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The Materiality Assessment and Stakeholder Engagement: A Content Analysis of Sustainability Reports

Abstract

Materiality is the driver through which companies can select issues to be included in non-financial reports favouring the expectations of all stakeholders. The aim of this research is to investigate, under the lens of Stakeholder Theory and Instrumental Stakeholder Theory, the possible relationship between the application of the materiality principle in non-financial reports and the stakeholders' engagement processes, with a preliminary focus on different industries that are characterized by different types of stakeholder and on the application of GRI and/or IIRC guidelines promoting their direct involvement. A manual content analysis has been performed on the Italian "public interest entities" that published, for the 2017 year, a non-financial statement (Legislative Decree No 254/2016). The statistical analysis highlights the importance of industry, GRI Standards application and stakeholder engagement in the reporting process, in particular in the materiality analysis, to achieve a high level of materiality application and good report quality for stakeholders.

Key Words: materiality, stakeholder engagement, stakeholder theory, sustainability report, integrated report, GRI, content analysis.

Short running title: The Materiality Assessment in Sustainability Reports.

1. Introduction

The growing attention paid to sustainability, in all its environmental, social, ethical and economic aspects, has brought non-financial reports into widespread use. There are different frameworks and standards that guide the creation process and the content of such reports by defining many key principles; among these, *materiality* is the most significant and complex. This principle represents the driver through which companies can identify and select issues to be included and treated in integrated and sustainability reporting, as well as in other voluntary reporting, thus favouring the expectations and needs of all stakeholders. The Global Sustainability Standards Board explain that the report shall cover topics that reflect the companies' important economic, environmental and social impacts, or influence the stakeholders' assessments and behaviour (GSSB, 2016).

Since the eighties, studies have been undertaken to better understand this concept and how it was used and considered by the final receivers of the document when prepared in accordance with the principle itself (Deegan & Rankin, 1997; Eccles & Krzus, 2014; Holstrum & Messier Jr., 1982; Jones *et al.*, 2016; Vance, 2011). Several works stress the *importance* of the issue (Murillo & Lozano, 2006; Porter & Kramer, 2006; Unerman & Zappettini, 2014), while others have focused on the *determinants* of materiality and on the materiality *indicators* (Brammer & Pavelin, 2006; Cooke, 1992; Fasan & Mio, 2017; Hassan & Ibrahim, 2012; Patten, 2002; Webb *et al.*, 2008). This study begins from the research related to *materiality analysis* (Font *et al.*, 2016; Pfitzer *et al.*, 2013) and to the connected set of stakeholder expectations. Some studies have investigated the crucial issue, for sustainability and integrated reports, of materiality analysis to achieve the highest level of coincidence between the interests of all stakeholders (Boesso & Kumar, 2009; Unerman & Bennett, 2004) and of the companies themselves (Adams, 2004; Calabrese *et al.*, 2016; De Villiers & van Staden, 2010; O'Dwyer *et al.*, 2005).

Calabrese *et al.* (2016) and Basu & Palazzo (2008) have opened spaces for new studies and

investigations about this issue and, in particular, on materiality assessment in sustainability reporting and on the motives behind this type of activities, measuring impacts and determining links to stakeholder needs.

We aim to fill an investigative gap regarding the possible contribution that different levels of *stakeholder engagement* could provide to the process of materiality analysis and thus to the related production of the non-financial reports. The direct involvement of all company stakeholders, directly encouraged and guided by the main international standards, could be the way to truly understand stakeholder expectations and needs and to make companies capable of appropriately defining the report content.

Although *Stakeholder Theory* (Freeman, 1984) and the *Instrumental Stakeholder Theory* (Jones, 1995) are a widely used in this field of research, and the need to meet the information requests and expectations of all stakeholder groups as much as possible has been highly investigated, the process of engagement of these stakeholders has not been deeply analysed. The aim of this paper, therefore, is to investigate, through a manual content analysis and the lenses of these theories, the relationship between stakeholder engagement (considering their different types and groups with a focus on different industries and on the main international guidelines that promote it) and the application level of the materiality principle in the non-financial reports published for the 2017 financial year by Italian “public interest entities” companies (see Legislative Decree No 254/2016). Three hypotheses will be verified by empirical analysis of the collected data; in particular, the relationship between the materiality principle’s level of application and 1) the industry, 2) the application level of GRI standards and/or IIRC guidelines, and 3) the spread of stakeholder engagement in the materiality analysis process.

The paper is divided into three main sections: in the first, we present a literature review and some theoretical foundations; the second section shows the methodology of the research, the results of the empirical analysis and a discussion of those results; and in the third and last section, we offer final considerations, limits and future research avenues.

2. Theoretical framework

Preliminary concepts: CSR, Materiality and Stakeholder Engagement

Corporate social responsibility (CSR) can be defined as the responsibilities of a company towards society and the environment, deriving from the idea that business and society are truly interlinked (Wood, 1991) and that companies must promote some social good in addition to what is required by law (McWilliams and Siegel, 2001).

In recent years, the quantity of studies devoted to corporate social responsibility has increased (Geng-qing Chi, 2019). In particular, numerous CSR studies have focused on the relationship between business and society, or the role of business with regard to CSR (Garriga & Melé, 2004; Scherer & Palazzo, 2007). Many researchers have analysed the reasons why companies decide to practise CSR and the link between CSR and performance (Servaes & Tamayo, 2013). Other studies have examined CSR from different perspectives related to the companies’ stakeholders: employees (Lee *et al.*, 2013), local communities (Tsoi, 2010), nonprofit organisations (Arenas *et al.*, 2009), or consumers (Andrea *et al.*, 2011).

In this context, despite the strategic role that communication can play in the development of CSR activities, relatively little attention has been paid to CSR’s communication aspects (Kim, 2019; Brammer & Pavelin, 2006).

The implementation of CSR strategy requires companies to improve a process of communicating the social, ethical and environmental effects of their actions to particular interest groups within society and to society at large (Gray *et al.*, 1987). This responsibility is

marked by the economic, legal, ethical and discretionary expectations that society has of organizations (Font *et al.*, 2016).

The commitment to inform and involve stakeholders, in fact, necessitates an adequate flow of communication through suitable channels, focusing on relevant content. CSR plays a key role in this commitment, and transparent reliable information is also widely considered important for legitimacy. Therefore, in order to explain their CSR, companies must define their instrument of accountability (Adams, 2008). Therefore, responsibility is the process of accepting the expectations placed by society and accountability and involves the duty of providing an account of meeting those expectations (Gray *et al.*, 1997). Many companies worldwide have gradually implemented social and sustainability reporting in order to establish a positive channel of communicating their corporate social responsibility to stakeholders (Hsu *et al.*, 2013; see also Lozano, 2013). Non-financial reporting, in fact, has become one of the best ways for communicating CSR initiatives, making the stakeholders aware of CSR efforts (Morsing & Schultz, 2006).

In this respect, the main dilemma for companies is how to recognize relevant issues to be disclosed in sustainability reporting and to prioritize those material issues in accordance with stakeholder demands (Hsu *et al.*, 2013). The process of accountability, in fact, requires the company to understand the need for information on the part of management, investors and all the stakeholders who can affect the company's long-term performance. In this respect, companies must consider and apply the concept of *materiality*.

The Sustainability Accounting Standard Board (2013) define materiality as a long-term focus on the issues that make a difference to both an organization's performance and management priorities and on the information needed to make sound judgements. According to the International Integrated Reporting Council (IIRC) and the International Federation of Accountants (IFAC) "a matter is material if it could substantively affect the organisation's ability to create value in the short, medium or long term" (IIRC, 2015, p. 8).

In conventional and symbolic use, materiality implies substance or importance in evaluating criteria and reaching judgements. In accounting, the term 'material' appeared, as an adjective, at the turn of the twentieth century in accounting and auditing texts issued by the American Institute of Certified Public Accountants (Edgley, 2014). Since then, several authors (i.e., Brennan & Gray, 2005) have recognized the common characteristics of materiality that help companies to disclose a true and fair view of themselves. Information is considered material if its omission or misstatement could affect the economic decisions of users (Edgley, 2014).

Materiality, in particular, is one of the most significant principles for companies wishing to disclose their CSR. Companies, in fact, can identify and select issues to be included and treated in integrated and sustainability reports favouring the expectations and needs of all stakeholders through this principle. Such needs are to be carefully considered because no organisation is expected to disclose all sustainability issues, but the report should cover aspects that reflect a company's significant economic, environmental and social impacts (GSSB, 2018).

The concept of materiality is fundamental in the field of non-financial information, in which we find a lack of (or minimal) regulatory indications regarding the contents to be reported. In non-financial information, which is often totally voluntary in fact, it is essential to have a precise and correct principle that guides companies in identifying which topics to report and which level of detail to use. For this reason, a materiality analysis and the definition of a matrix of materiality are necessary in order to clarify which topics are relevant and, among these, which are most relevant and require a greater level of development in the report.

This analysis, as anticipated, aims to satisfy the information needs of the company and its stakeholders and, in this respect, is more effective if it can capture and understand the needs of a company's stakeholders. A correct understanding of these needs is an essential element to ensure the effectiveness of social and environmental reporting.

This is where the importance of the *stakeholder engagement* process comes into play. The direct or indirect engagement of all the stakeholders allows the company to properly understand the stakeholder's expectations and needs and, in this sense, allows companies to effectively formulate the report. Company management can identify which interests and issues are important for stakeholders and can report information about those issues.

CSR disclosure and CSR engagement: Literature Review

The widespread literature on materiality include studies evaluating topics ranging from *CSR disclosure* to those devoted particularly to *CSR engagement*.

Several studies analyse the *importance* of good CSR disclosure. Some researchers analyse the importance of gaining returns from companies' CSR, such as company reputation, customer loyalty and customer-company identification (e.g., Calabrese *et al.*, 2016; Du *et al.*, 2010; Schmeltz, 2012). Searcy and Buslovich (2014) show how stakeholders can or cannot appreciate a company through sustainability reports by reading if the company's actions are in line with their values and expectations. Bouten *et al.* (2011) show that sustainability reports should provide stakeholders with information that will allow them to evaluate the companies' social and environmental performance.

Some studies focus on the *reasons* that move a growing number of companies to report about their CSR commitment by means of sustainability reports, websites and other CSR communication activities (e.g., Kolk & Pinkse, 2010), while other papers analyse the effectiveness of CSR disclosure (e.g., Castaldo *et al.*, 2009).

Therefore, a sizeable part of the literature offers many approaches to the *measurement* of company-disclosed CSR commitments (e.g., Bouten *et al.*, 2011; Longo *et al.*, 2005).

Among these studies, many focus on the *importance of the engagement* in order to ensure a good and effectiveness disclosure. Font *et al.* (2016) suggest four different frameworks to clarify the reasons for CSR engagement, which can explain the shift towards more material CSR practices, and therefore communication:

1. *Reputation and risk management theory*, based on the avoidance of factors that can have a negative effect on corporate brands (Bebbington *et al.*, 2008); in this sense, sustainability reports can restore the positive image of the firm and realize the importance of transparency to reputation (Adams, 2008);
2. *Resource-based view of the firm*, which suggests that companies act responsibly to maximize their competitive advantage (Russo & Fouts, 1997);
3. *Stakeholder Theory*, which suggests that corporations act in response to stakeholder desires, either in a preventive or a proactive way (Wood, 1991); sustainability reporting then becomes a channel to satisfy the information requirements of different stakeholder groups;
4. *Creating Shared Value (CSV)*, which explains engagement for the purpose of value creation and product distinction. This should combine with an attitude towards stakeholders to provide success and create value (Porter & Kramer, 2006; Wheeler *et al.*, 2003).

To close this overview of research on CSR disclosure, several studies concentrate on the specific *instrument of accountability* used by companies; in recent years, these studies have mainly considered the *integrated report* (e.g., De Villiers *et al.*, 2016; Frias-Aceituno *et al.*, 2014; Lai *et al.*, 2014; Stacchezzini *et al.*, 2016). On this issue, several researchers aim to analyse the differences between integrated reports (IR) and other stand-alone reports, sustainability reports in particular (e.g., Mio, 2016). The studies analyse, among other things, the targets of IR (Hahn & Kuhnen, 2013), the focus (IR is concentrated on capital rather than on stakeholders), the higher degree of customization and the lower degree of comparability of IR, which aims at reporting on outcomes rather than on outputs (Mio, 2016).

The concept of Materiality: Literature Review

Moving towards the specific issue of *materiality*, studies can be divided into different groups. Several studies are focused on *materiality definition* (Iyer & Whitecotton, 2007); on the definition issue, see also SASB (2013), AccountAbility *et al.* (2006) and GRI (2013). Other examine materiality stress and the *importance* of the issue (Porter & Kramer, 2006; Unerman & Zappettini, 2014).

An important segment of these studies focuses on the *determinants* of materiality and on the materiality *indicators*. Fasan and Mio (2017) define some determinants of materiality related to the legal environment (Webb *et al.*, 2008), to industry (Brammer & Pavelin, 2006; Cooke, 1992; Patten, 2002; Hassan & Ibrahim, 2012) and to board characteristics (Frias-Aceituno *et al.*, 2013). Calabrese *et al.* (2016) focus on different companies' organisational characteristics, such as business models, cultural operating contexts, size and ownership (Adams, 2002; Hahn & Kuhnen, 2013; Spence, 2007). The authors analyse, in particular, the study by Baumann-Pauly *et al.* (2013) that presents a 'sustainability reporting gap' related to company size, as large companies embrace structured reporting, aiming to improve their image with the general public, while SMEs tend to adopt informal reporting, concentrating their communication efforts on their most important stakeholders, particularly employees (Russo & Tencati, 2009).

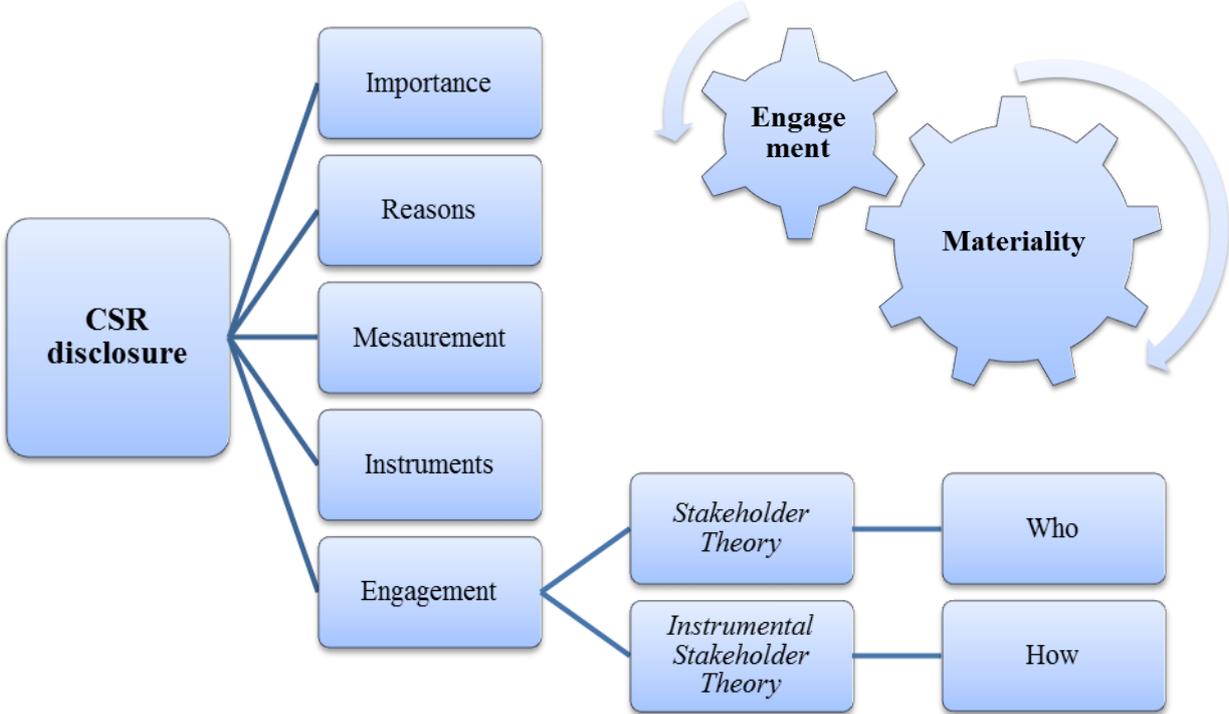
Another group of studies related to materiality focuses on the *process of materiality analysis* and the connected set of issues that stakeholders consider material; in particular, several researchers focus on the differences between what is considered material by stakeholders and what is considered material by management. This is a crucial and essential element of sustainability or integrated reporting: a materiality analysis must be implemented in order to achieve the highest level of correspondence between the interests of all stakeholders. The direct involvement of all company stakeholders (stakeholder engagement) could be the way to obtain this result. Font *et al.* (2016) underline that materiality analysis is the essential process for ranking issues and strategic planning; it allows an integrated approach in defining a sustainability strategy and in the reporting itself (Pfitzer *et al.*, 2013). Calabrese *et al.* (2016) point out that one of the most serious problems with CSR reporting is the lack of completeness in covering all the aspects that are material from a stakeholder perspective (Adams, 2004; Calabrese *et al.*, 2106; De Villiers & van Staden, 2010; O'Dwyer *et al.*, 2005). Companies do not realize a standardized set of stakeholder expectations (Unerman & Bennett, 2004), and there are no practical tools that offer effective assistance in identifying and analysing the different groups of stakeholders (Boesso & Kumar, 2009). The process of stakeholder engagement is necessary to understand stakeholder expectations and needs and, in this sense, to enable companies to appropriately define the report's content (Calabrese *et al.*, 2016). With a careful and well-planned materiality analysis, company management is able to detect which interests and issues are dear to company stakeholders and which have a significant impact on the company in addition to those, stemming from the company itself, that have an external impact. Several studies analyse the room for improvement in this area. Calabrese *et al.* (2016) observe that few studies have investigated the quantitative methods to support materiality assessment in sustainability reporting, and these have not addressed the issues of subjectivity or of completeness in the reporting. Current academic research focuses primarily on measuring CSR activity, rather than on assessing the motives behind those activities, measuring their impacts or determining links to stakeholder needs (Basu & Palazzo, 2008).

Theoretical pillars

The *Stakeholder Theory* and the *Instrumental Stakeholder Theory* guide our research (Donaldson & Preston, 1995; Freeman, 1999). Freeman's Stakeholder Theory (Freeman, 1984)

has been extremely important for the development of Social and Ethical Accounting, Auditing and Reporting (SEEAR) studies and for triple bottom-line accounting. In the recent development of accountability and reporting processes, we have seen not only a transition from financial to non-financial reporting but also a changeover from a mono-stakeholder (shareholders) to a multi-stakeholder model of strategic management (of which reporting is an essential part) (Freeman *et al.*, 2010). Very important international standards and guidelines (e.g., AA1000, GRI Standards, IR Framework) have led this change towards an efficient non-financial disclosure and stress the importance of a full consideration and real engagement of stakeholders (Boesso *et al.*, 2015; Boesso & Kumar, 2016; Mitchell *et al.*, 2011; Thijssens *et al.*, 2015). Jones (1995) has tried to enhance and enrich Freeman’s Stakeholder Theory by offering an *Instrumental Stakeholder Theory* “built on an integration of the stakeholder concept, economic concepts (agency theory, transaction cost economics, and team production theory), insights from behavioural science, and ethics. It focuses on the contracts (relationships) between the firm and its stakeholders and posits that trusting and cooperative relationships help solve problems related to opportunism. Because the costs of opportunism and of preventing or reducing opportunism are significant, firms that contract on the basis of trust and cooperation will have a competitive advantage over those that do not use such criteria” (Jones, 1995, p. 432). Relying on Jones’s theory, which is focused on the contract/relationship between the company and the stakeholder groups, we would like to develop and investigate the relationship of cooperation and trust between these two main actors and the possible advantages for both of them. Moreover, we wish to explore the direct and indirect effects of this relationship on companies’ disclosure, in particular on the underlying materiality process. In this respect, we consider the stakeholder engagement process and the effects that it could have on the application of the materiality principle, on the process of materiality analysis and on the planning of non-financial reports (Figure 1).

Figure 1 – Theoretical framework model



3. Empirical research: hypothesis, sample, model and results

Starting from the premises just illustrated, and in particular from the two fields of study mentioned above (determinants of materiality and process of materiality analysis connected to the expectations of stakeholders), this paper aims to extend the current knowledge on the materiality theme linking these two important research topics. In this sense, we would like to fill the gap regarding the possible key effects that the stakeholder engagement process could have on the application of the materiality principle in the preparation of a CSR report. The need to meet as much as possible the expectations and needs of all stakeholders has been widely studied and investigated; but the process of engagement of these stakeholders has not been thoroughly analysed as a possible essential and decisive aspect in affecting decisions about the materiality processes and the consequences of this principle on the report itself. The Stakeholder Theory guides us in considering all the possible and different actors with which the company must deal in relating to CSR issues. The Instrumental Stakeholder Theory guides us in our discussion of the relationship between the company and its stakeholders and, in particular, with regard to how the company and its stakeholders may relate to favourable results for both of them.

We study the situation of Italian companies. Italy is an interesting case study because of the high number of companies that have voluntarily published a social and environmental report in the last few years (Balluchi & Furlotti, 2013). It is also interesting to consider Italian companies because in Italy, from the 2017 financial year onwards, Legislative Decree No 254/2016 requires “public interest entities” to integrate statutory financial statements with a disclosure of environmental, social and governance strategies. CSRD is thus moving from a voluntary to a legislative perspective.

Until the 2016 financial year, medium and large firms in Italy could opt to disclose CSR at their own discretion in stand-alone reports. Beginning in 2017, all large public-interest companies have been required to publish a non-financial statement (NFS) describing policies, risks and results related to corporate social responsibility and sustainability. The Decree represents an important innovation in the communication of information related to CSR that affects companies of a significant size and is an important and encouraging sign pointing to the promotion of sustainability disclosure.

Companies must report information about social and environmental strategies, about employees and human rights and about anti-corruption strategies. They must draw up their report on the basis of recognized national or international reporting standards and guidelines.

With regard to communication, the Decree establishes that the declaration of a non-financial nature may be communicated in three different ways: it may be an integral part of the directors’ report, it may constitute a separate report, or it may be an integral part of the annual report. In all cases, the company must choose what information to provide in the document regarding the issues indicated in the Decree.

The principle of materiality and the involvement of stakeholders to understand what material information is to be reported are thus even more relevant, as they contribute to the correct preparation of documents required by law. Furthermore, it is interesting to examine whether the different reports are characterized by a different level of application of the principle of materiality.

Methodology

Aims. Focusing on Italian “public interest entities” that have drawn up a non-financial report (sustainability report, integrated report or non-financial statement ex Decree No 254/2016) for the 2017 financial year, the specific aim of this paper is to analyse the level of the application of *materiality* (as a core principle in the accountability process). In particular, we aim to

analyse:

- the level of application of the materiality principle (companies that recall the principle in the document) and the spread of the materiality matrix;
- the application level of the principle, as measured through an ordinal categorical variable;
- the possible relationship between the application of the materiality principle and the engagement of stakeholders, with a preliminary focus on various industries characterized by different types of stakeholders and on the application of GRI and/or IIRC guidelines.

Hypotheses. The research hypotheses to be verified by empirical analysis of the collected data are as follows.

Hypothesis 1 - Industry

There is a relationship between industry and the materiality principle's level of application.

A research path has investigated the relationship between voluntary disclosure and industry (Fasan & Mio, 2017): these studies have highlighted how public opinion pressure, industry regulation and stakeholder opinion influence how companies disclose their performance (Brammer & Pavelin, 2006). Other studies have analysed the relationship between voluntary disclosure and being part of an environmentally sensitive industry (Hassan & Ibrahim, 2012; Patten, 2002) and have confirmed industry as a key determinant of non-financial disclosure. In line with the abovementioned studies, our research intends to further develop the results already mentioned emerging from the literature, specifically investigating the relationship between the industry and the level of application of the principle of materiality. In fact, belonging to a sector, in addition to influencing the choice to make a CSR disclosure, can influence the choice of the material issues that must be described in greater detail in the report.

Hypothesis 2 - Application level of GRI standards or IIRC guidelines

There is a relationship between the level of application of GRI/IIRC guidelines and the materiality principle's level of application.

Although the GRI guidelines and the IIRC framework define well-structured and detailed guidelines regarding the construction of a social-environmental report, the issues to be considered, the elements and KPIs necessary for proper disclosure, the stakeholder involvement and the correct and broad application of the principle of materiality, their real impact remains unclear. Some studies have discussed the role and effects of the application of the GRI Standards guiding principles without reaching any agreed-upon conclusions (Brammer & Pavelin, 2008; Fernandez-Feijoo *et al.*, 2014; Michelon *et al.*, 2015; Moratis & Brandt, 2017). Given the importance of these guidelines and the lack of clarity achieved by previous studies on the real impact they have on the quality of disclosure and on the effective application of several key reporting principles, we intend to more thoroughly investigate this issue. We expect the level of application of GRI Standards and IIRC guidelines to have a significant and positive relationship with the level of application of the materiality principle, due to the importance they give to the application of the principle and to the practices of good voluntary reporting.

Hypothesis 3 - Stakeholder engagement

There is a relationship between the spread of stakeholder engagement in the materiality analysis process and the materiality principle's level of application.

Many studies have highlighted the significant importance of involving all stakeholders in the production of a voluntary report and in underlying processes (Font *et al.*, 2016; Freeman, 1984; Harrison & Wicks, 2013; Pfitzer *et al.*, 2013; Wood, 1991). Calabrese *et al.* (2016) point out that a major problem of CSR reporting is the deficiency of completeness in covering all aspects

that are material for the stakeholder (see also de Villiers & van Staden, 2010; O'Dwyer *et al.*, 2005). Companies are required to recognize a clear set of stakeholder expectations (Unerman & Bennett, 2004). Stakeholders Theory (Freeman, 1984) and Instrumental Stakeholder Theory (Jones, 1995) clarify the crucial role of all the stakeholders for a company's success and of a good relationship between the company and the stakeholder groups. In light of the relevance of the stakeholders' engagement for good CSR disclosure, as evidenced in the literature, we expect that a wide and as direct as possible involvement of different categories of stakeholder can have a significant relationship in achieving good levels of non-financial information quality and thus in high levels of materiality application.

Sample and method. The sample under analysis is composed of Italian "public interest entities" that have published a non-financial report for the 2017 financial year (official list of 31 August 2018 and updated on 31 December 2018 available on CONSOB – National Commission for Companies and Stock Exchanges website). The sample does not include companies belonging to the banking, finance and insurance sectors; this is because of the different characteristics of their equity and because these entities are not comparable with firms of other industries (La Porta *et al.*, 2002). Our first sample was composed of 210 companies and after the exclusion of companies belonging to the banking, finance and insurance industries, which included 160 companies. Subsequently, 4 companies were excluded because their non-financial statements were not available online or recoverable, and 4 other companies because it was not possible to find some data necessary for the analysis. Overall, the empirical analysis has been carried out on a sample of 152 valid observations. As highlighted above, it is interesting to consider Italian companies because in Italy, from the 2017 financial year onwards, Legislative Decree No 254/2016 requires "public interest entities" to integrate statutory financial statements with a disclosure of environmental, social and governance strategies. CSRD is thus moving from a voluntary to a legislative perspective. The principle of materiality, the involvement of stakeholders, and the application of GRI/IIRC guidelines are even more relevant to understanding what material information must be reported and to contributing to the correct preparation of documents required by law. All reports have been subjected to a manual content analysis to detect all the necessary elements for the analysis and to construct the variables of the statistical model. The content analysis method is often considered within CSR research as a quantitative technique to collect data from textual materials (Abbott & Mosen, 1979; Guthrie *et al.*, 20014; Guthrie & Abeysekera, 2006). Content analysis is a method of codifying written text into various groups or categories based on selected criteria (Krippendorff, 1980; Unerman, 2000). The analysis was carried out individually by the three authors and cross-checked at the end.

Variables

Dependent variable (Fasan & Mio, 2017):

Materiality Relevance (MatRelevance)

This variable measures the level of application of the materiality principle and thus the degree of breadth and depth of implementation of the materiality analysis process. It aims to capture numerically through a hierarchical scale from 1 to 6 how much the principle of materiality has been considered and applied by the company. To do this, the company's reports were read, in particular the methodological note, the section on materiality analysis and the relative matrix. In these documents, companies specify how far they have gone in the application of this principle and what types of processes they have implemented to ensure its correct application. By reading the paragraph on the matrix (if present) and in particular on the topics that have been found to be relevant, it is possible to understand how much these have been examined in

depth in the reporting process and how much the company has concentrated on the same topics in order to provide complete, relevant and exhaustive information.

The six evaluations for this variable are:

- 1) no reference to materiality;
- 2) the report only states that materiality was a principle followed for the production of the report;
- 3) the report includes a brief discussion of what is considered to be material;
- 4) beyond the discussion of what is material, the report communicates the material issues emerging from the analysis;
- 5) the description of the process and its results are described in a higher degree of detail;
- 6) the report devotes significant attention to the materiality issue.

The classification was performed by the authors individually and manually for each examined report to achieve a more objective result and to reduce possible errors. According to the content analysis methodology, the ordered categorical variable is the result of the transformation of qualitative data to quantitative analysable data (Berelson, 1952). In this sense, we follow a widely used methodology in the field of research on disclosure quality and, in general, on voluntary disclosure (Wiseman, 1982; Guthrie *et al.*, 2004; Cormier & Magnan, 2003; Al-Tuwaijri *et al.*, 2004; Aerts & Cormier, 2009).

Independent variables:

▪ *Industry*

Classification of companies in one of the 10 industrial divisions of the US Standard Industrial Classification (SIC). There are seven USSIC industrial divisions belonging to the companies analysed: C) Construction; D) Manufacturing; E) Transportation, Communications, Electric, Gas, And Sanitary Services; F) Wholesale trade; G) Retail trade; H) Real Estate and Holding; I) Services. The industries in which companies operate have been obtained from AIDA Bureau van Dijk database.

➔ *Environmentally sensitive industries (ESI)*

Membership to one of the seven ESI. Cho & Patten (2007) identify as ESI the following industries (based on the first two numbers of the US SIC classification): 10 (mining), 13 (oil exploration), 26 (paper), 28 (chemical and allied products) 29 (petroleum refining), 33 (metals), 49 (utilities). This is a dichotomous variable: “0” for no membership to one of ESI and “1” for the membership to one of ESI.

▪ *IIRC directives and Integrated Report (IIRC)*

This is an ordered categorical variable that classifies the level of application of the IIRC reporting principles and the publication of an integrated report (within the International IR Framework) in four categories: 1) absence of any references to the integrated report and the IIRC; 2) a stated goal of shortly producing a first integrated report and/or partial application of the principles of the International IR Framework; 3) presence of an “integrated report” but coexisting with a traditional non-financial report (sustainability, social, environmental); 4) presence of an integrated report in accordance with the IIRC principles. The data on the level of application of the principle has been collected analysing single reports, in particular the paragraph on the Methodology at the beginning or at the bottom of the report.

▪ *GRI guidelines (GRIlevel)*

This is an ordered categorical variable that classifies the level of application of the GRI reporting principles (version 3 and 4) in three categories: 1) absence of application level declaration or application level C in version 3; 2) application level B in version 3 and “accordance-core” in version 4; 3) application level A in version 3 and “comprehensive” in version 4. The data on the level of application of the principle has been collected analysing

single reports, in particular the paragraph on the Methodology at the beginning or at the bottom of the report.

- *Stakeholder engagement (StakeEngage)*

Stakeholder engagement level in the materiality analysis process measured through the extent and the type of events or engagement actions analysed through careful reading of the reports, especially sections on the process of materiality analysis and the relationship with the stakeholders. This is an ordered categorical variable that classifies stakeholder engagement in the materiality analysis process in three categories:

- 1) a statement of no involvement or lack of statements about it;
- 2) indirect and / or partial engagement of reference stakeholders through remote activities such as surveys, questionnaires, interviews and individual talk, analysis of generic information gathered by external companies, analysis of complaints / suggestions, analysis of the press review;
- 3) direct and/or wide involvement of stakeholders through direct and participative activities such as focus groups, dedicated events, meetings and workshops.

Control variables

In addition to the two traditional and essential control variables of income (measured by ROA) and company size (measured by Total Assets), and to be sure to capture and isolate the main aspects that could affect the materiality level of application (i.e. the materiality analysis), we have selected and inserted the following four aspects in the creation process of non-financial reports (to deepen the control variables used in CSR studies see Cahan *et al.*, 2015 & 2016 and Martínez-Ferrero & García-Sánchez, 2017):

- *Past experience in voluntary disclosure (Experience)*

It is a dichotomous variable: “0” for the absence of any previous experience in non-financial reporting and “1” for the presence of a previous experience in publishing any CSR report. Data has been collected from the introduction of the reports and / or through the report archives of the companies’ websites.

- *Review of the report (Assurance)*

Presence of a certificate assurance process. This is a dichotomous variable: “0” for the absence of an assurance and “1” for the presence of assurance by a certified entity that has issued a compliant certificate. Data was obtained from the analysis of the individual reports where it is always stated whether the assurance is present or not and in which the auditors’ report is attached.

- *Level of indebtedness (Leverage)*

The level of firm leverage represents the debt (or non-compliance risk) measured as the ratio of total debt to total asset. Data have been obtained from AIDA Bureau van Dijk database.

- *Visibility (FTSE_MIB)*

It is a dichotomous variable: “1” if firm is in the FTSE MIB index at August 2018, and “0” otherwise. The presence in FTSE MIB index is used as a visibility indicator because it is the most significant stock index of the Italian Stock Exchange. It is the basket that contains the shares of the 40 Italian companies, even if they have their registered office abroad, listed on the MTA with the highest capitalization, free float and liquidity. It represents approximately the 80% of the capitalisation of the Italian stock market. Data was obtained from the official monthly report of the Italian Stock Exchange

Results

From the first part of the analysis carried out on the collected data, it was found (Table 1) that in 99% of the 152 total observations, the materiality principle has been applied. A graphical representation of the outcome of the materiality analysis process (materiality matrix) has been used in fewer cases, 66% of the total. In several observed cases, the report has been prepared considering the materiality and results obtained from the underlying internal process, but the whole is not graphically formalized by a suitable matrix.

Table 1. Frequencies of Materiality and Materiality Matrix

	Materiality		Materiality Matrix	
	Frequency	Percent	Frequency	Percent
No	2	1	52	34
Yes	150	99	100	66
Total	152	100	152	100

Table 2. Frequencies Statistics of dependent variable

	MatRelevance
Mean	4.204
Std.Dev.	1.274
Minimum	1.000
Maximum	6.000
N	152

The first data analysis of the dependent variable (Table 2) provides an indication of the average level of application of the principle of materiality according to the scale of evaluation of the dependent variable MatRelevance. On average, the companies in the sample achieved a rating of 4.2 in a range of 1 to 6, a first indication that not only is the principle almost always applied, but that it is also applied in detail and with a good deal of attention to material issues.

Table 3 shows the main descriptive statistics of all other variables included in the analysis.

Table 3. Frequencies Statistics of other variables

	Total Assets	ROA	Experience	Assurance	Leverage	FTSE_MIB	ESI	IIRC	GRIlevel	Stake Engage
Mean	13.395	0.019	0.441	0.980	0.520	0.132	0.138	1.066	1.658	2.204
Std.Dev.	1.876	0.081	0.498	0.139	0.229	0.339	0.346	0.410	0.565	0.740
Minimum	6.310	-0.490	0.000	0.000	0.020	0.000	0.000	1.000	0.000	1.000
Maximum	18.140	0.230	1.000	1.000	1.360	1.000	1.000	4.000	3.000	3.000
N	152	152	152	152	152	152	152	152	152	152

According to the correlation matrix (Table 4), we underline the positive (and significant at the 1% level) correlation of the GRIlevel variable and StakeEngage variable with the dependent variable.

Table 4. Nonparametric Correlation Matrix (Spearman's rho)

	Mat Relevance	Total Assets	ROA	Experience	Assurance	Leverage	FTSE_ MIB	ESI	IIRC	GRlevel	Stake Engage
MatRelevance	1										
TotalAssets	0.052	1									
ROA	-0.011	-0.136	1								
Experience	0.090	0.388***	-	1							
Assurance	0.023	0.007	0.039	-0.065	1						
Leverage	-0.008	0.003	0.005	0.029	-0.126	1					
FTSE_MIB	0.102	0.485***	0.015	0.282***	0.055	-0.018	1				
ESI	-0.079	0.150*	0.129	0.182**	-0.217***	0.223***	0.013	1			
IIRC	0.104	0.251***	-	0.185**	0.023	-0.030	0.422***	0.055	1		
GRlevel	0.344***	0.218***	-	0.224***	0.211***	-0.046	0.186**	0.011	0.213***	1	
StakeEngage	0.270***	0.152*	0.031	-0.042	0.089	-0.022	0.094	-0.059	0.123	0.397***	1

* p<0.10

** p<0.05

*** p<0.01

To test the first hypothesis of this study, we have performed an analysis of the differences between the mean values of the dependent variable in the seven industries and the averages in the rest of the sample. These differences have been subjected to a t-test (Table 5) where the null hypothesis is that the mean values of the dependent variable in the seven industries are equal to the averages of the same values in the rest of the sample.

Table 5. Two-group mean-comparison test: Materiality in different industries

Industry	MatRelevance			
	Industry mean	Rest of sample mean	Difference	T-test
C) Construction	4.500	4.187	0.312	-0.675
D) Manufacturing	4.130	4.245	-0.115	0.533
E) Transportation, Communications, Electric, Gas, And Sanitary Services	4.500	4.141	0.378	-1.362
F) Wholesale Trade	4.250	4.201	0.049	-0.105
G) Retail Trade	4.286	4.200	0.086	-0.173
H) Real Estate and Holding	4.273	4.185	0.088	-0.350
I) Services	3.647	4.274	-0.627	1.931**

* p<0.10

** p<0.05

*** p<0.01

We learn from the analysis that companies in the Services industry (I) disclose non-financial reports with a lower level of materiality: they have obtained a MaterialityRelevance rating close to 3.6, as opposed to the rest of the industries, which exceed a score of 4. The difference is significant at the 5% level.

This first partial result is in line with the previous literature on the differences in distinct industries (e.g., see Brammer & Pavelin, 2006).

Proceeding with the verification of all the research hypotheses, we have built a statistical model that includes all independent and control variables. The complete model is the following:

$$\text{MaterialityRelevance} = \alpha + \beta_1 \text{TotalAssets} + \beta_2 \text{ROA} + \beta_3 \text{Experience} + \beta_4 \text{Assurance} + \beta_5 \text{Leverage} + \beta_6 \text{FTSE_MIB} + \beta_7 \text{ESI} + \beta_8 \text{IIRC} + \beta_9 \text{GRllevel} + \beta_{10} \text{StakeEngage} + \varepsilon$$

Table 6. Ordinary Least Squares (OLS) Regression

MatRelevance (OLS)			
TotalAssets	-0.106 (0.068)	IIRC	0.057 (0.268)
ROA	1.147 (1.400)	GRllevel	0.649*** (0.210)
Experience	0.187 (0.221)	StakeEngage	0.283** (0.147)
Assurance	-0.448 (0.744)	Intercept	4.257 (1.310)
Leverage	-0.149 (0.481)	Observation	152
FTSE_MIB	0.141 (0.369)	F	2.41***
ESI	-0.816** (0.374)	R2	0.22

* p<0.10

** p<0.05

*** p<0.01

Table 6 shows the results of the regression analysis that has been performed to determine the possible relationship between the independent variables and the dependent variable. The OLS regression is significant at the 1% level and has a R-squared of 0.22. There is a significant and negative relationship (at the 5% level) with the ESI independent variable: this result further confirms Hypothesis 1, according to which Industry has a strong relationship with voluntary disclosure and the materiality principle's level of application. There is also a significant and positive relationship (at the 1% level) with the GRllevel independent variable: this result is a partial confirmation of Hypothesis 2, according to which the level of application of GRI guidelines has a relationship with the materiality principle's level of application. Lastly, the Stakeholder Engagement variable has a significant and positive relationship (at the 5% level): this result confirms Hypothesis 3, in which stakeholder engagement plays an important role in defining and increasing the materiality level.

We have checked all the necessary assumptions and the possible obstacles to correctly run an OLS regression: linear relationship, normality, auto-correlation, multicollinearity, homoscedasticity. We have also treated all scale values with a logarithmic transformation to reach a normal distribution of values.

Discussion

The results of the analyses confirm, first how industry plays a key role in decisions regarding the quantity and quality of non-financial disclosure of a company. According to previous studies on the subject (Cooke, 1992; Hassan & Ibrahim, 2012; Patten, 2002), industry significantly influences the board of the company on decisions about the type of disclosure to be published and about the application (or non-application) of the materiality principle (but also about its level of application and thoroughness). Direct and indirect external pressures, social-environmental impact of the core business, stakeholder expectations, and the behaviour of competing companies play a crucial role in management choices regarding voluntary disclosure and its underlining process. More specifically, the analysis has shown that in the case of Italian companies that publish sustainability and produce non-financial reports compliant with the new Legislative Decree No 254/2016, the membership in a specific industry influences strategic choices regarding non-financial disclosure, even in the presence of binding national legislation.

This result is new and interesting: despite the presence of a law in this regard, companies belonging to different industries have different behaviours in their reporting processes, and this should be taken into account by the legislator, who should act accordingly to fill some possible gaps and encourage virtuous behaviour. Specifically, in the *Services* industry the results of the empirical analysis have suggested that companies in this industry tend to apply less thoroughly the principle of materiality and the underlying process in their non-financial reports. The less direct and impactful connection of this industry with social and environmental issues, and therefore the consequent lower pressure and demand from civil society and stakeholders, could be the cause of this aspect. Companies in this industry seem to feel a lesser need to investigate and understand what are the issues of greatest interest to the different categories of stakeholders and to thoroughly examine them and provide information about them in the non-financial document they will publish. The ESI variable analysis has underlined this key role of industry, but the type of relationship (negative) with the materiality principle level of application contrasts with previous studies on ESI and voluntary disclosures: Hassan & Ibrahim (2012) and Patten (2002), for example, have found a significant and positive relationship between belonging to one of these industries and the tendency to voluntary disclosure. We have found that ESI companies tend to apply the principle of materiality less thoroughly. This contrast may be due to the presence in our sample of only 21 companies belonging to any of the seven ESI, or to previous studies not having focused on materiality. However, one plausible explanation for this phenomenon is that companies belonging to these ESI are very familiar with the highly problematic issues about which civil society and all stakeholders press to obtain information and details. Companies that, for example, belong to the world of energy production/dealing are constantly under pressure from governments, activists, associations and customers for a greater commitment to environmental protection and for a greater transparency on the real impact of the activities carried out and the processes put in place to improve themselves. This could mean that these companies do not feel the need to involve all categories of stakeholders to understand the main issues, as they are already well aware of and prepared on the relevant issues.

Regarding our second research hypothesis, the results of the statistical analysis show that the level of application and implementation of the GRI guidelines has a significant and positive relationship with the level of application of the materiality principle. Previous studies on the topic have deepened the role and effects of the application of the GRI Standards guiding principles without reaching any agreed-upon conclusions. This work clearly confirms how the GRI guidelines can have a considerable and positive impact on processes related to the preparation and production of a social and environmental report. The Global Reporting Initiative in its Standards favours and guides the increased application of the principle of materiality and a broad process of stakeholder participation in this process. It is interesting to see that even in the case of Italian companies recently required to produce a report containing non-financial information, the GRI guidelines still play a key role in determining particular strategic choices and processes related to reporting. A high level of implementation of these international guidelines enables companies to develop a wider and higher quality of materiality analysis process. It is important to note that the application of GRI standards is not enough to achieve a good quality reporting and materiality process but that it accounts for the depth and level of detail at which these guidelines are applied.

As confirmation of the third research hypothesis, the results of our empirical analysis have found that *stakeholder engagement* level is strongly related, in a positive relationship, to the level of implementation of the materiality principle. This result also highlights and confirms, even from a quantitative point of view, an important aspect and adds significantly to the literature about voluntary disclosure and materiality principle. Implementing a solid and extensive stakeholder engagement process is a necessary condition, but not a sufficient condition, to reaching a significant degree of application of the principle of materiality. This

strong relationship is not obvious: many companies have active materiality analysis processes without planning any type of stakeholder engagement, although most of them report in their voluntary disclosure documents that they have considered the needs and issues deemed important by reference stakeholders (often through interaction with companies specialized in public opinion analysis or analysing a press review or simply obtaining the management's opinion on it). The results of the analysis show that the more a company commits itself to actively, directly and as widely as possible involving various stakeholders, the more the company will be able to implement a process of quality materiality analysis and thus produce a useful report that meets the needs of the different categories of stakeholders. Actively and diffusely involving stakeholders before and during materiality analysis allows the company to produce a report that addresses issues considered relevant by most stakeholders and that succeeds in filling (or at least reducing) the information gap that often exists between the company and those interested in the company itself. A strong push towards this process of engagement comes and can be achieved even further by the standard setter of non-financial reports (primarily IIRC and GRI). The new IIRC directives and the GRI Sustainability Reporting Standards (2016) place greater emphasis on stakeholder engagement and its underlying process. On the other hand, an increasingly widespread and broad stakeholder engagement by the companies may influence and push, over time, the same standard setter to further implement this important aspect in reporting principles. In light of the theoretical pillars taken as a reference for this research, it is important and significant that both the hypothesis concerning the industry and the application of the GRI principles are confirmed. These are two factors linked to the concept of stakeholder engagement: they are, from a certain point of view, a possible precondition or, in any case, a disturbing or facilitating element. The process of stakeholder engagement, its importance and the decisions taken by companies in this regard are probably influenced and linked by the industry sector in which they operate and by whether or not they follow the Global Reporting Initiative guidelines. The fact that these two factors are significantly related to the level of application of the materiality principle is a prelude to and is consistent with, the conclusions regarding stakeholder involvement in relation to the materiality principle.

Conclusion

The paper is focused on the application of the materiality principle in the compulsory disclosure of Italian listed companies for the 2017 financial year (see Legislative Decree No 254/2016). Following an analysis of the spread of the application of the principle and its materiality matrix, the study has continued to statistically test the existence of a relationship between the application level of the principle, the membership to a specific industry, the application level of GRI/IIRC guidelines and directives, and the process of *stakeholder engagement*, controlling for some variables that could have an impact on the dependent variable.

The quantitative analysis has shown that stakeholder engagement (and the indirect related variables of industry membership and GRI application level) plays a fundamental role in the report production process, particularly in the materiality analysis itself.

By combining the *Stakeholder Theory* and *Instrumental Stakeholder Theory* and by examining the latest international studies on these issues, this study confirms industry as an important aspect and adds the application level of Global Reporting Initiative Standards as a decisive aspect. These first results then lead to a consideration of the stakeholder engagement process as essential in relation to the quality of the materiality analysis process. This research has highlighted that without a large and mostly direct stakeholder engagement, companies are not able, in most cases, to reach high levels of implementation of the materiality principle; therefore, these companies cannot enjoy proper and well-targeted communication. Without the widest possible stakeholder engagement, a company is unable to implement a process that takes

into account all aspects relevant for the stakeholders themselves and therefore cannot speak with them in a mutually satisfactory manner. Moreover, this process is preceded in the perspective of materiality analysis (and therefore facilitated or in any case significantly influenced) by belonging to a specific industry and by the application of GRI principles.

This research also has a direct and immediate utility for international bodies defining standards and guidelines on non-financial reports by making high levels of stakeholder engagement one of their principal goals and for companies that choose to produce voluntary reports. A further important motivation stemming from these findings is found for stakeholder groups who are struggling to be heard and who are involved in the decision-making and information processes of companies to which they are linked. Their request is well founded and should be taken seriously by the management; without their real engagement, a fundamental element in the processes of transparency and disclosure is missing. This research work is also useful and interesting for practitioners involved in non-financial reporting processes, in collaboration with international and national standard setters, in strategic and operational business planning regarding materiality analysis and processes related to stakeholder involvement at multiple levels. In general, the novelty of this academic research, useful for practitioners but not limited to them, is that it provides a clear and exhaustive picture of the very sparsely investigated relationship between stakeholder engagement and the levels of application of materiality that can be obtained with clear and tangible practical consequences on social and environmental reports. The above-mentioned and discussed results help us understand the practical and tangible consequences of the different levels of stakeholder involvement (also taking into account the indirectly related industry aspects in terms of membership and the adoption of GRI principles) on the non-financial reporting process, via the important and impactful materiality assessment process.

As we close our paper, we must focus on some of the limitations of our research:

- 1) This paper analyses companies in only one country (Italy); the results may therefore reflect the characteristics of the country, and the influence directly and indirectly exerted by the legislation and customs of resident companies. However, it is important to point out that most of the companies in the sample, even if based in Italy, have a broad international breath, operating in different countries around the world and with affiliates in many countries. Even though their headquarters is in Italy, pressures by different stakeholder groups and public opinion in different countries could partially resolve the single-country issue.
- 2) This paper analyses only one year (2017); however, although this year is a significant year, as it was the first year in which the new national legislation on non-financial reporting was enforced.

We believe that future studies will confirm the results of our study, in *primis* by broadening the analysed countries and in *secundis* by expanding the analysed time period. We emphasize the importance of new research focusing on the internal dynamics of the implementation of materiality analysis, on the underlying processes, and in particular on the effects of stakeholder engagement on these companies' processes. Research on how to define a stakeholder engagement process capable of achieving the results detailed herein would be particularly useful and interesting, as would a study on how this could be implemented within companies' dynamics.

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