

Sustainability Performance Indicators and Non-Financial Information Reporting Evidence from the Italian Case

Domenico Raucci and Lara Tarquinio

*Department of Economic Studies, "G. d'Annunzio" University,
65127 Pescara, Italy;*

ABSTRACT

Non-financial reporting is a growing topic, and the adoption of the EU Directive 2014/95/EU on non-financial information (NFI) is increasing the use of this reporting. One of the most distinctive elements of guidelines and standards that are widely used to draw-up reports on NFI is sustainability performance indicators (SPIs). SPIs can provide a significant value-added to non-financial corporate communication, and they are useful tools to support internal decision-making processes. The purpose of this study is to examine the effects produced on SPIs disclosure by the entry into force of the Italian Decree implementing the Directive on NFI. Content analysis method is used to analyze indicators disclosed by Italian companies before and after the adoption of the Decree. Findings show that each category of SPIs was largely used by the companies of our 2012 sample but a reduction of the quantity of indicators disclosed was documented in 2017. Therefore, after the introduction of mandatory disclosure of NFI, companies seem to focus only on indicators considered more "relevant" according to the Directive. This research represents one of the preliminary analysis on the adoption of the Directive in Italy and on its first effects on NFI reporting practices.

ARTICLE INFO

Keywords:
sustainability performance indicators; non-financial information reporting; GRI; EU Directive 2014/95/EU; Legislative Decree 254/2016

Article History:
Received: 30 Dec 2019
Accepted: 21 Feb 2020

© 2020 The authors. Published by CADDO GAP Press USA. This is an open access article under the Creative Commons AttributionNonCommercial 4.0

1. INTRODUCTION

During the last three decades, corporate responsibility (CR) reporting has become standard practice for companies around the world (KPMG2017). Many guidelines and standards have been developed to disclose non-financial information (NFI), namely: GRI guidelines and Standards the most popular framework for CR reporting GBS standard used by some Italian companies, often together with Global Reporting Initiative (GRI); SASB industry standards used by important international companies, etc. One of the common elements of these guidelines is the use of Sustainability Performance Indicators (SPIs).

SPIs provide significant value-added to economic, social, and environmental corporate communication (Schaltegger and Burritt2000;Tarquinio et al.2018). Indeed, they are useful tools to support internal decision-making processes and to control companies' performance, also with regard to their socio-environmental commitments (Adams and Frost2008;Jasch2009;Skouloudis et al.2010;Gaudencio et al.2018). Indicators are suitable for synthetically expressing the complexity of the dynamics of business management and for operationalizing its sustainable development approach (Wilburn and Wilburn2013). Moreover, SPIs are effective for transforming some qualitative information into quantitative, thus increasing the potential of comparison between companies of any type, sector, or country (Olsthoorn et al.2001;Daub2007). Therefore SPIs can usefully support the disclosure of sustainability information to stakeholders (Adams and Frost2008;Daub2007;Mio2010; Fernandez-Feijoo et al.2014;Lin et al.2014;Boiral et al.2019) and represent one of the most powerful means for communicating relevant companies' NFI in a synthetic, structured, and comparable way.

Although our analysis refers to the sustainability indicators disclosed by the companies that draw up a sustainability report (SR) using the GRI framework, it seems appropriate to point out that many SPIs have been developed at national and international levels as part of general frameworks. Special attention to the use and construction of SPIs has been recently reserved by the UN, which has dictated indicators specifically related to SDGs and their targets (UNSTATS2019). A set of circular economy indicators broadly based on the principles of

‘reduction, reuse, and recycling’ are also considered significant tools to measure “resource output, consumption, and utilization, as well as waste, pollution and emissions” (Murray et al.2017, p. 374).

In more general terms, it can be observed that in the field of sustainability, during the last decade, there has been an increase in SPIs that Gasperini and Zambon(2017, p. 2) even defined as “excessive” if compared to the actual needs of companies. This need for synthetic and structured information probably arose from increasing attention towards the sustainable value generation processes (and therefore of value chains) of products/services that are increasingly dependent on intangible and strategically important resources including those relating to environmental social and governance issues (Gasperini and Zambon2017). Therefore the construction of SPIs can provide companies with relevant and comparable measures, useful for supporting the management of corporate socio-environmental issues. Furthermore, the production and communication of a comprehensive balanced accurate and reliable SPIs system can be considered suitable to produce high-quality economic, environmental and social information (Fernandez-Feijoo et al.2014;GRI2017; Boiral et al.2019) thus contributing to the improvement of the stakeholders’ perception of transparency and quality of reports disclosing these issues.

The adoption of a minimum standardized set of NFI and the construction of “non-financial key performance indicators relevant to the particular business” (EU Directive, Article 1, L. 330/5) is requested by the EU Directive 2014/95/EU (Directive) that obliges large entities of public interest to disclose financial information. To support organizations in providing the disclosure of “high quality, relevant, useful, consistent and more comparable non-financial (environmental, social and governance-related) information in a way that fosters resilient and sustainable growth and employment, and provides transparency to stakeholders” (European Commission2017, p. 4) the EU approved the EU Guidelines (European Commission2017). The EU Guidelines document proposes a list of “non-binding guidelines methodology for reporting non-financial information, including non-financial KPIs, general and sectoral, with a view to facilitating relevant, useful, and comparable disclosure of non-financial information by undertakings” (European Commission2017, p. 3).

As highlighted before, in recent years, many guidelines have been developed to support companies in disclosing sustainability information to stakeholders. Among these guidelines and standards, since the production of the first guideline version (issued by the GRI in 2000), the GRI has given a central role to the use of SPIs in the companies’ SRs. The last G4 Guidelines (GRI2013) and the GRI Standards (GRI 2016) have strengthened the importance attributed to indicators and have placed great emphasis on the materiality principle. In particular, the G4 guidelines have proposed the enrichment of indicators through the inclusion of anti-corruption and gender policies; the GRI standards have rationalized the indicators system in order to reduce duplication and to improve the “logical flow of the Standards” (GRI2017). Therefore, it is not surprising that among the guidelines and standards proposed by the EU, there are also those indicated in the GRI, considered the most authoritative and widely recognized reporting framework in the international arena and the most widely used by a large majority of organizations in many countries (Marimon et al.2012;Boiral2013;KPMG2017). In this way, even the first studies on the adoption of the EU Directive in Europe have shown that GRI standards and guidelines are widely used for mandatory NFI reporting (Venturelli et al.2017;Manes-Rossi et al.2018; Aureli et al.2019;Sierra-Garcia et al.2018;Muserra et al.2019). The adoption of the GRI guidelines and standards, and in particular of SPIs, can contribute to operationalizing the requirements of the law transposing the Directive into the European national context, and thus producing high-quality economic, environmental, and social information in SRs (Guthrie and Farneti2008;Skouloudis et al. 2010;Gaudencio et al.2018;Tarquinio et al.2018).

However, the first research on the adoption of Directive 2014/95/EU in Europe is showing contradictory results, especially on the issue of whether mandatory reporting guarantees an increase of the level of NFI disclosed (Luque-Vilchez and Larrinaga2016;Lock and Seele2016;Habek and Wolniak 2016;Mion and Adai2019). With reference to Italian companies, numerous studies have evaluated the information gap and, consequently, the adjustment required by the adoption of the Directive with reference to information disclosed by companies before the adoption of the law (Venturelli et al.2017; Carini et al.2018;Manes-Rossi et al.2018;Doni et al.2019).Mion and Adai(2019) have analyzed the contents of NF reports drawn up by Italian and German companies, and have documented significant differences in the SRs quality before and after the entry into force of Directive 95/2014. Thus far, there are no studies that have carried out a longitudinal analysis of the quantity of the economic, environmental, and social information disclosed by the companies that have continuously adopted the GRI guidelines before and after the adoption in Italy of the Directive. Therefore, in order to evaluate the effects of the adoption in Italy of the Legislative Decree 254 of 30 December 2016 (Decree), transposing the Directive into Italian law, and with the aim to bridge the highlighted gap in the literature on NFI, our research aims to explore the indicators disclosed by companies listed on the Italian Stock Exchange and producing a GRI-based SRs. Considering the exploratory and descriptive nature of the research, the analysis was performed considering indicators disclosed in CR reports in 2012 and 2017, that is, before and after the adoption of the Decree.

In particular, we aimed to investigate:

- The SPIs used by companies to disclose their sustainable development approaches;
- the effects produced on SPIs by the entry into force of the Decree.

The results of our research may be useful for detecting how Italian companies reacted to the adoption of the Directive. Our study may contribute to the research field on SPIs and on their ability to operationalize the companies' sustainability commitments.

The remainder of the paper is structured as follows: Section 2 provides a theoretical background on the value of SPIs to support NFI reporting, Section 3 describes the role of Indicators in the GRI reporting framework and their value for mandatory NFI reporting, Section 4 describes the sample, method, and empirical results. The final section offers our concluding remarks.

2. THE CONTRIBUTION OF SUSTAINABILITY PERFORMANCE INDICATORS IN OPERATIONALIZING COMPANIES' APPROACHES TO NON-FINANCIAL REPORTING: AN OVERVIEW

SPIs can be considered one of the most powerful tools for communicating companies' NFI. They are synthetic and relevant measurements useful to support managerial decisions, identifying areas of inefficiency and risk of the company managing the overall performance even in achieving socio-environmental objectives (Schaltegger and Burritt 2000; Jasch 2009)

They can be classified into many types of measures and, as observed by Adams and Frost (2008) the integrated use of financial and non-financial performance indicators can become a critical driver to improve corporate sustainability performance. These measurements give information, in a structured manner on the decision-making processes and internal behaviors in order to operationalize sustainable development but also the external purposes of CSR reporting (Adams and Frost 2008; Mio 2010). Especially in the latter perspective SPIs are useful tools for intertemporal and intersectoral comparison scopes since they can be applied to companies of any type sector or country (Olsthoorn et al. 2001; Daub 2007). Moreover through these synthetic measures stakeholders can assess the organizations' actual performance in relation to their sustainable development commitments and the ethical basis of their CSR programs (Wilburn and Wilburn 2013; Schneider 2015).

Their power to transform some qualitative information into quantitative also contributes to reducing criticisms present in literature concerning the CSR reports often accused of having prevailing qualitative information and unable to "give account" for the real socio-environmental impacts of companies (Roca and Searcy 2012). In fact, although companies have steadily increased the volume of sustainability information in their CSR reports (KPMG 2017), literature has highlighted how organizations have often used this information for mere purposes of corporate greenwashing (Laufer 2003; Lyon and Maxwell 2011), or impression management (Diouf and Boiral 2017), or managerial capture (O'Dwyer 2003; Baker 2010). In many cases, companies have only redefined the terminology used to make it appear that sustainability is manageable (Ball et al. 2000; O'Dwyer 2003; Robinson 2004). In reality their CSR reporting remains a mask so as to continue 'business as usual' (Christian Aid 2004; Gray 2006; Cho et al. 2015; Murray et al. 2017).

Some recent studies (Riccaboni and Leone 2010; Bebbington and Larrinaga 2014; Murray et al. 2017; Geissdoerfer et al. 2017; Reike et al. 2018) have highlighted the complexity of the challenges in this new millennium such as the lack of an effective guidance and the failure of alternative business models proposed which do not offer sufficient confidence in their application in many organizations. In this framework Murray et al. (2017) suggest the adoption of 'Circular Economy' as a possible management strategy that companies could adopt to allow them to engage with these challenges. These authors by taking theoretical concepts from environmental economics, ecological economics, and industrial ecology, and applying them to the business and sustainability relationship suggest that the research of broader inter- and trans-disciplinary perspectives of the circular economy conceptualization more useful to be operationalized in business and policy. The widespread concepts place emphasis on the redesign of processes and cycling of materials, which may contribute to more sustainable business models. However Murray et al. (2017) call for research of revised exploration and application of this concept in order to encourage its extension through further perspectives, starting from the social dimension inherent in sustainable development that limits, for example, its ethical dimensions and some other unintended consequences.

In fact, the circular economy is a relevant business construct to analyze (Wu 2005; Ellen MacArthur Foundation 2012; European Commission 2014; Urbinati et al. 2017; Reike et al. 2018) given the intense scientific debate on sustainable and socially responsible business (Russo and Tencati 2009; Riccaboni and Leone 2010; Su et al. 2013; Dossa and Kaeufer 2014; Schneider 2015; Kalmykova et al. 2018; Prieto-Sandoval et al. 2019).

We believe that a fruitful interdisciplinary extension can be achieved from the perspective of the external reporting of CSR. A greater enhancement of the SPIs would allow increased operationalization of the concept and thus the quality of their sustainability performance information (Schaltegger and Burritt2000;Adams and Frost2008;Mio and Venturelli2013;Bradford et al.2017;Jakhar et al.2019).

In the CSR accounting and reporting literature, research on SPIs was initially focused on environmental indicators, so as to re-balance the traditional prevalent use of financial indicators (Gray and Bebbington2000;Jasch2009;Schneider2015;Bednárová et al.2019). The environmental indicators have been constructed using physical-quantitative measures (for example, the amount of wastewater treated each year), or monetary measures (for example, the cost of wastewater treatment), or combinations of different measures to produce cross-cutting indicators. However, as observed by Olsthoorn et al.(2001), this line of research on environmental indicators, although relatively “young”, “is already highly diversified with approaches based on LCA, economics, management accounting, ecology, and a physical gate-to-gate analysis” (p. 456). In this way, subsequent studies (Ilinitch et al. 1998 Schaltegger and Burritt2000;Gallego- Álvarez2012;Searcy et al.2016) were mainly oriented towards the exploitation of the integration of indicators on the three pillars of sustainability (economic environmental, and social) in CRS reporting. The triple bottom line reporting principles are now considered more capable of satisfying growing stakeholders’ pressure for balanced, accurate, and reliable SPIs systems (Mio and Venturelli2013;Fernandez-Feijoo et al.2014;Lin et al.2014), with positive impacts also on companies’ financial performance and competitive advantage (Adams et al. 2011;Hussain2015;Loprevite et al.2018;Laskar and Maji2018), and to grasp the modern complexity of the company performance (Boiral et al.2012,2019;Jakhar et al.2019). Companies have implemented this integration by elaborating, on a voluntary basis, CSR reports, also supported by the proliferation of guidelines and standards produced by international bodies. In this sense, recent orientations towards the preparation of integrated reports, with the related sustainable business models, aim to offer a “holistic and integrated representation of the company’s performance in terms of both its finance and its sustainability” (IRCSA2011, p. 3;IIRC2013, p. 7). Over the years these guidelines and standards, despite their different settings, have gradually come together for the provision, more or less explicitly, of sets of indicators useful for improving the transparency, credibility, and comparability of disclosed CSR information. Above all, by basing their reporting framework on the triple bottom line principles, the GRI guidelines have always attributed a central role to the integrated use of economic, environmental, and social indicators so as to represent the companies’ sustainable performance.

3. SUSTAINABILITY PERFORMANCE INDICATORS AND NON-FINANCIAL REPORTING

GRI guidelines support the construction of comprehensive, balanced, accurate, and reliable SPI systems considered capable of producing high-quality NFI (Fernandez-Feijoo et al.2014;GRI2017; Boiral et al.2019). They help organizations to provide “the complete disclosure of information on the topics and indicators required to reflect impacts and enable stakeholders to make decisions, and the processes, procedures and assumptions used to prepare those disclosures” in SRs (GRI2006,p. 6). To achieve these purposes, GRI reporting framework is based, since its first version on a set of indicators that represent one of the most relevant and characterizing futures of these guidelines. GRI indicators are defined according to aspects considered “material”, by focusing on what is relevant to the business and to the implementation of sustainability approach, taking into account the perception of the stakeholders and the firm itself, and their identification is supported by an Implementation manual, provided by the same guidelines (GRI2013). All the revisions of the GRI guidelines, from the latest G4 guidelines up to the GRI Standards versions, have made improvements in the SPIs. The last GRI Standards version, issued in October 2016, (entry into force scheduled for all documents published since 2018) aimed at providing a more logical and modular structure of the GRI indicators, compared to G4 guidelines, which offers companies a universal tool for disclosing economic, environmental, and social information (GRI2016).

The construction of a set of SPIs can support companies and stakeholders in operating and evaluating corporate sustainability performance. Moreover, as indicated in Sustainability and Reporting Trends in 2025 (GRI2015), new performance indicators, enabled by technology development and digitalization, will enable companies in the coming years to operate and report in a highly-integrated way, allowing increased levels of operationalization of their sustainable development approaches (Gasperini and Zambon2017).

With reference to the implementation of the Directive, SPIs can help companies to provide NFI “to the extent necessary for an understanding of the undertaking’s development, performance, position and impact of its activity, relating to, as a minimum, environmental, social and employee matters, respect for human rights, anti-corruption and bribery matters” (Directive, Article 1, L. 330/4), and, most important for our aims, “non-financial key performance indicators relevant to the particular business” (Directive, Article 1, L. 330/5). The Directive mentions the word “relevant” when indicating how companies should choose which key performance indicators to disclose, and it states that “a fair and balanced understanding of an entity’s situation” is the condition necessary to limit the

possibility for companies to omit information. The adoption of GRI standards and the proposed performance indicators can also enhance the construction and comparability of companies' NFI reports.

However, recent studies on the content of NFI reports (Sierra-Garcia et al.2018;Miti et al.2018), are highlighting contradictory results on the quality and quantity of information disclosed, and doubts emerge, especially on the question of whether mandatory reporting guarantees an increase of the level of NFI (Luque-Vilchez and Larrinaga2016;Lock and Seele2016;Habek and Wolniak2016;Mion and Adai2019). However, the “legislation driven” approaches to CSR reporting (Adams2004;Bebbington et al.2012) have repeatedly stressed that improvements in the quality of NFI disclosure and on the sustainability commitment of companies cannot be achieved only through mandatory provisions. With reference to the Italian case, numerous studies have evaluated the information gap for Italian companies and, consequently, the adjustment required by the adoption of the Directive with reference to information disclosed by companies before the adoption of the law (Venturelli et al.2017;Carini et al.2018;Manes-Rossi et al.2018;Doni et al.2019).Mion and Adai(2019) analyzed the contents of NF reports drawn up by Italian and German companies and have documented significant differences in the SRs quality before and after the entry into force of Directive 95/2014. Thus far, there are no studies that have carried out a longitudinal analysis of the quantity of the economic, environmental, and social information disclosed by the companies that have continuously adopted the GRI guidelines before and after the adoption of the EU Directive in Italy. Therefore, in order to evaluate the effects of the adoption in Italy of the Legislative Decree 254/2016, and with the aim to bridge the highlighted gap in literature on NFI, our research aims to explore the indicators disclosed by companies listed on the Italian Stock Exchange and producing GRI-based SRs during the 2012–2017 period.

In this perspective, our research aims to propose a longitudinal analysis, from 2012 to 2017, on the number and types of SPIs disclosed by companies in their NFI reporting and on the effects produced on the disclosure of these measures since the entry into force of Legislative Decree 254/2016.

4. EMPIRICAL ANALYSIS

4.1. *Sample and Method*

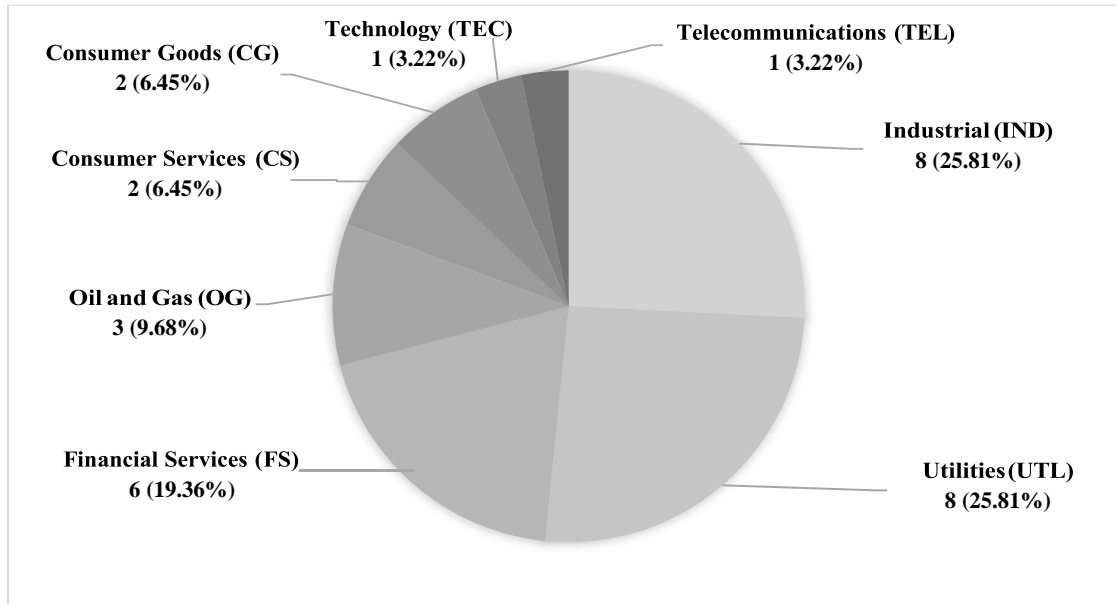
The initial sample is represented by all the companies, both Italian and foreign, listed in 2018 on the Italian Stock Exchange, of which the evolution of the contents of the Non-Financial Statement (NFS) will be analyzed, based on the use of the GRI Guidelines, from 2012 to 2017. Consistently with the aims of the research, the first companies selected were those that published the NFS in 2017, being the first year of application of the Legislative Decree 254/2016. The total amounted to 210 according to the list of companies provided by the Italian Commission for Companies and the Stock Exchange (CONSOB) available at the date of 31 December 2018. In defining the sample, first of all, we applied a sampling technique, equal to 30% of the companies resulting from the CONSOB list, randomly selecting a sample of 63 companies that declared to adopt the GRI Guidelines, G4, or GRI Standard (GRI-S) in the preparation of the NFS in 2017. Then, to carry out the longitudinal comparison, we selected among all the 292 companies listed on the Italian Stock Exchange at the date of 31 March 2014, those that in the 2012 financial year voluntarily used the GRI Guidelines. It emerged that 47 listed companies adopted the GRI G3 and G3.1. Finally, comparing the companies present in both the 2012 and 2017 groupings, we selected the final sample of 31 companies (see Table1).

Table 1. Sampling.

Sample	Number
Initial sample—Companies that published the NFS in 2017 present in the list provided by CONSOB	210
Random sampling (30% of 210 companies)	63
Companies that published the NFS in 2017 by using GRI Guidelines (G4 or GRI-S)	60
Companies that produced voluntary SR in 2012 using GRI Guidelines (G3 or G3.1)	47
Final sample analyzed (Companies present in both the 2012 and 2017 groupings)	31

Figure1 shows the 31 companies of the final sample according to the classification by industry sector provided by the Italian Stock Exchange. The Industrial and Utilities Sectors contain the largest number of companies, followed closely by Financial Services.

Figure 1. Sample composition by industry.



Our research has an exploratory and descriptive nature, and is focused on the SRs analysis of the sampled companies, relating to the 2012 and 2017 financial years, present on the corporate official websites. To pursue the aims of the research, we analyzed the GRI Content Index contained in each SRs. The investigation of economic, environmental, and social indicators was conducted by using content analysis (Krippendorff 2018). Thus, the presence of each indicator was verified on the basis of the page(s) reported within the GRI Content Index. So, the indicators were cataloged, codifying the indicator’s presence with the value 1 and its absence with the value 0, giving each of them the same “weight” (Marston and Shrives1991). To strengthen data reliability, the study was carried out separately by two researchers who then compared the results for the construction of the final data coding table. In order to conduct this analysis, we summarized, for each category of GRI indicators, the number of expected indicators relating to the different GRI Guidelines, as provided in Table2.

Table 2. Categories of Global Reporting Initiative (GRI) Indicators.

GRI Indicators	Encoding	Expected Indicators			
		2017		20 2	
		GRI-S	G4	G3.1	G3
Economic	(EC)	13	9	9	9
Environmental	(EN)	30	34	30	30
Social: Labor Practices and Decent Work	(LA)	21	16	15	14
Social: Human Rights	(HR)	11	12	11	9
Social: Society	(SO)	6	11	10	8
Social: Product Responsibility	(PR)	7	9	9	9
Total Indicators	(Tot)	88	91	84	79

Table 3. Companies by industry sector and DFN approach in the 2017 financial year.

Industry Sector	Total Sample	Publication NFS in a Separate Document				NFS Included (in the Management Report)	NFS in Accordance with the Decree	
		SR	IR	AR	Other		MR	Yes
(UTL)	8	5	1	1		1	8	
(IND)	8	5	1	1		1	7	1
(FS)	6	3	1		2		6	
(OG)	3	1				2	3	
(CS)	2					2	2	
(CG)	2	1				1	1	1
(TEC)	1	1						1
(TEL)	1	1					1	
Total companies	31	17	3	2	2	7	28	3

4.2. Results

This section presents the disclosure analysis results of the SRs published by the sampled companies in 2017 and 2012. The following tables introduce the disclosure analysis by offering an overview of the GRI Guidelines per year adopted in the various industry sectors and the related mandatory or voluntary Assurance regime.

Table3 shows companies by industry sector and the different ways NFS were published in the 2017 financial year. Indeed, the Legislative Decree 254/2016 offers alternative ways of publishing the NFS (both individual and consolidated), classified according to the type of document used by the company in: “SR”, if the Sustainability Report was used for the NFS; “IR”, if the Integrated Report was used for the NFS, based on the IIRC provisions; “AR”, if the NFS was included in the Annual Report “marking it” with the name of NFS; “Other”, when the NFS was published in a separate document, with the name of NFS, different from the previous ones; “MR”, if the NFS was included in the Management report “marking it” with the name of NFS. Regarding the documents used by the companies, thus it is possible to distinguish the compliance or non-compliance of the relative contents to the provisions of Legislative Decree 254/2016.

Table3 illustrates that all the 31 sampled companies used the GRI Guidelines. Most of them published the NFS in a separate document; in particular, more than half of the companies (17) published the NFS within the SR; among them, most belong to the UTL and IND sectors, followed by the FS companies. Almost all the analyzed companies (28) published NFS in accordance with the Legislative Decree 254/2016.

Table4 shows companies by industry sector, the GRI Guidelines adopted, and the Assurance regime of NFS and SRs in the 2017 and 2012 financial years.

Table 4. Companies by industry, GRI Guidelines and Assurance (Assur/+) used in GRI-based Non-Financial Statement (NFS) and sustainability reports (SRs) in 2017 and 2012 financial years.

Industry	2017				2012			
	GRI-S		G4		G3.1		G3	
	N.	Assur	N.	Assur	N.	+	N.	+
UTL	8	8			8	8		
IND	4	4	4	3	6	6	2	1
FS	4	4	2	2	2	2	4	3
OG	1	1	2	2	2	1	1	1
CS	2	2			1	1	1	
CG			2	2	2	2		
TEC			1				1	1
TEL	1	1					1	1
Total companies (31)	20	20	11	9	21	20	10	7

This table illustrates that the majority of the companies which in 2017 adopted the GRI-G4 Guidelines gave the Assurance of DFN (9 out of 11), while the totality of companies using GRI-S Guidelines gave the Assurance of their DFN. Both in 2017 and 2012, all the 31 sampled companies used the GRI Guidelines, and UTL and IND industries presented the highest number of companies publishing GRI-based SRs (8), followed by the FS companies (6). Moreover, the analyzed companies mostly used the G3.1 (21 companies out of 31) in 2012 and GRI-S (20 companies out of 31) in 2017.

Particularly interesting is that all the UTL companies always adopted the most updated version of the GRI Guidelines and always submitted their reports to Assurance (+), even when it was voluntary.

The following Table5 gives an overview of the different categories of SPIs disclosed in SRs in 2012.

Table 5. Descriptive statistics: number and categories of sustainability performance indicators (SPIs) disclosed in the 2012 financial year.

Indicators	Expected Frequency	Average Frequency	Average F./Expected F.	Stand Dev.	Min	Q1	Q2 (Median)	Q3	Max
EC	0-9	6.93	77%	1.93	1	6	7	8.5	9
EN	0-30	21	70%	5.9	7	18.5	22	25	30
LA	0-15	12.58	83.9%	2.5	6	11.5	14	14	15
HR	0-11	7.3	66.4%	2.9	0	5.5	7	10	11
SO	0-10	7.5	75%	2.7	2	6	8	10	10
PR	0-9	5.45	60.5%	2.84	0	3	6	8	9
Total	0-84	60.7	72.3%	16.1	22	55.5	64	72	83

Table5 shows that, on average, all the types of SPIs are well illustrated in the SRs of the sampled companies (with percentages passing 60.5%). The social indicators referred to Labor (LA), with an average of 12.58 (83.9%),

are the most cited indicators, with values included between a minimum of 6 and a maximum of 15. EC is the other most widespread indicator category, with an average of 6.93 (77%) and a lower dispersion around this value compared with the remaining categories (standard deviation equal to 1.93). On the other hand, the Environmental Indicators (EN) have an average frequency of 70% and the highest standard deviation (5.9). The other categories of social indicators, linked to Human Rights (HR) and Product Responsibility (PR), are disclosed on average less frequently (with percentages of 66.4% and 60.5%, respectively), underlining situations in which companies report none of these indicators. The average values and the median ones are close to one another for all the categories (as also shown by the quartiles analysis), revealing a significant symmetry in the distribution of the indicators in each category. LA indicators present the largest difference between the average value (12.58) and the median one (14). Furthermore, almost all the indicator categories have median values higher than the related average values, suggesting that almost all the analyzed companies report a higher number of indicators from each category than the average. Only the HR average value is higher than the median. Particularly interesting is the dynamics of the Total Indicators, whose values range between a minimum of 22 and a maximum of 83, with a remarkable gap in the values of the average (60.7) and the median (64). Moreover, the standard deviation equals 16.1, which signals a considerable difference between the companies analyzed in the reporting activity of the Total Indicators.

Table6 presents a summary of the different categories of GRI-G4 indicators disclosed in 2017 by the 11 companies of the sample which adopted the GRI-G4 Guidelines.

Table 6. Descriptive statistics: number and categories of SPIs disclosed in the 2017 financial year by companies using GRI G4.

Indicators	Expected Frequency	Average Frequency	Average F./Expected F.	Stand Dev	Min	Q1	Q2 (Median)	Q3	Max
EC	0-9	4.09	45%	2.77	1	1.5	4	6	9
EN	0-34	16	47%	7.98	6	11	15	19.5	34
LA	0-16	8.27	51.7%	3.55	4	5.5	8	10	16
HR	0-12	3.45	28.75%	3.5	0	1	2	5	12
SO	0-11	4.54	41.27%	2.98	2	2	4	6	11
PR	0-9	2.9	32.23%	2.5	0	1.5	2	4	9
Total	0-91	39.27	43.15%	21.33	18	23.5	35	47	91

As regards to Table6 it is possible to observe that on average the different SPIs categories are not adequately reported in the SRs of the 11 sampled companies using these Guidelines (having percentages lower than 50%). Only the Social Indicators related to LA have an average value slightly higher than 50% (of 51.7%), whose values range between a minimum of 4 and a maximum of 16. The other common category of indicators is EN, with an average frequency of 47%, but also the highest standard deviation (7.98). The categories of social indicators, linked to Product Responsibility (PR) and Human Rights (HR), are disclosed on average less frequently (with percentages equal to 32.23% and 28.75%, respectively, and minimum values of 0). Overall the average values and the median values of each category are quite close to one another. Only EN and HR indicators present a wider gap between the average (16 and 3.45, respectively) and the median (15 and 2 respectively) values. Furthermore, all the indicator categories present median values lower than the related average values, revealing that the analyzed companies do not report a higher number of indicators than the average. Evaluating the values related to the Total, the total number of indicators reported is, in percentage, of 43.15%, ranging from a minimum of 18 to a maximum of 91 with a remarkable gap in the values of the average (39.27) and the median (35). Moreover, the high standard deviation of 21.33 signals again a relevant dispersion among companies in reporting the Total Indicators. Table7 shows an overview of the various categories of GRI-S indicators reported in 2017 by the further 20 sampled companies which used the GRI-S Guidelines.

Table 7. Descriptive statistics: number and categories of SPIs disclosed in the 2017 financial year by companies using GRI-S.

Indicators	Expected Frequency	Average Frequency	Average F./Expected F.	Stand Dev	Min	Q1	Q2 (Median)	Q3	Max
EC	0-13	7.37	57%	3.93	0	4.75	8	11	13
EN	0-30	13.9	46.34%	6.66	6	8	13	17	28
LA	0-21	9.55	45.48%	4.11	3	5.75	10.5	13	15
HR	0-11	4.65	42%	3.67	0	2	3.5	7.25	11
SO	0-6	3.25	54.17%	1.86	0	2	3	4.25	6
PR	0-7	3.75	53.57%	2.5	0	2	3.5	6.25	7
Total	0-88	42.3	48%	19.45	16	24	40.5	58.75	74

Table7 illustrates that, on average, the GRI-S indicators are better represented than GRI-G4 indicators. Indeed, the highest percentage related to EC is equal to 57%, while the lowest percentage referred to HR is equal

to 42%. The second most common category of indicators is represented by SO, which has an average value of 54.17% and also the highest concentration around it (standard deviation equals 1.86). Moreover, the EN indicators have an average frequency of 46.34% and the highest standard deviation (of 6.66). The proximity of the average and median values in almost all categories of indicators once again demonstrates a symmetry in their distribution within each of them. HR indicators have the largest difference between the values of the average (4.65) and the median (3.5). Regarding the Total, the total number of indicators disclosed by the 20 companies which adopted the GRI-S Guidelines ranges between a minimum of 16 and a maximum of 74, with a remarkably large difference in the values of the average (42.3) and the median (40.5). The standard deviation of 19.45 highlights a high dispersion among the companies studied in reporting the Total Indicators.

Figure2 shows the average trend of the disclosure of each SPI in 2017 and 2012.

Overall, it is noteworthy to observe that, from 2012 to 2017, the general level of disclosure of SPIs related to the sampled companies declined, decreasing from the average percentage of 72.30%, in 2012, to the 45.57%, in 2017. The same trend was registered for each category of indicators, characterized by a general reduction of the disclosure level (more consistent with regard to the companies using the GRI-G4 Guidelines in 2017, and less significant with reference to those who adopted in the same year the GRI-S Guidelines). In particular, one of the most widespread categories of indicators in 2012, EC went from the average percentage of dissemination of 77% in 2012 to 51% in 2017. In 2012, LA was the most cited category of indicators; on the other hand, it declined from the average percentage of dissemination of 83.90% in 2012 to 48.59% in 2017. Furthermore, HR was one of the less used categories of indicators in 2012 (66.40%). In 2017, it recorded almost half of the average percentage of diffusion in the sampled companies, dropping to 35.37%.

Figure 2. The longitudinal analysis (2012–2017) of the GRI Indicators reported.

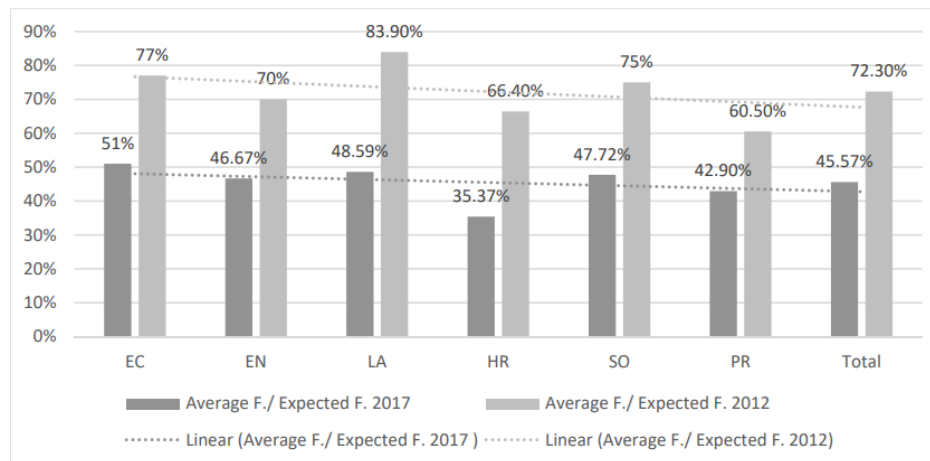


Table8 illustrates for each GRI Indicators category the most and the least reported in 2017 and 2012 financial years.

Table 8. Most and least reported SPIs in 2017 and in 2012 financial years.

GRI Indicators	2017 GRI-S		2017 G4		2012	
	Most Reported Indicators	Least Reported Indicators	Most Reported Indicators	Least Reported Indicators	Most Reported Indicators	Least Reported Indicators
EC	201-1 205-3	202-1	G4-EC1	G4-EC6	EC1 EC8	EC5
EN	305-1	303-4 303-5	G4-EN3 G4-EN15	G4-EN13 G4-EN14	EN3 EN8 EN22	EN15
LA	404-1	403-5 403-6 403-7 403-8 403-9 403-10	G4-LA6	G4-LA5 G4-LA7 G4-LA14 G4-LA15	LA4 LA13	LA15
HR	406-1	410-1	G4-HR3 G4-HR4	G4-HR5 G4-HR6 G4-HR7 G4-HR8 G4-HR9	HR6 HR7	HR10
SO	413-1 419-1	414-2	G4-SO5	G4-SO9	SO2 SO3 SO4	SO10
PR	419-1	417-2	G4-PR5	G4-PR4 G4-PR6 G4-PR7	PR1 PR3 PR9	PR4

From the comparative analysis of the most and least reported performance indicators in 2012 and 2017, it emerges that the economic performance indicator relating to the direct economic value generated and distributed (GRI-G3/3.1/4 EC1; GRI-S 201-1) is always one of the most communicated indicators of its category. Furthermore, the EN Indicator related to the emissions (GRI-G3/3.1/4 EN15; GRI-S 305-1), which is the least reported EN Indicator in 2012, became the most reported EN Indicator in 2017. The LA Indicator LA15 referred to the negative social impacts in the supply chain and the actions taken, remained one of the least reported indicators both in 2012 and 2017. In the HR Indicators category, the performance indicator relating to the security practices (GRI-G3/3.1/4 HR7; GRI-S 410-1) passed from the most reported indicator in 2012 to the least reported indicator in 2017. The Social Indicator referred to the supplier social assessment (GRI-G3/3.1/4 SO10; GRI-S 414-2) was one of the least reported indicators both in 2012 and 2017. The Product Responsibility indicator related to the incidents of non-compliance concerning product and service information and labeling (GRI-G3/3.1/4 PR4; GRI-S 417-2) was always one of the least communicated indicators within its reference category.

Table9 shows by industry sector, the average trend of the disclosure of each category of SPIs in 2017 and 2012.

Table 9. The longitudinal analysis by industry of the SPIs reported.

Industry	EC		EN		LA		HR		SO		PR		Total	Total
	2017	2012	2017	2012	2017	2012	2017	2012	2017	2012	2012	2017	2017	2012
Utilities	8.5	7.88	16.63	24.63	9.63	13.25	4.38	8.25	3.75	9.13	4	6.13	46.88	69.25
Consumer Goods	8	7.5	24	25.5	13	14	6.5	8	7.5	9	7	8	66	72
Financial Services	6	7	12.88	16.67	9.25	12.17	3.63	5.84	3.25	6.67	3.75	5	38.75	53.34
Industrial	5	6.63	15.13	20.38	8.38	12.25	4	6.5	3.63	7.5	2.75	4.13	38.88	57.38
Oil and Gas	4.5	7.67	11	24	6	14.34	4.25	10.34	3.75	8.34	0.25	8	29.25	72.67
Consumer Services	3	5.5	6	16.5	8	13	1	5.5	2	4.5	2.5	5.5	22	50.5
Technology	1	7	13	24	5	10	2	7	2	5	2	3	25	56
Telecommunications	5	1	14	12	15	6	10	6	5	2	7	3	56	30

With regards to the Total Indicators, the above table shows that, on average from 2012 to 2017, the overall level of disclosure of performance indicators has been decreased in each sector analyzed. The only exception was the Telecommunications sector, in which the average value of disclosure increased from 30 in 2012 to 56 in 2017. The same trend was registered for each category of indicators, characterized by a general increase of the disclosure level, with the exception of the Telecommunications sector, where the opposite trend was registered. In 2012, the highest number of Total Indicators was disclosed in the Oil and Gas (72.67) and Consumer Goods (72) sectors, while the lowest number of the same category was reported in the Telecommunications sector (with an average value of 30). In 2017 the highest number of total indicators was disclosed in the Consumer Goods (66) and Telecommunications (56) sectors, while the lowest number in the Consumer Services sector (with only 22). For EC and EN indicators, both in 2012 and 2017, Utilities and Consumer Goods sectors had the highest average values of reporting, proving to be the best performers in the disclosure of two of the three categories of GRI. The sectorial disclosure of the four aspects of the Social indicators once again highlights the relevance of Utilities Consumer Goods and Oil and Gas sectors in both the two periods analyzed. The last places are almost always occupied by Consumer Services, Technology, and Telecommunications sectors. Finally, LA indicators are overall the most reported among the sectors within the four types of the Social indicators categories.

5. DISCUSSION AND CONCLUSIONS

This study has examined the effects of the introduction of the EU Directive in Italy. Using content analysis, the research has analyzed the NFI reported by 31 companies before and after the Legislative Decree 254/2016 regarding the survey periods of 2012 and 2017.

The analysis showed that each category of performance indicators (economic, environmental, and social) was largely used by the sampled companies in 2012 and less disclosed by the same companies in 2017. In fact between 2012 to 2017 the three categories of indicators were characterized by an overall reduction of the disclosure level.

With regards to the total number of SPIs, results achieved significant average values (about 72.30% of those provided) in 2012 followed by a drastic reduction in 2017, with disclosure percentages equal to 45.57% of those accountable.

On average, in 2012, the type of performance indicators most frequently disclosed within the Sustainability Reports of the sampled companies was related to Labor Practices and Decent Works (LA). These indicators were followed by those of the Economic dimension (EC) and those referred to Society (SO). In 2017, the most frequently

reported indicators' category was related to the economic dimension, followed by the LA indicators and the SO indicators. More specifically, the most reported indicator in both periods analyzed was GRI EC1 (and the corresponding GRI-S 201-1), which provides information on the economic value generated and distributed. The least reported indicators both in 2012 and 2017 were: GRI LA15 (pertaining to the negative social impacts in the supply chain and the actions taken); GRI SO10 (and the corresponding GRI-S 414-2), pertaining to the supplier social assessment, and GRI PR4 (and the corresponding GRI-S 417-2), which pertains to the incidents of non-compliance concerning product and service information and labeling.

From the point of view of the industry sectors, it was observed that, on average from 2012 to 2017 the overall level of disclosure of SPIs decreased in all sectors analyzed, with the only exception being the Telecommunications sector. This is true also for each category of indicators analyzed. Furthermore, in the two periods observed, the companies that made the most extensive use of SPIs, in average values both in 2012 and 2017, are those of the Consumer Goods and Utilities sectors. The same trend was also registered in each category. Overall the sectorial analysis of indicators underlined discrepancies in the reporting of the different indicators among companies. This result is in agreement with other studies that showed how the company sector influences the level of its social, environmental, and sustainability disclosure (Legendre and Coderre 2013; Kansal et al. 2014).

As highlighted, our analysis shows, with rare exceptions, a general reduction of the number of SPIs reported. Therefore, companies prove to be more selective in what to report and not to report following the introduction of mandatory disclosure of NFI. This behavior might be interpreted as a need to focus only on indicators considered more "relevant" according to the Directive requests of "a fair and balanced understanding of an entity's situation". In this case, there is the rationalization of the NFI reports that becomes a more effective way for companies to communicate their responsibilities.

However, the reduction of SPIs disclosed might also be considered the expression of the transition stage toward mandatory NFI reporting. Classically, the adoption of a new law has the ambition to change behaviors directly, through legal sanctions or indirectly by "changing attitudes" of people or associations subject to regulations (Bilz and Nadler 2014, p. 241). Therefore during this transition stage, companies could become more interested in being more cautious, given the control system activated on NFI after the adoption of the Directive (Decree, art. 3). Consequently companies might be willing to comply strictly with the requests of the Directive and of the Decree thus disclosing the minimum quantity of "environmental, social and employee matters, respect for human rights, anti-corruption and bribery matters" (Directive, Article 1, L. 330/4 and Decree, art. 3) in order to be compliant, given the legal sanctions indicated by the Decree. Relying on the "life cycle of a norm" (Bebbington et al. 2012, p. 79), it is possible to hypothesize that the internalization of norms, that soon become taken for granted and recognized by companies as binding (Bebbington et al. 2012), might produce in the following years a further modification of NFI disclosed.

This research represents a preliminary analysis of the adoption of the Directive in Italy and its first effects. Our study strengthens the previous literature on NFI reporting practices contributing to the understanding of the reporting approach used by companies after and before the recent transposition of the Directive.

Our research findings can have implications for policymakers, showing them the current state of the NFI reporting content. These results can contribute, for example, to the definition of a strategy useful for improving and extending the disclosure of less disclosed indicators. Our research can also be useful for companies that can use our results to identify usable benchmarks to compare their approach to the disclosure of NFI indicators with those of other competitors operating in the same sector or in other sectors.

Our study has some limitations. The essential exploratory and descriptive nature of the research and the only reference to a sample of Italian listed companies producing a GRI-based SRs do not allow for a generalization of the results. In particular, they cannot be extended even to the large number of non-listed companies that often publish CSR Reports. However, the research offers several lines of development for future studies. In addition to the indicators in SRs other research may also investigate SPIs disclosed by Italian companies in their Management Reports in compliance with Article 2428 of the Italian Civil Code. Furthermore future studies could develop the investigation of the SPIs in the years following the first adoption of the Directive. The use of questionnaire surveys might support a better understanding of the reasons that lead practitioners to disclose some NFI and qualitative differences in terms of information disclosed on SPIs might be investigated using disclosure indices. Our results could be extended to other countries in order to identify elements of homogeneity and potential differences in the companies' disclosure behavior after the adoption of the Directive.

Conflicts of Interest:

The authors declare no conflict of interest.

References:

1. Adams, Carol. 2004. The ethical, social and environmental reporting-performance gap. *Accounting, Auditing & Accountability Journal* 17: 731–57.
2. Adams, Carol, and Geoffrey R. Frost. 2008. Integrating sustainability reporting into management practices. *Accounting Forum* 32: 288–302.
3. Adams, Michael, Barry Thornton, and Mohammad Sepehri. 2011. The impact of the pursuit of sustainability on the financial performance of the firm. *Journal of Sustainability and Green Business* 1: 1–14.
4. Aureli, Selena, Elisabetta Magnaghi, and Federica Salvatori. 2019. The Role of Existing Regulation and Discretion in Harmonising Non-Financial Disclosure. *Accounting in Europe* 16: 290–312.
5. Baker, Max. 2010. Re-conceiving managerial capture. *Accounting, Auditing & Accountability Journal* 23: 847–67.
6. Ball, Amanda, David L. Owen, and Rob Gray. 2000. External transparency or internal capture? The role of third party statements in adding value to corporate environmental reports. *Business Strategy and the Environment* 9: 1–23.
7. Bebbington, Jan, and Carlos Larrinaga. 2014. Accounting and sustainable development: An exploration. *Accounting, Organizations and Society* 39: 395–413.
8. Bebbington, Jan, Elizabeth A. Kirk, and Carlos Larrinaga. 2012. The production of normativity; A comparison of reporting regimes in Spain and the UK. *Accounting, Organization and Society* 2: 78–94.
9. Bednářová, Michaela, Roman Klimko, and Eva Rievajová. 2019. From Environmental Reporting to Environmental Performance. *Sustainability* 11: 2549
10. Bilz, Kemworthey, and Janice Nadler. 2014. Law, moral attitudes, and behavioral change. In *The Oxford Handbook of Behavioral Economics and the Law*. Edited by Zamir Eyal and Teichman Doron. New York: Oxford University Press, pp. 241–67.
11. Boiral, Olivier. 2013. Sustainability reports as simulacra? A counter-account of A and A+ GRI reports. *Accounting, Auditing & Accountability Journal* 26: 1036–71.
12. Boiral, Olivier, Jean-François Henri, and David Talbot. 2012. Modeling the impacts of corporate commitment on climate change. *Business Strategy and the Environment* 21: 495–516.
13. Boiral, Olivier, Heras Iñaki Saizarbitoria, and Marie-Christine Brotherton. 2019. Assessing and improving the quality of sustainability reports: The auditors' perspective. *Journal of Business Ethics* 155: 703–21.
14. Bradford, Marianne, Julia B. Earp, and Paul F. Williams. 2017. Understanding sustainability for socially responsible investing and reporting. *Journal of Capital Markets Studies* 1: 10–35.
15. Carini, Cristian, Laura Rocca, Monica Veneziani, and Claudio Teodori. 2018. Ex-Ante Impact Assessment of Sustainability Information—The Directive 2014/95. *Sustainability* 10: 560.
16. Cho, Charles H., Matias Laine, Robin W. Roberts, and Michelle Rodrigue. 2015. Organized hypocrisy, organizational façades, and sustainability reporting. *Accounting, Organizations and Society* 40: 78–94.
17. Christian Aid. 2004. *Behind the Mask: The Real Face of Corporate Social Responsibility*. London: Christian Aid.
18. Daub, Claus-Heinrich. 2007. Assessing the quality of sustainability reporting: An alternative methodological approach. *Journal of Cleaner Production* 15: 75–85.
19. Diouf, Dominique, and Olivier Boiral. 2017. The quality of sustainability reports and impression management: A stakeholder perspective. *Accounting, Auditing & Accountability Journal* 30: 643–67.
20. Doni, Federica, Silvio Bianchi Martini, Antonio Corvino, and Michela Mazzoni. 2019. Voluntary versus mandatory non-financial disclosure: EU Directive 95/2014 and sustainability reporting practices based on empirical evidence from Italy. In *Meditari Accountancy Research*.

21. Dossa, Zahir, and Katrin Kaeufer. 2014. Understanding sustainability innovations through positive ethical networks. *Journal of Business Ethics* 119: 543–59.
22. Ellen Macarthur Foundation. 2012. *Towards the Circular Economy, Vol. 1: Economic and Business Rationale for a Circular Economy*. Cowes: Ellen Macarthur Foundation.
23. European Commission. 2014. *Towards a Circular Economy: A Zero Waste Programme for Europe*. Brussels: European Commission.
24. European Commission. 2017. *Guidelines on Non-Financial Reporting (Methodology for Reporting Non-Financial Information) (2017/C 215/01)*. Brussels: European Commission.
25. Fernandez-Feijoo, Belén, Silvia Romero, and Silvia Ruiz. 2014. Effect of stakeholders' pressure on transparency of sustainability reports within the GRI framework. *Journal of Business Ethics* 122: 53–63.
26. Gallego-Àlvarez, Isabel. 2012. Indicators for Sustainable Development: Relationship between Indicators Related to Climate Change and Explanatory Factors. *Sustainable Development* 20: 276–92.
27. Gasperini, Andrea, and Stefano Zambon. 2017. Confronto a due sulle non financial information. *Impresa Progetto* 1: 1–10.
28. Gaudencio, Lucia M. A. L., Rui de Oliveira, Wilson Fadlo Curi, C. F. D. Santana, J. N. Silva, and C. M. B. S. Meira. 2018. Oil and gas companies operating in Brazil adhere to GRI-G4 essential sustainability indicators: A critical review. *In Environment, Development and Sustainability*. vol. 22.
29. Geissdoerfer, Martin, Paulo Savaget, Nancy Bocken, and Erik Jan Hultink. 2017. The Circular Economy—A new sustainability paradigm? *Journal of Cleaner Production* 143: 757–68.
30. Gray, Rob. 2006. Does sustainability reporting improve corporate behaviour? Wrong question? Right time? *In Accounting and Business Research*. vol. 36, (Suppl. 1), pp. 65–88.
31. Gray, Rob, and Jan Bebbington. 2000. Environmental Accounting, Managerialism and Sustainability: Is the planet safe in the hands of Business and Accounting? *Advances in Environmental Accounting & Management* 1: 1–44.
32. GRI (Global Reporting Initiative). 2006. *GRI Sustainability Reporting Guidelines. Version 3.0*. Amsterdam: GRI.
33. GRI (Global Reporting Initiative). 2013. *Sustainability Reporting Guidelines. Implementation Manual*. Available online:<https://www.globalreporting.org/information/g4/Pages/default.aspx>(accessed on 9 September 2019).
34. GRI (Global Reporting Initiative). 2015. *Sustainability and Reporting Trends in 2025—Preparing for the Future*. Available online:<https://www.globalreporting.org/resourcelibrary/Sustainability-and-Reporting-Trends-in-2025-1.pdf>(accessed on 10 September 2019).
35. GRI (Global Reporting Initiative). 2016. *Consolidate Set of GRI Sustainability Reporting Standards*. Available online: <https://www.globalreporting.org/standards/gri-standards-download-center/> (accessed on 10 September 2019).
36. GRI (Global Reporting Initiative). 2017. *Mapping G4 to the GRI Standards—DISCLOSURES—FULL OVERVIEW*. Amsterdam: GRI.
37. Guthrie, James, and Federica Farneti. 2008. GRI sustainability reporting by Australian public sector organizations. *Public Money & Management* 28: 361–66.
38. Habek, Patrycja, and Radoslaw Wolniak. 2016. Assessing the quality of corporate social responsibility reports: The case of reporting practices in selected European Union member states. *Quality & Quantity* 50: 399–420. Hussain, Nazim. 2015. *Impact of Sustainability Performance on Financial Performance: An Empirical Study of Global Fortune (N100) Firms*. Working Paper 2015/01. Venice: Department of Management, Ca' Foscari University of Venice.
39. IIRC (International Integrated Reporting Council). 2013. *The International Integrated Reporting Framework*. December. Available online:<http://www.theiirc.org/international-ir-framework/> (accessed on 12 September 2019).

40. Ilinitch, Anne Y., Naomi S. Soderstrom, and Tom E. Thomas. 1998. Measuring corporate environmental performance. *Journal of Accounting and Public Policy* 17: 383–408.
41. IRCSA (Integrated Reporting Committee of South Africa). 2011. Framework for Integrated Reporting and the Integrated Report Discussion Paper. January 25. Available online: <http://www.sustainabilitysa.org> (accessed on 12 September 2019).
42. Jakhar, Suresh Kumar, Sachin Kumar Mangla, Sunil Luthra, and Simonov Kusi-Sarpong. 2019. When stakeholder pressure drives the circular economy: Measuring the mediating role of innovation capabilities. *Management Decision* 57: 904–20.
43. Jasch, Christine. 2009. *Environmental and Material Flow Cost Accounting*. London: Springer.
44. Kalmykova, Yuliya, Madumita Sadagopan, and Leonardo Rosado. 2018. Circular economy—From review of theories and practices to development of implementation tools. *Resources, Conservation and Recycling* 135: 190–201.
45. Kansal, Monika, Mahesh Joshi, and Gurdip Singh Batra. 2014. Determinants of corporate social responsibility disclosures: Evidence from India. *Advances in Accounting* 30: 217–29.
46. KPMG. 2017. *KPMG The Road Ahead: KPMG Survey of Corporate Responsibility Reporting 2017*. Zurich: KPMG.
47. Krippendorff, Klaus. 2018. *Content Analysis. An Introduction to Its Methodology*. London: SAGE.
48. Laskar, Najul, and Santi Gopal Maji. 2018. Disclosure of corporate sustainability performance and firm performance in Asia. *Asian Review of Accounting* 26: 414–43.
49. Laufer, William S. 2003. Social Accountability and Corporate Greenwashing. *Journal of Business Ethics* 43: 253–61.
50. Legendre, Stéphane, and François Coderre. 2013. Determinants of GRI G3 application levels: The case of the fortune global 500. *Corporate Social Responsibility and Environmental Management* 20: 182–92.
51. Lin, Hank, Otto Chang, and Amy Chang. 2014. Importance of Sustainability Performance Indicators as Perceived by the Users and Preparers. *Journal of Management and Sustainability* 4: 29–41.
52. Lock, Irina, and Peter Seele. 2016. The credibility of CSR reports in Europe. Evidence from a quantitative content analysis in 11 countries. *Journal of Cleaner Production* 122: 186–200.
53. Loprevite, Salvatore, Bruno Ricca, and Daniela Rupo. 2018. Performance sustainability and integrated reporting: Empirical evidence from mandatory and voluntary adoption contexts. *Sustainability* 10: 1351.
54. Luque-Vilchez, Mercedes, and Carlos Larrinaga. 2016. Reporting models do not translate well: Failing to regulate CSR reporting in Spain. *Social and Environmental Accountability Journal* 36: 56–75.
55. Lyon, Thomas P., and John W. Maxwell. 2011. Greenwash: Corporate Environmental Disclosure under Threat of Audit. *Journal of Economics & Management Strategy* 20: 3–41.
56. Manes-Rossi, Francesca, Adriana Tiron-Tudor, Giuseppe Nicolò, and Gianluca Zanellato. 2018. Ensuring More Sustainable Reporting in Europe Using Non-Financial Disclosure-De Facto and De Jure Evidence. *Sustainability* 10: 1162.
57. Marimon, Frederic, del Mar Alonso-Almeida, Martha del Pilar Rodriguez, and Alejandro Klender Aimer Cortez. 2012. The worldwide diffusion of the global reporting initiative: What is the point? *Journal of Cleaner Production* 33: 132–44.
58. Marston, Claire L., and Philip L. Shrides. 1991. The use of disclosure indices in accounting research: A review article. *The British Accounting Review* 23: 195–210.
59. Mio, Chiara. 2010. Corporate social reporting in Italian multi-utility companies: An empirical analysis. *Corporate Social Responsibility and Environmental Management* 17: 247–71.

59. Mio, Chiara, and Andrea Venturelli. 2013. Non-financial information about sustainable development and environmental policy in the annual reports of listed companies: Evidence from Italy and the UK. *Corporate Social Responsibility and Environmental Management* 20: 340–58.
60. Mion, Giorgio, and Cristian R. Loza Adauí. 2019. Mandatory Nonfinancial Disclosure and Its Consequences on the Sustainability Reporting Quality of Italian and German Companies. *Sustainability* 11: 4612.
61. Miti, Mirela Ujkani, Nertila Çika, and Sotiraq Dhamo. 2018. Information of the Financial Statements Disclosures-Case of Albania. *European Journal of Economics and Business Studies* 4: 82–92.
62. Murray, Alan, Keith Skene, and Kathryn Haynes. 2017. The circular economy: An interdisciplinary exploration of the concept and application in a global context. *Journal of Business Ethics* 140: 369–80.
63. Muserra, Anna Lucia, Marco Papa, and Francesco Grimaldi. 2019. Sustainable Development and the European Union Policy on Non-Financial Information: An Italian Empirical Analysis. In *Corporate Social Responsibility and Environmental Management*. pp. 1–10.
64. O'Dwyer, Brendan. 2003. Conceptions of corporate social responsibility: The nature of managerial capture. *Accounting, Auditing & Accountability Journal* 16: 523–57.
65. Olsthoorn, Xander, Daniel Tyteca, Walter Wehrmeyer, and Marcus Wagner. 2001. Environmental indicators for business: A review of the literature and standardisation methods. *Journal of Cleaner Production* 9: 453–63.
66. Prieto-Sandoval, Vanessa, Carmen Jaca, Javier Santos, Rupert J. Baumgartner, and Marta Ormazabal. 2019. Key strategies, resources, and capabilities for implementing circular economy in industrial small and medium enterprises. *Corporate Social Responsibility and Environmental Management* 26: 1473–84.
67. Reike, Denise, Walter J. Vermeulen, and Sjors Witjes. 2018. The circular economy: New or refurbished as CE 3.0? Exploring controversies in the conceptualization of the circular economy through a focus on history and resource value retention options. *Resources, Conservation and Recycling* 135: 246–64.
68. Riccaboni, Angelo, and Emilia Luisa Leone. 2010. Implementing strategies through management control systems: The case of sustainability. *International Journal of Productivity and Performance Management* 59: 130–44.
69. Robinson, John. 2004. Squaring the circle? Some thoughts on the idea of sustainable development. *Ecological Economics* 48: 369–84.
70. Roca, Laurence Clément, and Cory Searcy. 2012. An analysis of indicators disclosed in sustainability reports. *Journal of Cleaner Production* 20: 103–18.
71. Russo, Angeloantonio, and Antonio Tencati. 2009. Formal vs. informal CSR Strategies: Evidence from Italian micro, small, medium-sized, and large firms. *Journal of Business Ethics* 85: 339–53.
72. Schaltegger, Stefan, and Roger Burritt. 2000. *Contemporary Environmental Accounting*. Sheffield: Greenleaf Publishing Limited.
73. Schneider, Anselm. 2015. Reflexivity in sustainability accounting and management: Transcending the economic focus of corporate sustainability. *Journal of Business Ethics* 127: 525–36.
74. Searcy, Cory, Shane M. Dixon, and W. Patrick Neumann. 2016. The use of work environment performance indicators in corporate social responsibility reporting. *Journal of Cleaner Production* 112: 2907–21.
75. Sierra-Garcia, Laura, Maria Antonia Garcia-Benau, and Helena Bollas-Araya. 2018. Empirical Analysis of Non-Financial Reporting by Spanish Companies. *Administrative Sciences* 8: 29.
76. Skouloudis, Antonis, Konstantinos Evangelinos, and Fotis Kourmousis. 2010. Assessing non-financial reports according to the global reporting initiative] guidelines: Evidence from Greece. *Journal of Cleaner Production* 18: 426–38.

77. Su, Biwei, Almas Heshmati, Yong Geng, and Xiaoman Yu. 2013. A review of the circular economy in China: Moving from rhetoric to implementation. *Journal of Cleaner Production* 42: 215–27.
78. Tarquinio, Lara, Domenico Raucci, and Roberto Benedetti. 2018. An Investigation of Global Reporting Initiative Performance Indicators in Corporate Sustainability Reports: Greek, Italian and Spanish Evidence. *Sustainability* 10: 897.
79. UNSTATS. 2019. Global Indicator Framework Adopted by the General Assembly. Available online:<http://unstats.un.org/sdgs/indicators/indicators-list/> (accessed on 12 September 2019).
80. Urbinati, Andrea, Davide Chiaroni, and Vittorio Chiesa. 2017. Towards a new taxonomy of circular economy business models. *Journal of Cleaner Production* 168: 487–98.
81. Venturelli, Andrea, Fabio Caputo, Simona Cosma, Rossella Leopizzi, and Simone Pizzi. 2017. Directive 2014/95/EU: Are Italian Companies Already Compliant? *Sustainability* 9: 1385.
82. Wilburn, Kathleen, and Ralph Wilburn. 2013. Using global reporting initiative indicators for CSR programs. *Journal of Global Responsibility* 4: 62–75.
83. Wu, Ji-Song. 2005. *New Circular Economy*. Beijing: Tsinghua University Press.