quality is therefore probable. As control variables, for example, 71.59 percent of reports without restatements follow the GRI guidelines, a percentage that increases towards 76.78 when those disclosures contain any type of restatement. From the results of the difference of means test for each indicator, according to a null hypothesis of equal means, significant variances are found between two groups in terms of assurance quality and adoption of GRI guidelines. These results offer initial insights into the proposed research questions.

Table 4.6 reports bivariate correlations analysis and provides a first evidence that assurance quality and cost of capital are inversely related. Verifying the variance inflation factor (VIF) of the different variables no concern for multicollinearity emerged.

Table 4.5. Descriptive statistics

	<i>Full Sample</i>		<i>Non-Restatements</i>		<i>Restatements</i>		<i>Difference mean test</i>
	Mean	Std.Dev.	Mean	Std.Dev.	Mean	Std.Dev.	<i>diff = mean(0) - mean(1)</i>
PEG_Ratio	0.028	0.446	0.036	0.315	0.008	0.674	0.027
Assurance_Quality	8.147	6.740	7.585	6.653	9.689	6.746	-2.104***
Size	22.987	2.155	22.914	2.148	23.189	2.163	-0.275**
Leverage	1.387	6.059	1.457	5.369	1.194	7.635	0.263
Financial_Res	0.166	0.744	0.181	0.849	0.129	0.338	0.053
Number_Restatements	0.296	0.517	-	-	1.109	0.319	-1.109***
	Obs.	Freq.	Obs.	Freq.	Obs.	Freq.	
GRI	1.153	72.97	829	71.59	324	76.78	-0.052**

Sample: 1,580 firm-year observations (353 unique firms) from 2012-2016

Table 4.6. Correlation matrix

		1	2	3	4	5	6	7	8	9	10
1	PEG_Ratio	1									
2	Assurance_Quality	-0.0461	1								
3	NFD_Restatement	-0.0276	0.138***	1							
4	Update_Restatement	-0.0424	0.135***	0.755***	1						
5	Error_Restatement	0.0143	0.039*	0.561***	-0.077**	1					
6	Size	0.0100	0.300***	0.056*	0.060*	0.0045	1				
7	Leverage	0.0058	0.008**	-0.0192	-0.0174	-0.0036	0.129***	1			
8	Financial_Res	-0.0149	-0.0797	-0.0316	-0.0170	-0.0282	-0.177***	0.073*	1		
9	GRI	0.0448	0.533***	0.051*	0.0472	0.0096	0.120***	-0.0073	0.0275	1	
10	Number_Restatements	-0.0248	0.157***	0.947***	0.743***	0.549***	0.053*	-0.0207	-0.0331	0.061*	1

Sample: 1,580 firm-year observations (353 unique firms) from 2012 to 2016

*, ** and *** represent significance level of 95%, 99% and 99.9%, respectively

4.4.2. Multivariate analysis

Table 4.7 presents the results of estimating the three regression models following Baron and Kenny's (1986) procedure and provide evidence about the capital market valuation of NFD assurance quality and the mediating effect of restatements (error and update). Does the impact of higher assurance quality on the cost of capital depend on the issuance of restatements?

Results of Model 1 clearly confirm the positive and significant association between assurance quality and the reporting of restatements ($\beta_1=0.061$ $p<0.01$). That is, a higher quality of NFD assurance means a greater incidence of disclosing restatements of previously disclosed information. Findings support the positive relationship between credibility (NFD assurance quality) and accuracy (restatements).

Regarding assurance quality as a determinant of the cost of capital, the results of Model 2 allow us to support hypothesis 1 by reporting the negative and significant effect of the higher quality of the assurance process on the cost of capital required by investors ($\alpha_1=-0.355$, $p<0.01$). As was proposed in hypothesis 1, higher assurance quality decreases the cost of capital by enhancing market confidence. These findings support the thesis that NFD assurance statements with higher information quality increase reporting credibility and are positively assessed by capital markets, leading investors to demand a lower cost of capital.

The last stage of the mediation analysis implies the combined test of the impact of the mediator indicator “**NFD_Restatements**” (Model 3) and the independent variable “**Assurance_Quality**” on the cost of capital “**PEG_Ratio**”. As Baron and Kenny (1986) stipulate, the mediation effect of the reporting of restatements requires: (i) that the coefficient of the mediating variable be statistically significant; and (ii) “*the effect of the independent variable on the dependent variable must be lower in the third step than in the second step*” (Baron and Kenny, 1986, p. 1177). The results clearly meet these two requirements. First, there is a negative and significant impact on the cost of capital as a result of restatement issuance ($\delta_2 = -0.179$, $p < 0.01$). Results meet the requisite of mediator variable significance. Second, the higher quality of NFD assurance is again positively assessed by capital markets by showing a negative and significant result on the cost of capital ($\delta_1 = -0.318$, $p < 0.01$). It must be noted that this effect is lower than in Model 2 ($\delta_1 = -0.318$ vs. $\alpha_1 = -0.355$). Thus, results support hypothesis 2, confirming the mediation effect of restatement issuance on the relationship between NFD assurance quality and cost of capital. Providing an initial explanation of these results, the negative impact of assurance quality, as a means of providing credibility, on the cost of capital appears to be explained by the reporting of restatements, as a means of providing accuracy.

Table 4.7. Capital market reactions to higher NFD assurance quality. The mediating effect of restatement issuance on the relationship between NFD assurance quality and the cost of capital

	<i>NFD_Restatement</i>		<i>PEG_Ratio</i>		<i>PEG_Ratio</i>	
	Coef.	Std. Error	Coef.	Std. Error	Coef.	Std. Error
<i>Main variables: independent and mediating</i>						
Assurance_Quality	0.061***	0.011	-0.355***	0.064	-0.318***	0.043
NFD_Restatement					-0.179***	0.901
<i>Control variables</i>						
Size	-0.031	0.143	-5.388***	0.460	-6.924***	0.290
Leverage	-0.037**	0.015	0.104***	0.009	0.194***	0.008
Financial_Res	0.149	0.938	4.569***	2.694	5.181***	1.776
GRI	-1.365	1.317	0.617	0.396	1.192***	0.303
Number_Restatements			-6.989***	0.656	4.640***	0.423
Year, Country and Industry effects	Controlled		Controlled		Controlled	
	Wald chi2		Wald chi2		Wald chi2	
	Prob > chi2 = 0.0000		Prob > chi2 = 0.0000		Prob > chi2 = 0.0000	
Sample: 1,580 firm-year observations (353 unique firms) from 2012-2016						

In addition, the study proposed in hypotheses 2a and 2b that the mediating effect of restatements can be contingent on the type of restatement: error vs. update. In order to explore how each type of restatement can mediate the effect on the cost of capital of higher assurance quality, the third analysis examines Models 1 to 3 by replacing the mediating variable “**NFD_Restatement**” with two new indicators associated with restatement type.

In Table 4.8a and Table 4.8b, the outcomes of this comparison provide differing results on how capital markets react to the reporting of restatements associated with error or update. Panel A reports the main results for error restatements while Panel B shows the results for update restatements.

Regarding error restatements, the results of Model 1 clearly confirm the positive and significant association between assurance quality and the restatement of previously disclosed information ($\beta_1=0.077$ $p<0.05$). Regarding NFD assurance quality as a determinant of the cost of capital, the results of Model 2 allow to support hypothesis 1 with a negative and significant consequence of higher assurance quality on the cost of capital required by investors ($\alpha_1=-0.355$, $p<0.01$). Regarding Model 3, results must meet the two requirements to recognise the mediating effect. However, here, evidence does not meet any of the two requirements. While the first requirement – the significance of the mediating variable — is met (coef. $\delta_2=0.061$, $p<0.01$) the second one is not. In fact, the impact of assurance quality on the cost of capital is negative and significant ($\delta_1=-0.589$, $p<0.01$) but this value is not lower

than in Model 2 ($\delta_1=-0.589$ vs. $\alpha_1=-0.355$). Therefore, sub-hypothesis 2a is rejected. The mediating effect of restatements on the lower cost of capital caused by higher assurance quality does not hold up when restatement reporting is due to errors/omissions., as sub-hypothesis 2a proposed. Moreover, in addition to not complying with the mediation, the results show that the capital market does not positively value error-motivated issuance of restatement, by increasing the cost of capital required to disclosing companies.

Focusing on the update restatements, the results of Model 1 clearly confirm a positive and significant association between NFD assurance quality and the reporting of restatements associated with update issues ($\beta_1=0.093$ $p<0.01$). Regarding assurance quality as a determinant of the cost of capital, the results of Model 2 report the negative and significant consequence of higher assurance quality on the cost of capital required by investors ($\alpha_1=-0.355$, $p<0.01$). In contrast to error restatements, the results of Model 3 meet the two requirements of the mediation analysis so supporting sub-hypothesis 2b. First, there is a negative and significant impact on the cost of capital as a result of the issuance of update restatements ($\delta_2=-0.088$, $p<0.01$). Second, higher assurance quality is again positively assessed by capital markets by showing a negative and significant result on the cost of capital ($\delta_1=-0.196$, $p<0.01$), with a lower effect than in Model 2 ($\delta_1=-0.196$ vs. $\alpha_1=-0.355$). The positive assessment that higher assurance quality achieves from capital markets is contingent on restatement issuance due to updates.

Table 4.8a. Capital market reactions to higher NFD assurance quality. The mediating effect of restatement issuance on the relationship between assurance quality and the cost of capital: error restatements

Panel A. Error restatements						
	<i>Error_Restatement</i>		<i>PEG_Ratio</i>		<i>PEG_Ratio</i>	
	Coef.	Std. Error	Coef.	Std. Error	Coef.	Std. Error
<i>Main variables: independent and mediating</i>						
Assurance_Quality	0.077**	0.036	-0.355***	0.064	-0.589***	0.041
Error_Restatement					0.061***	0.428
<i>Control variables</i>						
Size	-0.235***	0.036	-5.388***	0.460	-7.354***	0.358
Leverage	-0.023	0.039	0.04***	0.009	0.159***	0.007
Financial_Res	0.439	0.509	4.569***	2.695	5.265***	1.717
GRI	-0.821	0.859	0.617	0.396	0.590*	0.305
Number_Restatements			-6.989***	0.655	-9.910***	0.486
Year, Country and Industry effects	Controlled		Controlled		Controlled	
	Wald chi2		Wald chi2		Wald chi2	
	Prob > chi2 = 0.0000		Prob > chi2 = 0.0000		Prob > chi2 = 0.0000	
Sample: 1,580 firm-year observations (353 unique firms) from 2012-2016						

Table 4.8b. Capital market reactions to higher NFD assurance quality. The mediating effect of restatement issuance on the relationship between assurance quality and the cost of capital: update restatements

Panel B. Updated restatements						
	<i>Update_Restatement</i>		<i>PEG_Ratio</i>		<i>PEG_Ratio</i>	
	Coef.	Std. Error	Coef.	Std. Error	Coef.	Std. Error
<i>Main variables: independent and mediating</i>						
Assurance_Quality	0.093***	0.031	-0.355***	0.064	-0.196***	0.032
Update_Restatement					-0.088***	0.266
<i>Control variables</i>						
Size	-0.201***	0.029	-5.388***	0.460	-6.831***	0.334
Leverage	0.019	0.019	0.04***	0.009	0.153***	0.007
Financial_Res	-1.032**	0.454	4.569***	2.695	4.965***	1.546
GRI	0.067	0.257	0.617	0.396	0.225	0.351
Number_Restatements			-6.989***	0.655	-3.572***	0.389
Year, Country and Industry effects	Controlled		Controlled		Controlled	
	Wald chi2		Wald chi2		Wald chi2	
	Prob > chi2 = 0.0000		Prob > chi2 = 0.0000		Prob > chi2 = 0.0000	
Sample: 1,580 firm-year observations (353 unique firms) from 2012-2016						

Overall, the results support the positive effect of higher NFD assurance quality on market confidence demonstrated by a lower cost of capital. Additionally, the main finding is that this decrease in cost of capital is contingent on restatement issuance, only when associated with updates. In other words, the reduction in the cost of capital brought by NFD assurance quality appears to be determined by the issuance of update restatements. On the contrary capital markets negatively react to the issuance of error restatements.

4.4.3. Further analysis

This study examines capital market reactions to NFD with higher assurance quality and the mediating effect of restatements by focusing on the cost of capital. In order to ensure the robustness and sensitivity of the findings, a sensitivity analysis of the sample and the dependent variable is provided for the main analysis proposed in hypotheses 1 and 2⁹.

The study also examines how capital markets react to the credibility and accuracy of non-financial information centring on firm market valuation. “**TobinQ**” captures the corporate performance represented by the “*ratio of the sum of the firm equity value, book value of long-term debt, and net current liabilities divided by the book value of inventories and property, plant and equipment*” (Surroca et al., 2010). The use of this indicator allows to capture the external

⁹ Further analyses were also examined by considering NFD restatement type, obtaining robust evidence and no difference with respect to the previous results.

responses to organisational actions like those related to NFD (Chiu and Sharfman, 2011).

To provide further evidence, Models 1 to 3 are again regressed by replacing the “**PEG_Ratio**” with “**TobinQ**”. Table 4.9 offers the outcomes of the regression analyses, which are highly similar to those previously described in Table 4.7. On the one hand, the results of Model 1 are the same and confirm the positive and significant association between NFD assurance quality and the reporting of restatements ($\beta_1=0.061$ $p<0.05$). Model 2 support the positive and significant effect of NFD assurance quality on Tobin’s Q ($\alpha_1=0.745$, $p<0.01$). Thus, these results again support the hypothesis that higher assurance quality is positively assessed by capital markets and firms benefit from a higher market valuation.

Regarding Model 3, results again clearly meet the two requirements for recognising the mediating effect. First, they register the positive and significant impact of reporting restatements on corporate performance ($\delta_2=0.016$, $p<0.01$). Second, higher NFD assurance quality is again positively assessed by capital markets by showing a positive and significant effect on corporate market performance ($\delta_1=0.708$, $p<0.01$). Note that this value is lower than in Model 2 ($\delta_1=0.708$ vs. $\alpha_1=0.745$). Thus, findings confirm the mediating impact of restatement issuance on the relationship between assurance quality and market valuation.

Table 4.9. Sensitivity analysis. Capital market reactions to higher assurance quality. The mediating effect of restatement issuance on the relationship between NFD assurance quality and the market valuation

	<i>NFD_Restatement</i>		<i>TobinQ</i>		<i>TobinQ</i>	
	Coef.	Std. Error	Coef.	Std. Error	Coef.	Std. Error
<i>Main variables: independent and mediating</i>						
Assurance_Quality	0.061***	0.011	0.745***	0.097	0.708***	0.074
NFD_Restatement					0.016***	0.262
<i>Control variables</i>						
Size	-0.031	0.143	-4.970***	0.270	-6.437***	0.223
Leverage	-0.037**	0.015	-0.027***	0.005	-0.19***	0.004
Financial_Res	0.149	0.938	-7.178***	0.948	-6.901***	0.682
GRI	-1.365	1.317	9.407***	1.246	12.272***	0.865
Number_Restatements			0.336**	0.148	-0.568**	0.238
Year, Country and Industry effects	Controlled		Controlled		Controlled	
	Wald chi2		Wald chi2		Wald chi2	
	Prob > chi2 = 0.0000		Prob > chi2 = 0.0000		Prob > chi2 = 0.0000	
Sample: 1,580 firm-year observations (353 unique firms) from 2012-2016						

As previously claimed for the cost of capital, the higher corporate valuation from capital markets, as a result of higher NFD assurance quality, is mediated by the reporting of restatements. These outcomes, again, provide evidence about the positive capital market assessment of NFD assurance quality and the mediating effect of restatement issuance.

4.5. Discussion

Following signaling theory, this research first investigated the effect of NFD assurance quality on market confidence. In every analysis developed, results confirmed that assurance quality increases credibility and positively influences market confidence, thereby decreasing the cost of capital (price-earnings-growth ratio) and increasing market valuation (Tobin's Q)¹⁰. These results are coherent with previous studies supporting the thesis that assurance enhances users' perception and confidence (e.g., Hodge et al., 2009), leads to a decrease in information asymmetries (e.g., Cuadrado-Ballesteros et al., 2017) and the of cost of capital (e.g., Casey and Grenier, 2015; Martínez-Ferrero and García-Sánchez, 2017; Weber, 2014). The results of this study expanded and developed these ideas further

¹⁰ The effects on cost of capital and market valuation converge, even if they have opposite signs. The effects that reduce the cost of capital are considered positive, on the contrary, the effects that increase the market valuation are considered positive. For this reason, the results obtained from the two different analyses are both positive and can be considered consistent.

by considering the quality of NFD assurance instead of the mere dichotomous study of the phenomenon.

The deficiencies linked to NFD assurance quality (diversity of regulations, criteria, levels, scope, etc.) call for analysing and evaluating the differences in this practice in detail (Kolk and Perego, 2010; Martínez-Ferrero et al., 2018). Quality plays a crucial role in determining the informative value of the assurance (Fonseca, 2010) and, along with this, it will affect market confidence in non-financial information and, therefore, the cost of capital. It must be highlighted that, from a theoretical perspective, the concept of NFD assurance quality does not find a univocal definition in the literature nor in the standards of NFD preparation and assurance. It is possible to argue that a measurement of assurance quality is still premature, given the heterogeneity of the standards and regulations by which it is currently characterised. However, even if the literature in this regard is still very limited, this research follows the same measurement framework developed by Martínez-Ferrero et al. (2018), based on the contributions made by O'Dwyer and Owen (2005) and Perego and Kolk (2012), so reposing on a solid theoretical background. The confirmation of the first hypothesis demonstrates that the quality of NFD assurance signals credibility, and that the capital market recognises its role in reducing information asymmetries, thereby increasing the credibility of non-financial information with positive feedback. Through the signaling properties of

higher NFD assurance quality, it is possible to achieve greater market confidence, reducing the cost of capital.

Regarding the mediating role of restatements on the relationship between assurance quality and market confidence, the results partially confirmed the second hypothesis, explaining how the quality of NFD assurance decreases the cost of capital. According to the results of the proposed models, the greater market confidence given to high assurance quality is achieved through the employment of restatements. The accuracy that restatements signal, combined with the credibility of higher assurance quality, increases market confidence, thus decreasing the cost of capital. This is true, however, only for update restatements (sub-hypothesis 2b). The mediating role in the relationship between assurance quality and market confidence is not confirmed in the case of error restatements (sub-hypothesis 2a). It seems that both types of restatements have some signaling value, but the feedback that they generate have contrary effects. Update restatements, are associated with greater market confidence, as demonstrated by positive feedback. This dynamic leads to a decrease in the cost of capital. Additionally, they are mediators in the relationship between NFD assurance quality and the cost of capital, demonstrating that the greater credibility that assurance quality grants in the eyes of the capital market is partially explainable by the issuance of update restatements. Error restatements, on the contrary, are associated with lower market confidence, demonstrated by the negative feedback of increased cost of capital. Additionally,

as previously mentioned, error restatements have no mediating role in the relationship between NFD assurance quality and the cost of capital. According to these results, error restatements are perceived by the capital market as providing lower data accuracy and because of this they are penalised with a greater cost of capital.

The correlation between assurance quality and restatements is a finding coherent with the ones of Ballou et al. (2018) and Michelon et al. (2019), who focused on the provision or not of the assurance service in NFD. Like the first mentioned paper, the sample of this study contained many more restatements connected to updates than to errors. NFD assurance quality has a stronger correlation with restatements connected to updates in definition, scope, and calculation methodology than to error. This partially contrasts with Michelon et al. (2019) and their evidence that this practice is employed by NFD assurance providers mostly for non-material error restatements. Additionally, this research explores the mediating effect of restatement issuance on the relationship between assurance quality and the cost of capital, representing the joint effect of credibility and accuracy of NFD on market confidence. By examining how restatement issuance can explain, at least in part, the effect of assurance quality on the cost of capital, this research adds new elements to recent and limited NFD restatement literature. A large number of studies have examined NFD and questioned their credibility and usefulness (e.g., Michelon et al., 2015), but there is still little and

limited research on the issuance of data rectifications connected to non-financial information (Ballou et al., 2018; Michelin et al., 2019). This is an important gap in the light of the notable growth of frequency and magnitude this phenomenon has experienced in recent years. The literature demanded further investigations of NFD restatements, especially since their magnitude and consequences are substantially different from those related to rectifications of financial information. Following the recommendations of Michelin et al. (2019), this study contributes to evaluating whether rectifications are a vehicle to creating a reinforced image in the capital market.

Many of the above-mentioned authors claimed that assurance reduces information asymmetries and is positively perceived by external stakeholders. This line of research is further developed by demonstrating that the greater quality of assurance signals credibility of non-financial information. A greater level of quality is associated with a better feedback from the capital market, demonstrated by a decrease in the cost of capital. Although this phenomenon was predictable from the studies carried out so far, no research has been identified that proves it, so far. The results concerning restatements were more surprising. They showed that both types of restatements signal the accuracy of NFD but in opposite ways: update restatements signal a greater level of accuracy that is positively perceived by capital markets, thereby decreasing the cost of capital (positive feedback); error restatements, on the contrary, signal a lower level of accuracy that is negatively

perceived by capital markets, resulting in an increased cost of capital (negative feedback).

The results of this study partially support the thesis offered by Michelin et. (2019), according to which NFD restatements can be used by assurance providers to co-build legitimacy with their clients. Restatements allow clients to transmit an image of transparency to external stakeholders and NFD assurance providers can use restatements as a tool to legitimise the need for their work and to compete in a new market. This mechanism has been demonstrated to be effective by this research because capital markets recognise restatements as being able to increase reporting accuracy, and thereby, increase market confidence. However, this is true only for restatements connected to updates in definitions, scope, or calculation methodologies. Issuing a restatement because of an error or omission in a previous NFD is penalised by capital markets and results in an increase in the cost of capital. This market reaction, combined with the fact that most restatements in the considered sample were related to updates instead of errors, allows to exclude the assumption that NFD assurance providers may “take advantage” of error restatements to legitimise their services. Moreover, even if they did, it would be counterproductive for their clients that would be penalised in terms of market confidence. A possible explanation for this difference from the study of Michelin et al. (2019) can be found in the fact that the sample of this research is comprised of European companies, while theirs is made up of US firms. The longer and

stronger tradition of non-financial information reporting and assurance in Europe, combined with the growing attention being paid by legislators to this issue (i.e., Directive 2014/95/EU) could explain, at least partially, the increased maturity in the non-financial information reporting/assurance practices and the valuation of their output by capital markets.

Under the lens of the signaling theory, the demonstration of signaling value of NFD assurance quality combined with restatements, as means of showing credibility and accuracy, represents an advance over previous studies concerning assurance and its contribution to NFD credibility (Ballou et al., 2018; Casey and Grenier, 2015; Cuadrado-Ballesteros et al., 2016, 2017; Francis et al., 2005; Martínez-Ferrero and García-Sánchez, 2017). This advance is primarily represented by the fact that the effect of NFD assurance on market confidence is no longer considered in a dichotomous manner but based in relation to its quality. Furthermore, this effect is explained, at least partially, by the issuance of restatements, understanding the differences between whether they are issued because of methodological updates or errors.

Greater assurance quality signals credibility due to the increased incidence of restatements connected with updates in definitions, scope, and calculation methodologies. These kinds of restatements provide more accuracy to NFD. As assumed, the mediating role restatements play in assurance quality and market confidence's relationships is confirmed by lower capital costs and increased market

valuation. Contrarily, even if NFD assurance quality is also associated with error restatements, these restatements do not play a mediating role in market confidence and instead produce an increase in the cost of capital.

Malpractice in non-financial information reporting and its assurance causes ethical dilemmas in the field of accounting (Horrigan, 1987; Leung and Cooper, 1995) but it could also cause further harm given the primary purpose of this practice: to increase companies' transparency, awareness and responsibility concerning environmental, social, and economic performance (Elkington, 1999). Based on the results of this study, malpractice brought about by the "abuse" of error restatements only to justify the need for NFD assurance providers' services, does not seem to be carried out. And even if it were, the capital market would be able to recognise and penalise it, discouraging this practice not only from an ethical point of view but also from a practical one.

Lastly, about the methodology employed: (i) this study employed a European sample of analysis, in contrast to previous studies which focused on national or cross-country analysis; and (ii) provided solid and robust evidence obtained by proposing several regression models for panel data that enhances the predictive capacity of the results.

4.6. Final considerations

By using a European sample of analysis from 2012 to 2016, this study provides the following novel evidence. Using Baron and Kenny's (1986) three-step process, results find support for the joint influence of the credibility and accuracy of non-financial information on ensuring positive capital market assessment. The effect of higher NFD assurance quality as signal of credibility is positively assessed by capital markets, resulting in a reduction in the cost of capital. Second, results confirm a contingency on restatement issuance as a signal of accuracy, therefore confirming the mediating effect of restatements, related to update restatements, on the above relationship.

The outcomes of this research offer several implications for theory and practice. Verifying that there is no misuse of restatements by assurance providers is one of the major ethical and environmental implications of this research. In addition, one the basic ethical principles on which NFD assurance and its credibility are based, along with auditor independence and the absence of conflicts of interest, is a substantive verification process rather than a symbolic one (Boiral et a. 2019). Although the symbolic nature of NFD assurance and its managerial manipulation have been highlighted in the literature (Boiral 2013; O'Dwyer and Owen 2005; Perego and Kolk 2012), given the maturing process that non-financial information reporting is undergoing, the debate about how this symbolism functions is still open. This research sheds light on aspects of the NFD assurance profession that

have been little explored up to now, demonstrating that both assurance quality and the use of restatements are substantive rather than symbolic in the eyes of the capital market due to their signaling value and the role that they play in reducing information asymmetries.

An additional implication concerns researcher in this area. Most of the literature continues to view NFD and its assurance as a nascent topic. However, a more mature perspective of this issue will undoubtedly emerge from this research. This is in terms of both the production and the use of NFD. In outlining future research concerning non-financial information reporting and assurance, it seems appropriate to hypothesise and study more evolved and complex dynamics than in the past.

The practical implications of this study are mainly for NFD assurance providers, disclosing companies, investors, and regulatory bodies. First, companies receive clear confirmation of the importance of investing in NFD assurance quality. Financial markets do not evaluate assurance dichotomously, but reward companies that have higher assurance quality thanks to the greater credibility it provides. Additionally, NFD preparers should consider that restatements are positively viewed by the markets only if they concern updates. As predicted (KPMG, 2011), error restatements reduce confidence in a company's disclosing accuracy. This aspect should be taken into particular consideration also by NFD assurance providers. They should be discouraged from misusing error restatements just to

legitimise the need for assurance on a NFD and to enhance their profession. The findings of this study also provide valuable implications for investors and stakeholders, who may perceive the quality of assurance as a means of demonstrating a company's constant commitment to improving the credibility and accuracy of its NFD. Finally, in relation to the implications for regulatory bodies and public administrations, the results obtained will reopen the debate about two issues: the need to standardise NFD and the practice of assurance. Undeniably, regulation of both non-financial information reporting and assurance is complex. However, as previously mentioned, large amounts of restated information appearing year after year can diminish the credibility of reporting procedures and contents. Thus, it is essential to encourage regulatory bodies to promote the design and enforcement of a global standard for both reporting and assuring NFD which covers practices and procedures. There is a general convergence towards GRI standards, but disclosures are still highly heterogeneous. This undermines the trust given by shareholders and other stakeholders due to the difficulty of understanding NFD and establishing comparisons among companies.

The results illustrated must be carefully examined considering the following limitations and future research perspectives. First, regarding information about restatements, this study, consistent with Ballou et al. (2018), did not consider the size/materiality of restatements in collecting data due to the absence of universally approved thresholds of materiality for non-financial information. Additionally,

regression models consider the type of information restated (social, environmental and governance) in a limited way. Future studies should examine how specific issues can also generate different effects on capital market confidence. Second, the research relies on cost of capital and market valuation as indications of capital market reaction, but there are several other variables related to market confidence that can be employed (e.g., market capitalisation, firm risk, and so on). Because of that, future studies could corroborate the evidence here reported by employing sensitive measures of the cost of capital, like those proposed by Claus and Thomas (2001) and Ohlson and Juettner-Nauroth (2005). Third, NFD assurance is considered in relation to its quality, while there may also be other determinants affecting its relationship with market confidence and restatements. Future studies could examine how different attributes of assurance providers (reputation or specialisation, among others) also impact capital market confidence. Additionally, to better understand the impact of different elements of assurance quality, it could be useful to include only some items of the assurance quality index and verify possible differences in the relationship with restatements and cost of capital. Similarly, industry-specific analysis could provide further insights.

Finally, there is a clear sample bias by examining only European firms that should be addressed in future studies, considering different contexts like the USA, Asian and Latin-American countries. Additionally, results are controlled by year, country, and industry effects. However, future studies could benefit from providing

additional evidence considering geographic and sectorial diversity. For example, financial vs. non-financial firms, Anglo-Saxon countries vs. Nordic countries, etc.

Chapter 5

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Conclusions

5.1. Findings and contribution of the research

The findings of the three studies can be analysed in the light of their contribution to the research questions formulated in the first chapter.

i. What has been the evolutionary path of NFD assurance?

The aim of the first study was twofold: first, to explore the evolution of the literature on NFD assurance by systematising academic studies (i.e., papers published in scientific journals) and professional contributions (i.e., papers published in non-scientific sources) in the auditing field and, second, to understand whether mutual influence between theory and practice exists in the field of NFD assurance. In order to achieve this dual aim, a systematic literature review has been performed and the results have been analysed, adopting a longitudinal perspective.

As far as the first objective is concerned, the analysis has identified a four-stage development process in the academic literature: 1) Identification and problematisation; 2) Investigating the effects; 3) Investigating the determinants; 4) Development and consolidation. This development process can be useful to visualise and understand the past in order to generate new research projects for the future. Regarding the professional literature, it has progressed from an observatory stage characterised by surveys that helped to understand the current state to a proactive stage focused on overviews and recommendations. As regards the second objective, the present study highlights a very limited, nearly non-existent intermingling between academic and professional studies.

ii. How could NFD assurance quality be defined and assessed?

Having illustrated, in a broad perspective, the various concepts related to NFD assurance quality, the second study highlights convergences and criticisms. From the analysis possible suggestions for development emerge addressed mostly to regulators and standard setters. There is considerable variation in how the NFD assurance framework is interpreted and applied, making problematic to assess the quality of assurance provided on such disclosures. Examining the various models for measuring NFD assurance quality and evidence proposed by authors, this practice has a higher level of homogeneity than NFD reporting, as evidenced by greater convergence in terms of process and outcomes. As a result of that,

assurance, and by consequence the assessment of its quality, seems more comparable than the reporting of non-financial information. It is worth noting, as a possible future development, that studies on assurance quality focused primarily on its determinants. The impact and perception of assurance quality among external stakeholders, as defined by these models, has received little attention. The reason for greater homogeneity of NFD assurance, compared to reporting, can also be found in audit quality frameworks. In terms of the professional and ethical standards of subjects performing the assurance, the rules already in place for financial reporting can be applied to non-financial reporting too, as it is already done in many cases. While greater adaptation is required, also the process and outcomes factors can benefit from existing models, not so much from direct translatability of methodologies as from capitalizing on the experience that led to their formation and refinement.

The imminent revision of Directive 2014/95/EU represents a great opportunity in this regard. Leaving an open environment in terms of methodologies and standards adopted to report and assure NFDs seemed the best way, initially, to facilitate the mandatory adoption of this practices. Considering that a convergence emerged, and strengthened during the last few years, it may be time to provide more stringent rules. Given the multidimensional nature of non-financial information, imposing universally applicable methodologies and metrics for its disclosure and assessment would be difficult. As a result, a well-balanced option could be the

provision of sector-specific indicators, mandatory minimum indicators with strict rules, and optional indicators defined only in terms of thematic areas and principles.

iii. How does NFD assurance quality impact external users?

By using a European sample of analysis from 2012 to 2016, the third study provides the following novel evidence. Using Baron and Kenny's (1986) three-step process, results find support for the joint influence of the credibility and accuracy of non-financial information on ensuring positive capital market assessment. The effect of higher NFD assurance quality as signal of credibility is positively assessed by capital markets, resulting in a reduction in the cost of capital. Second, results confirm a contingency on restatement issuance as a signal of accuracy, therefore confirming the mediating effect of restatements, related to update restatements, on the above relationship.

These results are coherent with previous studies supporting the thesis that assurance enhances users' perception and confidence, leads to a decrease in information asymmetries and in the of cost of capital. Additionally, it advances previous studies on market confidence and NFD assurance by considering its quality instead of the mere dichotomous study of the phenomenon. According to the results of the proposed models, the greater market confidence given to high assurance quality is achieved through the employment of restatements. The accuracy that restatements signal, combined with the credibility of higher assurance

quality, increases market confidence, thus decreasing the cost of capital. This is true, however, only for update restatements, the mediating role in the relationship between assurance quality and market confidence is not confirmed in the case of error restatements. On the contrary, these rectifications signal a lower level of accuracy that is negatively perceived by capital markets, resulting in an increased cost of capital (negative feedback).

All the studies of this research suggests that NFD assurance has evolved considerably and is reaching a more “mature” stage of its developed. What both theory and practice demonstrate has also found confirmation in empirical evidence concerning market reaction. Once considered a "nascent," unregulated practice with difficult-to-define characteristics and outcomes, NFD assurance now demonstrates many aspects of convergence and maturation and appears ready for a rapid homogenization process following the implementation of specific regulatory initiatives. This service has now become a global majority practice and should be addressed as such; the debate on “if” assurance should be provided on NFDs seems to no lo longer stand. Assurance quality is important to researcher, practitioners, and external users, even if measuring it is difficult. This reinforces the need for the body of rules and standards on NFD and its assurance to be homogenized in order to facilitate the use of this information and increase its comparability.

On the light of the above, the provision of external verification on NFDs seems ready to move from a voluntary low regulated model to a mandatory strictly

regulated one. Nevertheless, still many limitations and areas of improvement need to be addressed (the lack of standardization of the subject matter, above all), however, once the rules for disclosing non-financial information will be homogeneous it seems reasonable to expect that assurance will adapt quickly.

5.2. Implications

The implications of this study concern researchers, practitioners, regulators, and standard setters. First, it offers the opportunity for an in-depth understanding of the topic of NFD assurance and its evolution, with a categorisation that is understandable and consistent with both theory and practice. In doing so, it endeavours to provide output relevant for both “worlds” that can narrow the gap between theory and practice.

Addressing regulators and standard setters, the research confirms the need for a homogeneous set of rules for NFD, which may be the first step in allowing NFD assurance to complete its maturation. This will lead to a greater comparability of NFD assurance and ease the assessment of its quality. As already stated, professional NFD assurance standards and practices seem more homogeneous and easily adaptable than reporting ones. For this reason, it seems reasonable to expect that, once the reporting "playing field" is homogenized, the assurance will adapt quickly. Given the multidimensional nature of non-financial information, imposing universally applicable methodologies and metrics for its disclosure and assessment

would be difficult. As a result, a well-balanced option could be the provision of sector-specific indicators, mandatory minimum indicators with strict rules, and optional indicators defined only in terms of thematic areas and principles.

An additional implication concerns researchers in this area. Most of the literature continues to view NFD and its assurance as a nascent topic. However, a more mature perspective of this issue will undoubtedly emerge from this research, in both terms of production and use of NFDs. In outlining future research concerning non-financial information reporting and assurance, it seems appropriate to hypothesise and study more evolved and complex dynamics than in the past.

Companies receive clear confirmation of the importance of investing in NFD assurance quality. Financial markets can distinguish between low-quality and high-quality assurance, and reward companies because of greater credibility it provides. Additionally, NFD preparers should consider that restatements are positively viewed by the markets only if they concern updates. As predicted, error restatements reduce confidence in a company's disclosing accuracy. This aspect should be particularly taken into consideration by NFD assurance providers. They should be discouraged from misusing error restatements just to legitimise the need for assurance on a NFD and strengthen the demand for their services.

The research's findings also have important implications for investors and stakeholders, who may view assurance quality as a way of demonstrating a

company's ongoing commitment to improving the credibility and accuracy of its NFD.

5.3. Limitations

Results and contributions obtained from this research present limitations that must be taken into consideration. First, in systematizing the academic and professional literature of NFD assurance, the relationships between the two have been considered mainly in terms of citations and temporal lag. However, it would be possible to investigate the reciprocal influences in terms of themes and contents in order to produce additional evidence, which could reinforce or contrast what has already emerged. In light of the gap that has emerged between academic and professional literature, it is difficult to depict a homogeneous picture and draw conclusions equally valid for both worlds.

Second, even though no geographical restrictions were applied in the study of the literature, the regulatory and standard analysis, as well as the empirical investigation, were primarily focused on the European context. This was necessitated by the fact that, to date, the disclosure and assurance of NFDs has heterogeneous rules and characteristics not only across different regions but also across countries within the same region. As a result, it appeared premature to conduct a worldwide investigation on the quality of assurance. Europe was chosen because it has proven to be a pioneer in terms of sensitivity to non-financial issues

and is currently in the midst of the regulatory process of their reporting and assurance. To avoid the problems of comparability and evaluation between different countries becoming reflected also between different regions, it may be advisable to conduct research in this area on a global scale in the future.

Finally, the current study focuses on NFD assurance quality, specifically in terms of process and output. Other elements to consider, as revealed by the examined frameworks, include input and context factors. Furthermore, the viewpoint considered is primarily concerned with NFD assurance users. The perspective of assurance producers requires equal attention and may provide valuable insights for greater understanding and improvement, particularly for the assurance process.

5.4. Avenues for future research

The investigation carried out allow to highlight different possible future research paths based on the state that emerged from the research. The homogenization of assurance rules and their mandatory nature are likely imminent regulatory changes that provide an important point for dialogue between theory and practice. As it has emerged, the manner in which these rules will be written will significantly impact on NFD assurance producers and users; consequently, academic research can contribute by suggesting useful perspectives for the realization of a model capable of bridging the current gaps.

To understand how NFD assurance is produced, and its quality ensured, the perspective of assurance provider could receive greater attention. Considering the rising importance and relevance that disclosing NFD has gained and the prospects for its growth in the near future, it seems worthy to investigate the role played by assurance providers in the policymaking and production processes of NFD as well as the role they wish to play in the future. Specifically, in the NFD assurance market there are more varied players than in audit of financial reports. The mandatory disclosure and assurance of non-financial information is leading to the rapid expansion of what was once a niche market, both for consulting and auditing services. In this context, it is interesting to understand what the orientation of the assurance providers towards this market is, and above all, how they are dealing with the tasks related to it.

Finally, prior research has almost entirely focused on inferential testing of NFD assurance practice using a positive approach. Several authors emphasize the importance of studying "auditing in practice" or "auditing in action" (Power and Gendron, 2015) using a qualitative approach in order to understand the logics, dynamics, and behaviours associated with the assurance activity. The study of process and input factors on NFD assurance quality could provide novel and unexpected insights, especially if conducted through an exploratory approach based on direct contact with the investigated realities.

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Appendix

Appendix 1. Academic sources of Chapter 2

Year	Author(s)	Journal
2000	P Wallage	Auditing: A Journal of Practice & Theory
2005	B O'Dwyer, DL Owen	British Accounting Review
2005	J Park, T Brorson	Journal of Cleaner Production
2006	C Deegan, BJ Cooper, M Shelly	Managerial Auditing Journal
2007	R Simnett, M Nugent	Australian Accounting Review
2008	A Kolk, P Perego	Business Strategy and the Environment
2008	C Deegan, BJ Cooper, M Shelly	Australian Accounting Review
2008	J Cohen, G Krishnamoorthy, A Wright	Journal of Accounting Education
2009	R Simnett, A Vanstraelen, WF Chua	Accounting Review
2009	G Manetti, L Becatti	Journal of Business Ethics
2009	K Hodge, N Subramaniam, Stewart J	Australian Accounting Review
2009	TJ Mock, C Strohm, KM Swartz	Australian Accounting Review
2009	F Perez, LE Sanchez	Environmental Management
2009	PJ Coram, GS Monroe, DR Woodliff	Auditing: A Journal of Practice & Theory
2009	R Simnett, M Nugent, AL Huggins	Accounting Horizons
2010	A Fonseca	Corporate Social Responsibility and Environmental Management
2010	A Skouloudis, K Evangelinos, F Kourmouzis	Journal of Cleaner Production
2010	MJ Jones, JF Solomon	Accounting Forum
2010	C Rhianon Edgley, MJ Jones, JF Solomon	Accounting, Auditing & Accountability Journal
2010	Y Sawani, M Mohamed Zain, F Darus	Social Responsibility Journal
2011	B O'Dwyer, D Owen, J Unerman	Accounting, Organizations and Society
2011	G Pflugrath, P Roebuck, R Simnett	Auditing: A Journal of Practice & Theory
2011	B O'Dwyer	Contemporary Accounting Research
2011	J Smith, R Haniffa, J Fairbrass	Journal of Business Ethics
2011	A Huggins, WJ Green, R Simnett	Current Issues in Auditing
2011	J Ridley, K D'Silva, M Szombathelyi	Corporate Governance: The International Journal of Business in Society
2012	P Perego, A Kolk	Journal of Business Ethics
2012	R Moroney, C Windsor, YT Aw	Accounting & Finance
2012	G Manetti, S Toccafondi	Journal of Business Ethics

Year	Author(s)	Journal
2012	C Gillet	Journal of Accounting & Organizational Change
2012	W Green, Q Li	Accounting, Auditing & Accountability Journal
2012	R Simnett	Sustainability Accounting, Management and Policy Journal
2013	A Zorio, MA García-Benau, L Sierra	Business Strategy and the Environment
2013	L Sierra, A Zorio, M A García-Benau	Corporate Social Responsibility and Environmental Management
2013	TJ Mock, SS Rao, RP Srivastava	Australian Accounting Review
2013	K Ruhnke, A Gabriel	Journal of Business Economics
2013	W Green, S Zhou	Australian Accounting Review
2013	RP Srivastava, SS Rao, TJ Mock	Journal of Information Systems
2014	RM Junior, PJ Best, J Cotter	Journal of Business Ethics
2014	A Amran, SP Lee, SS Devi	Business Strategy and the Environment
2014	C H. Cho, G Michelon, D M. Patten, RW Roberts	Sustainability Accounting, Management and Policy Journal
2014	R Wong, A Millington	Accounting, Auditing & Accountability Journal
2014	M Castelo Branco, C Delgado, SF Gomes, TCP Eugénio	Managerial Auditing Journal
2014	DN Herda, ME Taylor, G Winterbotham	Journal of International Financial Management & Accounting
2014	P Jones, D Hillier, D Comfort	Corporate Governance: The International Journal of Business in Society
2014	F Darus, Y Sawani, M Mohamed Zain, T Janggu	Managerial Auditing Journal
2014	S Romero, B Fernandez-Feijoo, S Ruiz	Social Responsibility Journal
2015	JR Cohen, R Simnett	Auditing: A Journal of Practice & Theory
2015	RJ Casey, JH Grenier	Auditing: A Journal of Practice & Theory
2015	GF Peters, AM Romi	Auditing: A Journal of Practice & Theory
2015	R Simnett, AL Huggins	Sustainability Accounting, Management and Policy Journal
2015	MM Cheng, WJ Green, JCW Ko	Auditing: A Journal of Practice & Theory
2015	H Brown-Liburd, VL Zamora	Auditing: A Journal of Practice & Theory
2015	B Ackers, NS Eccles	Accounting, Auditing & Accountability Journal
2015	M Kend	Sustainability Accounting, Management and Policy Journal

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2015	SF Gomes, TCP Eugénio, MC Branco	Corporate Governance: The International Journal of Business in Society
2015	E Seguí-Mas, HM Bolas-Araya, F Polo-Garrido	Annals of Public and Cooperative Economics
2015	B Fernandez-Feijoo, S Romero, S Ruiz	Australian Accounting Review
2015	A Alon, M Vidovic	Corporate Reputation Review
2015	C Gillet-Monjarret	Accounting in Europe
2015	A Ferguson, G Pündrich	Auditing: A Journal of Practice & Theory
2015	P Jones, D Comfort, D Hillier	Property Management
2016	A Gürtürk, R Hahn	Journal of Cleaner Production
2016	GJM Braam, LU de Weerd, M Hauck, MAJ Huijbregts	Journal of Cleaner Production
2016	L Chen, B Srinidhi, A Tsang, W Yu	Journal of Management Accounting Research
2016	RN Birkey, G Michelon, DM Patten, J Sankara	Accounting Forum
2016	M Fazzini, L Dal Maso	Sustainability Accounting, Management and Policy Journal
2016	MK Bepari, AT Mollik	Managerial Auditing Journal
2016	B Fernandez-Feijoo, S Romero, S Ruiz	Journal of Cleaner Production
2016	S Zhou, R Simnett, WJ Green	Auditing: A Journal of Practice & Theory
2016	J Wong, N Wong, WY Li, L Chen	Pacific Accounting Review
2016	E Seguí Mas, HM Bolas-Araya, P Asensi Peiró	CIRIEC-Espana Revista de Economía Publica, Social y Cooperativa
2017	J Martínez-Ferrero, IM García-Sánchez	International Business Review
2017	W Maroun	British Accounting Review
2017	C Kuzey, A Uyar	Journal of Cleaner Production
2017	S Fuhrmann, C Ott, E Looks, T W Guenther	Accounting and Business Research
2017	M Bagnoli, SG Watts	Journal of Economics & Management Strategy
2017	A Venturelli, F Caputo, S Cosma, R Leopizzi, S Pizzi	Sustainability
2017	G Braam, R Peeters	Corporate Social Responsibility and Environmental Management
2017	P Velte, M Stawinoga	Journal of Business Economics
2017	A Rossi, L Tarquinio	Managerial Auditing Journal
2017	B Cuadrado-Ballesteros, J Martínez-Ferrero, IM García-Sánchez	International Business Review
2017	J Martínez-Ferrero, IM García-Sánchez	Journal of Management & Organization
2017	J Martínez-Ferrero, IM García-Sánchez	Business Ethics: A European Review

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2017	VL Brown, MJ Kohlbeck	Issues in Accounting Education
2017	C Gillet-Monjarret, G Rivière-Giordano	Comptabilité-Contrôle-Audit
2017	B Ackers	International Journal of Disclosure and Governance
2018	D Reimsbach, R Hahn, A Gürtürk	European Accounting Review
2018	J Martínez-Ferrero, IM García-Sánchez	Journal of Business Ethics
2018	W Maroun	Accounting, Auditing & Accountability Journal
2018	CR Briem, A Wald	Accounting, Auditing and Accountability Journal
2018	B Ballou, PC Chen, JH Grenier, DL Heitger	Journal of Accounting and Public Policy
2018	J Martínez-Ferrero, IM García-Sánchez, E Ruiz-Barbadillo	Business Strategy and the Environment
2018	O Boiral, I Heras-Saizarbitoria, MC Brotherton	Journal of Business Ethics
2018	H Al-Shaer, M Zaman	Business Strategy and the Environment
2018	E Seguí-Mas, F Polo-Garrido, H Bolas-Araya	Sustainability
2018	B Fernandez-Feijoo, S Romero, S Ruiz	Corporate Social Responsibility and Environmental Management
2018	N Sobhan, A Hassan, M Fletcher	International Journal of Sustainable Economy