

THE RELATIONSHIP BETWEEN ANNUAL AND SUSTAINABILITY, ENVIRONMENTAL AND SOCIAL REPORTS

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Abstract

This paper is based on the consideration that information transparency and accountability are not only related to the increase of spread information but also to the improvement of the organizational clarity with which the information is conveyed through the periodic reports. The development of an effective communicative behaviour is linked to a good use of the periodical reports – the narrative section of the annual report and social, environmental and sustainability reports – with reference to their adequate completeness and integration. Empirical research emphasizes the importance of information increase, e.g. information on products, processes, strategies, risks, social-environmental impacts, intangibles assets, and so on. As to this, in the last years focused reports on specific subjects have increasingly been made public: in this, social, environmental and sustainability reports (SES) have played a very important role. At the same time, content of the annual report has been extended by the introduction of disclosure about social and environmental issues.

In such a context, scarce attention was paid to the different reports' integration and to the possibility that there could be information repetition. More disclosure could be positive for the reduction of information asymmetry but lack of integration of reports and information redundancy could reduce transparency, without being useful for the readers' knowledge.

By means of a disclosure-scoring system, the aim of this paper is the analysis of the relationship between the content of the annual reports and of the SES reports. To quantify the degree of reports' completeness and integration a disclosure index has been established. Reports of year 2014 have been analysed. To better understand the companies' communicative behaviour a specific industry is selected. Extractive petroleum companies are analysed because of their relevant environmental and social impact. In addition to this, previous researches demonstrate that petroleum companies have a transparent communication behaviour. Finally, there are specific guidelines for their SES reports' drafting.

The analysis will allow the identification of some communication models and will provide possible response in order to combine the need for more information with the communication tools' integration. This study could also be a first response to evaluate the potentialities and criticalities of the adoption of the integrated reporting.

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1 Introduction

Aim of the paper is the analysis of the relationship between annual and sustainability, environmental and social reports (SES), in order to evaluate the degree of completeness and integration.

Information transparency and accountability increase their relevance in the accounting literature in view of the growth of information spread by periodical narrative section of the annual reports and from the diffusion of report specifically linked to social and environmental externalities of management. These last were born in response to the stakeholder and accountability theories (Rasche A. et al. 2006; Cooper S.M. et al., 2007; Cooper S.M., 2003) those

suggest that firms should enlarge the kind of reported disclosure, not restricting it to the financial side of management, so that all stakeholders could satisfy their need for knowledge. There are several kinds of reports dealing with SES issues, they may contain social aspects only or environmental items only, or they may include these in connection with subjects such as economic, safety, corporate governance, risks. In the present paper they will be called SES reports.

Worldwide the narrative section of the annual reports is viewed as the crucial element in achieving the desired step-change in the quality of financial reports (Core, 2001; Beattie, McInnes, & Fearnley, 2004; Beattie & Thomson, 2005; Beattie & McInnes, 2006; Beattie, McInnes, & Pierpoint, 2008). In

particular, attention is on the management discussion and analysis (MD&A) statement. In some jurisdictions, guidelines are being extended and revised, while in others, disclosures are mandatory. In Canada, the Canadian Institute of Chartered Accountants (CICA) issued more detailed MD&A guidelines that set out six disclosure principles and developed a 5-part integrated disclosure framework that covers strategy, key performance drivers, capabilities, results, and risks (CICA, 2009). In Australia, the G100 strongly encourages directors to include the Operating and Financial Review (OFR) in the annual report. In Europe, the management discussion section was introduced into the community regulations and then also into Italy and the UK under Directive 1978/660/EC and Directive 1983/349/EC, better known as IV Directive (annual accounts) and VII Directive (consolidated accounts). Finally in December 2010, the IASB (2010) published the Practice Statement management commentary.

By establishing a composite disclosure index, based on disclosure scoring analysis, a partial form of content analysis, the aim of this paper is to investigate the relationship between annual and SES reports. Their completeness as to relevant information, for readers of the analysed industry, will be evaluated. The completeness will be measured by information presence degree and report complementarity degree. Subsequently document integration will be determined, as to same information repetition lack.

In order to better understand disclosure behaviour, the analysis focuses on a specific industry, the petroleum one, which firms write both annual and SES reports. Petroleum companies, besides having relevant externalities on the global economic system, generate strong environmental and social consequences, on which they should communicate. These firms operate in a high-pollutant industry, in undeveloped countries that suffer from economic difficulties and politic instability, and they generate relevant financial results. They get in touch with a lot of stakeholders who are interested in activity performance and who need exhaustive information. Their multinational presence subjects these companies to respect a complex system of communication requests.

This paper is structured as follow. In the first part the theoretical framework which the development of the work is based on and research questions are presented. Then speculative space is left for the applied methodology, followed by the main analysis results. Finally, the last paragraph is dedicated to any conclusion and implications.

2 Theoretical framework and research questions

2.1 Theoretical framework

Researches focus on the importance of transparency and accountability (Hess D., 2007; Swift T., 2001; Zadek et al., 1997). Referring to this goal, previous research has showed an increase of information spread

through periodical reports (Gamble et al., 1995; Core, 2001): there is substantial agreement on the increase of firms' disclosure, no longer restricted to the financial one, but including several descriptive and qualitative information, even so called "soft" (Beattie et al., 2008; ICAEW, 2003; FASB, 2001; ICAS, 1999; Lev et al., 1999; Wallman, 1995, 1996, 1997; AICPA, 1994).

In this sense we noticed an increase of content of information of the annual reports, in addition firms have begun to publish autonomous reports dealing with specific issues. We are speaking about social, environmental or, more generally, SES reports, that refer to corporate social responsibility (CSR) studies (Zadek et al. 1997). "Sustainability" and "CSR" are synonymous and they regard all the themes related to economic self-sufficiency, social and environmental externalities, corporate governance and employee conditions (Finch, 2005). In literature there are two main theories about CSR: the stakeholder theory and the legitimacy theory.

In the stakeholder theory (Freeman et al., 1983; Freeman, 1984; Moneva et al., 2000) entity is viewed as a social-economic institute connected to a complex of relations with several stakeholders whose interests are different, and in some cases, opposite. According to the legitimacy theory (Mathews, 1997; Adams, 1998; Patten, 2002) entity is in the centre of several contractual relations and it is interested in their continuation and maintenance.

These theories have provided incentive for the diffusion of information related to business policies and choices as to environment, society and stakeholders generally speaking (Mazzoleni, 2004). Communication has become one of the most important tools for stakeholders' involvement (customers, suppliers, community, public administration, environment, association, etc.) and for the legitimacy of economic activity done according to socially shared values (Buhr, 1998).

Wider disclosure is therefore useful to the changing information needs of the market and provides the information required for enhanced corporate transparency and accountability.

From the disclosure offer point of view, the situation is as follow. Annual reports have extended their contents with forward-looking information, information on the processes and the products, on the intangible assets, on the risks, on corporate governance (Botosan, 1997; Beattie et al., 2002; Beretta et al., 2004) and also with information related to sustainability matters (Moneva et al., 2000; Di Piazza et al., 2002; Llena et al., 2006). This social and environmental information has been summarised in the SES report (Gray et al., 1996). These documents specifically deal with social, environmental and economic externalities of business operations, matters which, in the years, companies have jointly faced according to a triple bottom line logic (Elkington, 1998). Despite the reports' contents are the same, they have different naming: social, sustainability, health, safety & environment, citizens and so on.

SES reports can refer to several standards, to both process and content ones. At an international level the AA1000 process standards and GRI reporting guidelines (Global Reporting Initiative) are the most important, nowadays GRI guidelines are collected into the IRIS metric that allow firms to evaluate their social, environmental and financial impact. There are also other specific guidelines for industries, such as the Global Reporting Initiative for Oil and Gas (GRI, 2012).

If for SES report there are specific guidelines, for “soft” information in annual report only in these last years start a phenomenon of systematisation of the disclosure principles.

A first step, for the European Companies, was the introduction of the Directive 2003/51/EC, which modifies the previous IV and VII Directives extending the information content of the management discussion section. With the adoption of this directive, the management discussion section includes a fair and thorough review of the development and performance of the company’s business and its position, together with a description of the principal risks and uncertainties that it faces. The review shall be a balanced and comprehensive analysis of the development and performance of the company’s business and its position, consistent with the size and complexity of the business. To the extent necessary for an understanding of the company’s development, performance, or position, the analysis shall include both financial and, where appropriate, non-financial key performance indicators relevant to the particular business, including information relating to environmental and employee matters.

At a later stage the IASB (2010) published the Practice Statement Management Commentary recently with the objective to find a synthesis point among the existing regulations concerning the “other information”, defined as “information provided outside the financial statement that assists in the interpretation of a complete set of financial statements or improves users’ ability to make efficient economic decisions” (p. 26). The guidelines identifies the framework and some content elements which make the narrative section a tool for containing information useful for the IFRS financial report users, mainly investors. The guideline introduce two important principles related to the materiality of the information and the modes of presentation. To this regard, in the perspective of the broadest financial reporting communication strategy, management commentary must limit redundancy and duplication of information. Looking at the suggested content elements, the IASB assumes that the narrative section must be coherent with the specific characteristics of the firm; however, even in this entity-specific context, some information elements are recognised as essential and generalizable to firms as a whole. They are connected with: (1) the nature of the business; (2) the objectives and strategies; (3) the resources, risks, and relationships;

(4) the results and prospects; (5) the performance measures and indicators used by the management to evaluate the company performances and the objectives achieved.

Finally, under the Directive 2014/34/EC referred to the non-financial and diversity information, European entities must include in the management report a non-financial statement containing the information necessary for a complete understanding of environmental, social and employee matters, respect for human rights, anti-corruption and bribery matters. Such information should include at least: (1) a brief description of the entity business model; (2) a description of the policies pursued by the entity in relation to those matters, including due diligence processes implemented; (3) the outcome of those policies; (4) the principal risks related to those matters linked to the operations including, where relevant and proportionate, its business relationships, products or services which are likely to cause adverse impacts in those areas, and how the undertaking manages those risks; (5) non-financial key performance indicators relevant to the particular business.

In addition several initiatives have been conducted to improve current reporting also related to the need of provide information in an “integrated way”. The most important effort were conducted by the International Integrated Reporting Council that talking about the integrated reporting. The IIRC states that integrated reporting “brings together the material information about an organization’s strategy, governance, performance and prospects, reflects the commercial, social and environmental context within which it operates. It provides a clear and concise representation of how an organization demonstrates stewardship and how it creates value, now and in the future. Integrated reporting combines the most material elements of information currently reported in separate reporting strands (financial, management commentary, governance and remuneration, and sustainability) in a coherent whole, and importantly: shows the connectivity between them; and explains how they affect the ability of an organization to create and sustain value in the short, medium and long term” (IIRC, 2011, p. 6).

Since the annual and SES reports exist contemporarily, we wonder if from the informative demand point of view there is any interest in reading both of the documents. Research has showed the importance of financial information also for non economic stakeholders (Gamble et al., 1995). Therefore these persons can find annual reports as a useful information tool to satisfy their knowledge requirements. On another hand researches (Hummels et al., 2004; Hockerts et al., 2004) have emphasized the role of social, environmental and sustainability information for financial stakeholders: for them SES reports can become a useful information tool in order to deal with social and environmental themes. An example in this sense is given by the presence of

investment funds that evaluate companies' ethic rating (e.g. SIRI Group, FP WHEB Sustainability Funds, CIS/Co-operative Investments Sustainable Funds, Jupiter Ethical Funds, F&C Stewardship Funds, Standard Life Ethical Funds, Council on Economic Priorities) and of stock indexes including "sustainable" companies, such as Dow Jones Sustainability World Indexes (DJSI) or FTSE for Good (FTS4GOOD).

Starting from a situation in which both the annual and SES reports were drawn up and in which annual report provide additional information related to the social, environmental and sustainability matters, the relation between these two reports still remains not investigated.

In this paper we want to analyse how annual reports and SES reports are related to each others, evaluating completeness and integration. We think that the need of transparency and accountability passes through the diffusion of useful information for the readers. If, for several reason also related to the impression management, companies drawn up both the periodical reports, then they should use it properly.

For this reason, we analyse firms' disclosure in light of completeness, intended as presence and complementarity of information. In addition we analyse the integration level of documents, intended as same concepts repetition absence. The repetition of same concepts in different reports causes information redundancy. From on point of view, information redundancy in periodical reports could be viewed as negative because it doesn't produce new knowledge in external readers and, by increasing material to analyse, it could make its elaboration more difficult. From another point of view, information redundancy could be interpreted as positive if the repetition is useful to focus and capture the attention of the users on content element considered important by the companies. Of course, a fully redundancy tend to reduce the content

relevance of the SES report, because it is not mandatory. Both these hypothesis stress the attention of the organisational role of the periodical report.

2.2 Research questions

The research intends to answer to following questions:

RQ1: What is the degree of presence of information?

RQ2: What is the degree of complementarities between the reports?

RQ3: Are the reports complete as far as relevant information for the readers is concerned?

RQ4: Are the analysed reports integrated?

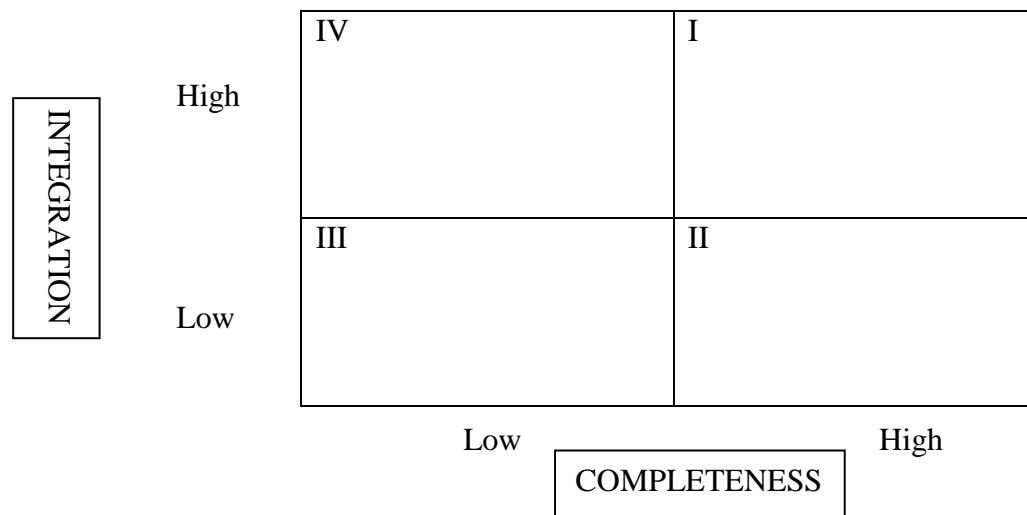
Since there is a system of reports in which annual and SES report are linked each other, we intend to analyse companies' disclosure behaviour by investigating their completeness and integration degree. By graphically representing two aspects, we obtain the following matrix (Figure 1).

In the quadrant I° there is a high presence of information and a high integration degree between reports: these are firms with an integrated system of reports, through which every report deal with specific matter, minimizing the repetitions.

Quadrant II° represents a situation of high information completeness as a whole. In the system of reports, the attention is on the content. The lack of integration could be justified looking at the need to convey the message using also the impression management.

Quadrant III° represents a questionable situation. A low level of completeness is added to a high repetition of little reported information. Finally, in quadrant IV° there are firms that use the tools integrating them, but with a scarce completeness level.

Figure 1. The analysis of the report system: completeness and integration possibility



3 Research method

3.1 Population analysed

The disclosure behaviour of the extractive petroleum companies is analysed. These companies are selected because of their particular attention to the financial and sustainability disclosures.

They operate in diverse geographical areas, they have a relevant management complexity and the information content of the periodical reports is subject to different national disclosure regulations. Remarkable investments lead extractive petroleum companies to have relevant dimensions further increased by the frequent merger and acquisition processes. The need of financial resources often lead extractive petroleum companies to the quotation. They are also fundamental actors of the global economic system. Finally they are greatly involved in CSR and because of the relevant social and environmental externalities they generate, these companies draw up often a SES report, over and above the annual report.

Subsequently extractive petroleum companies are particularly sensitive to information needs of external readers: investors and financial market readers and social-environmental readers. This belief is reinforced by the results of previous research (Quagli et al., 2005; PriceWaterhouseCoopers, 2002; FASB, 2001; Malone et al., 1993) that highlight the positive quality of the informative papers spread by the companies analysed. Anyway, previous studies move to an “atomistic” approach in the sense that none of those jointly combined the analysis of annual report and SES report, that remain an unexplored matter.

European extractive petroleum companies listed in the DJSTOXX 600 Europe index as from 30 June 2015 have been selected. The initial population of businesses numbered was ten: the analysis was performed on ten annual and ten SES reports of year 2014 present on the companies’ web sites. The companies analysed are reported in the Appendix 1 – Panel 1. As regard the annual report the analysis was on the narrative section; to that concern the sustainability topics, despite the different denomination of the report analysed (Corporate Responsibility Report, Sustainability report, Sustainability Development Progress Report, and so on) in the present research we use the notion of “SES report” as synonymous (Appendix 1 – Panel 2).

3.2 Methodology applied

The documentation available was investigated by disclosure-scoring analysis, partial form of content analysis (Robb et al. 2001; Vanstraelen et al. 2003; Llana et al. 2006; Teodori et al. 2006). The level of completeness and integrity between annual and sustainability reports has been summarised by a composite unweighted index of disclosure.

As regard the disclosure-scoring analysis, the categories and the individual items relevant for the readers of the annual and SES reports were selected (Beattie et al., 2004) looking at the industry specialization of non-financial disclosure (Buzby, 1974; Stanga, 1976; Cooke, 1989; AICPA, 1994). Emphasis was given to previous research and studies on the extractive petroleum companies (FASB, 2001; PriceWaterhouseCoopers, 2002; Quagli et al., 2005; Carini, 2009, FASB, 1982; SORP, 2001; SEC, 2005; CSA, 2006). To the completion of the social, environmental, and more generally, sustainability subjects, information variables included in the GRI Guidelines and in the IPIECA/API were considered¹. These guidelines have been used in previous research (Brammer et al., 2006) and are also far diffused for the writing up of sustainability reports in the extractive petroleum companies (Appendix 1 – Panel 3). Focusing exclusively on the extractive petroleum companies all the variables selected are ones potentially disclosed by these same (Botosan, 1997).

Because of the difficulty in assessing disclosure quality directly, the analysis assumes the amount of disclosure on specific topic proxies for the quality of the disclosure (Curtis, 1996; Marston et al., 1991; Beretta et al., 2004; Petersen et al., 2006). As a result, researchers tend to assume that the quality and the quantity of the disclosure are positively related. To evaluate the level of disclosure, the score 0/1 (yes/no) was attributed to each variable for their absence or presence, as they were all considered to be of equal relevance in terms of information. In previous research the weight of the single items was assessed by the implementation of a questionnaire survey (Malone et al., 1993). This methodology has not been applied in this paper due to the difficulty in identifying a manager with the adequate sensitiveness in evaluating the importance of the information both in the annual report and in the SES one.

During the pre-analysis stage the two researchers have selected a sample of two companies (ENI, BP) to carry out a test. Differences were noted and reconciled. Some refinements of the decision rule were necessary to clarify coders’ decisions. When agreement between coders was above 90 per cent, the main analysis began. The degree of disclosure was assessed preparing a detailed disclosure scoring system (Appendix 1 – Panel 4).

With reference to the second methodological aspect, the results were summarised by the following indexes of disclosure²:

¹ As regarding the guidelines the attention was focused on the variables included in previous version of GRI and IPIECA guidelines and not only in the G4 Oil & Gas (that collect both GRI and IPIECA) because of the wider detail degree of variables and the substantial comparison between them. To this point, in G4 Oil & Gas edition the used variables are all reported, but with more qualitative and descriptive requests and less details of variables.

² Variables investigated ($X = n. 251$) were divided into financial ($X^f = n. 158$) and sustainability ($X^s = n. 93$). The

$$a) C = Pi + Co$$

$$b) I = I-R$$

where:

$$Pi = \sum_{i=1}^n \frac{x_{iar}^f + x_{isr}^s}{X^f + X^s} / n$$

$$Co = \sum_{i=1}^n \frac{x_{iar}^{s*} + x_{isr}^{f*}}{X^f + X^s} / n$$

$$R = \sum_{i=1}^n \# \left\{ \frac{x_i / x_{iar} = x_{isr}}{X^*} \right\} / n$$

The analysis of the level of the integrated presence assesses the level of disclosure with reference to the financial and sustainability information included in the documentation naturally suitable to contain them: we have assumed that the financial information should be reported in the annual report and the social, environmental and sustainability information should be included in the SES report. To complete the analysis, the complementarities between the two reports were evaluated. The sustainability information included exclusively in the annual report was investigated and vice versa with reference to the financial one.

Subsequently the level of integration (I) was investigated, assessing this one by redundancy of the information (R). Redundancy is the joint presence of the information in both the investigated documents. For the purpose of the paper, we have assumed that the integration between annual and SES reports is inversely related to the level of redundancy.

While the level of integrated presence and complementarities was evaluated on the total number of the variables potentially communicable, redundancy was assessed exclusively on the information included in the reports investigated.

separation is based on the literature and guidelines consulted. As regards hybrid variables potentially considered financial or sustainability, main emphasis put on the sustainability subjects. In the indexes (n) is the number of the companies selected; (x_{iar}) and (x_{isr}) the effective variables in the annual and sustainability reports; (x_{iar}^f) and (x_{isr}^s) the effective financial and sustainability variables in the documentation naturally suitable to contain them; (x_{iar}^{s*}) and (x_{isr}^{f*}) the sustainability and financial variables included exclusively in the annual report and in the SES one; (X^f) and (X^s) the number of financial and sustainability variables; (X^*) the effective variables reported.

4 Empirical results and discussion

By document analysis (Table 1) a sensitive attention to the diffusion of information related to sustainability themes by annual reports is noticeable: the average presence equal to 44.5% confirms that in them there is several information beyond that specifically of accounting and financial. The dispersion of the results is relatively limited (21.4%), this means that there are companies that deeply treat the sustainability theme (max. 62.4%) and others that report less information on sustainability issue (min. 30.1%). The interesting fact is, however, of a comparative nature. Combining the results of the analysis to those obtained from previous studies (Carini et. al. 2007), there was a smaller dispersion supporting the thesis that over time has established a greater similarity in communicative behaviour, with a constant enrichment of the narrative section the annual report. This can be attributed to: the greater attention paid by the legislature to the disclosure, the emphasis placed by international accounting standards to the disclosure, with the publication of the Practice Statement Management Commentary, a cultural change in management with the extension of the content of the annual report using information related to multiple and varied aspects of business life.

Despite the presence of sustainability information³ in annual reports does not assume a high value, it has a wide meaning if we compared to the same indicator referred to SES reports (45.8%). The similarity of results emphasizes on one hand that firms give great importance to annual reports on sustainability items, on the other hand the result amazes as 15.8% of searched sustainability information is considered only in annual reports. These results have to be reorganized by considering hybrid variables: some sustainability information enclosed in annual reports is linked to risks information and operative indicators about social, environmental and sustainability items. Excluding hybrid variables, there is an important presence of sustainability information only in annual reports. We are speaking about “social” information: personnel dynamic, retribution policies, business ethics, activity in favour of local communities. Consequently stakeholders interested in thoroughly dealing with sustainability items have to refer necessarily to both of the documents: their joint reading allows to dispose of 60.3% of the total of researched information.

³ Referring to the variables included in Appendix 1, in the table the financial information is indicated with “F” and the social and sustainable information is indicated with “S”.

Table 1. The comprehensive situation

	$\frac{\sum_{i=1}^n X_{iur}^s}{n}$	$\frac{\sum_{i=1}^n X_{iur}^f}{n}$	$\frac{\sum_{i=1}^n X_{iur}^s}{n}$	$\frac{\sum_{i=1}^n X_{iur}^{fs}}{n}$	$\frac{\sum_{i=1}^n X_{iur}^{ss}}{n}$	$\frac{\sum_{i=1}^n \# \{ \frac{X_{iur}^s}{X_{iur}^s} \}}{n}$	<i>Pi</i>	<i>Co</i>	<i>C</i>	<i>I</i>
Mean	44,5%	51,6%	45,8%	1,6%	15,8%	25,7%	49,5%	6,9%	56,3%	74,3%
Median	44,1%	54,1%	49,5%	1,6%	13,4%	24,4%	52,0%	5,6%	58,0%	75,6%
Coefficient of variation	21,4%	17,2%	15,8%	78,5%	36,3%	21,8%	14,0%	35,6%	13,9%	7,5%
Max	62,4%	63,9%	53,8%	3,8%	26,9%	33,9%	59,0%	11,6%	70,1%	83,0%
Min	30,1%	37,3%	29,0%	0,0%	8,6%	17,0%	35,9%	4,4%	43,8%	66,1%

By extending comments to all financial variables and by investigating the completeness degree of the two documents, we can see that 56.3% of researched information is present.

The disclosure behaviour of observed population is homogeneous: variation coefficient is equal to 13.9%, with a maximum value of 70.1% and a minimum of 43.8%. The dispersion of results is lower than in other research papers (Teodori et al., 2004), this is due to strong similarity between firms and to high connection between researched variables and economic activity.

By separating completeness index it is interesting to observe that, in addition to an integrated presence of 49.5%, there is a meaningful even if not high complementarity between reports: 6.9% of reported information is present only in the document not directly concerned with treated issues. The greater weight on total result is imputable to sustainability information in annual reports (15.8%), the exclusive presence of financial information in SES reports is very low (1.6%).

SES reports don't reach a high disclosure degree because social and environmental information is limited to a 45.8%; more substantial are annual reports results, which report 51.6% of researched financial information. The dispersion of results from the average is more stressed with reference to SES reports (15.8%) than to annual reports (17.2%), this demonstrates that there are some firms that pay attention to social and environmental themes and others that are lacking in this point of view: the minimum score is equal to 29.0%.

By examining other aspects related to report relationships, a situation of incomplete integration (74.3%) due to a partial repetition of contents is noticeable: average redundancy of reported information in the documents is 25.7%; the low dispersion (7.5%) shows a similar disclosure behaviour between observed firms.

In a periodical reporting system, in which each document should respond to different communicative needs, a minimum repetition of information hoped for. The duplication doesn't bring new knowledge to the reader of both the documents and, enlarging

information quantity, it could make the elaboration more complex.

It's important to underline that, by considering the requests of sustainability reporting guidelines, a little redundancy of information is inevitable. That which appears disputable and accordingly improved is the inclusion of sustainability matters in annual reports, mainly for firms as those analysed that draw up specific reports to contain them.

From Graph 1 we can briefly understand the relationship between the two documents in terms of completeness and integration per analysed population. We can observe that there is a scarce completeness of information in documents with a partial integration.

If we analyse the categories (Table 2):

- the social category is the most complete (69.2%), and the least integrated (55.9%). Despite 67.5% of researched information is in SES reports, annual reports limited treat the theme (29.2%) reporting without hybrid variables 1.7% of information in an exclusive way (Graph 2). If research in older (Carini et al. 2007; Teodori et al. 2004) there was confirmation that the variable capital was also present in the Annual Report, in recent years is unfolding effort to separate the presence of information using the most appropriate report. The high level of redundancy (equal to 44.1 % of the reported information) should not mislead. In fact, often the information is simply mentioned in the Annual Report, and with this present. However the true depth occurs in the SES report.

- The completeness of environmental profiles (39.6%) and personnel, health & safety profiles (52.4%), could be amazing if compared to that reached by social profiles. These two profiles, as shown for the social one, are connected by a low integration: redundancy level of information on personnel, health & safety is equal to 57.4% while that linked to environment is equal to 48.2%. In conclusion for social, environmental, personnel, health & safety categories we have found the lowest degree of integration between the two documents, because part of considered information is reported also in annual reports.

Graph 1. The relation between annual and SES reports among companies: comprehensive situation

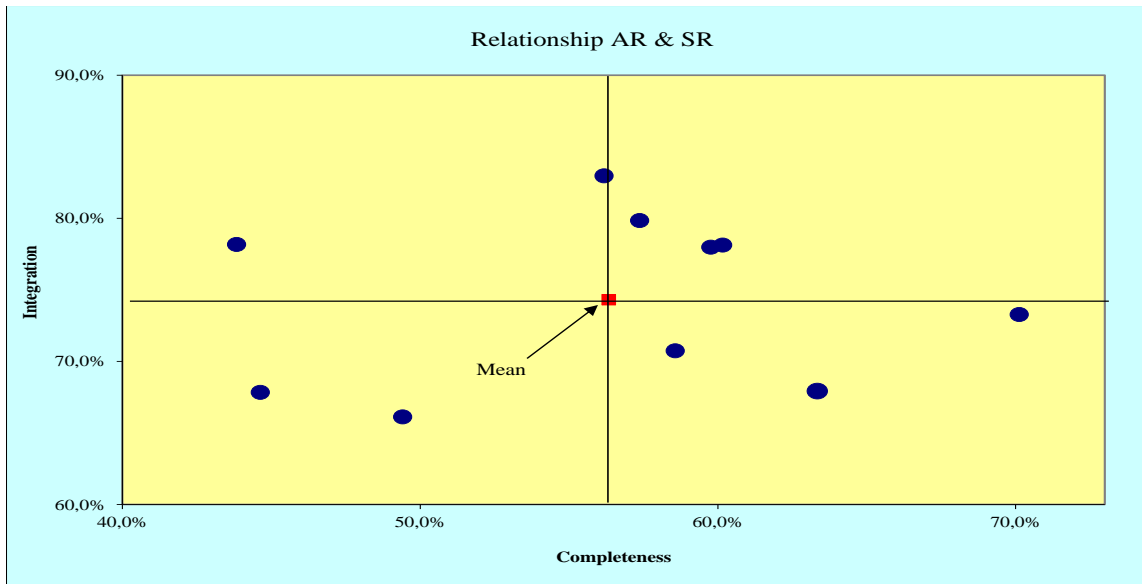
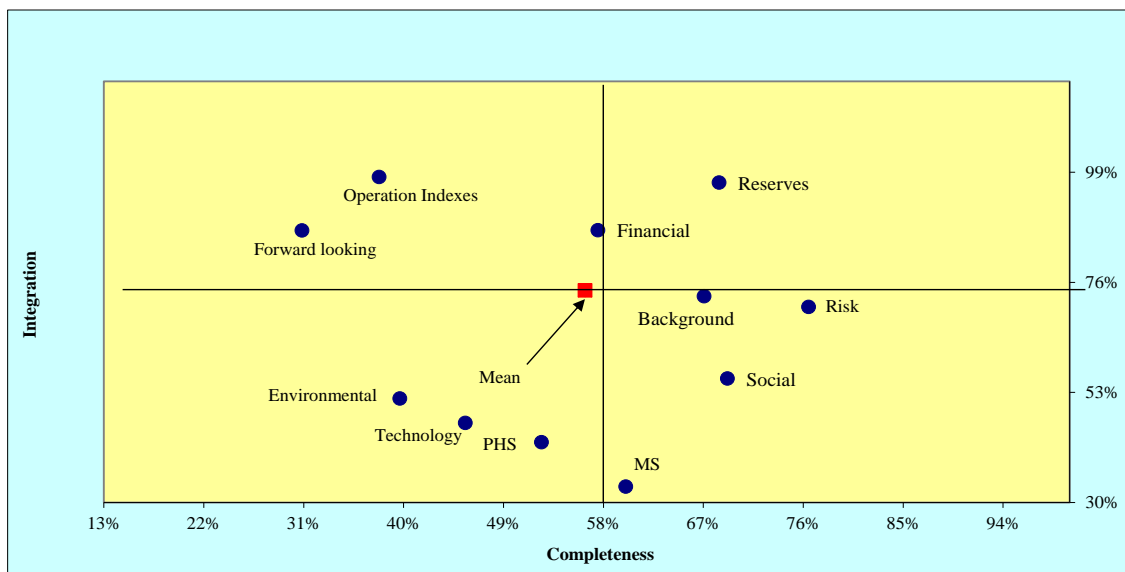


Table 2. The category situation: mean results.

	$\frac{\sum_{i=1}^n X_{isr}^s}{X^s} / n$	$\frac{\sum_{i=1}^n X_{isr}^f}{X^f} / n$	$\frac{\sum_{i=1}^n X_{isr}^s}{X^s} / n$	$\frac{\sum_{i=1}^n X_{isr}^{f*}}{X^f} / n$	$\frac{\sum_{i=1}^n X_{isr}^{s*}}{X^s} / n$	$\frac{\sum_{i=1}^n \#(X_{isr}^s / X_{isr}^f = X_{isr}^s)}{n}$	P_i	Co	C	I
Background	83,8%	59,6%	60,0%	1,2%	27,5%	26,9%	59,7%	7,4%	67,1%	73,1%
Forward-looking	0,0%	29,6%	0,0%	1,3%	0,0%	13,1%	29,6%	1,3%	30,8%	86,9%
Risk	61,1%	90,0%	23,3%	0,0%	41,1%	29,1%	54,7%	21,8%	76,5%	70,9%
Operational index	30,0%	40,0%	3,3%	1,7%	26,7%	2,0%	27,8%	10,0%	37,8%	98,0%
Reserves	100,0%	65,9%	3,3%	0,2%	96,7%	3,2%	61,6%	6,8%	68,4%	96,8%
Financial	97,5%	53,1%	30,0%	0,0%	67,5%	13,1%	50,8%	6,8%	57,5%	86,9%
Technology	0,0%	34,4%	0,0%	11,1%	0,0%	53,3%	34,4%	11,1%	45,6%	46,7%
PHS	36,4%	10,0%	47,5%	10,0%	6,1%	57,4%	46,2%	6,2%	52,4%	42,6%
Social	29,2%	0,0%	67,5%	0,0%	1,7%	44,1%	67,5%	1,7%	69,2%	55,9%
Environmental	25,7%	1,4%	48,6%	8,6%	1,0%	48,2%	36,8%	2,9%	39,6%	51,8%
MS	46,0%	0,0%	54,0%	0,0%	6,0%	66,7%	54,0%	6,0%	60,0%	33,3%

Graph 2. Integration and completeness between reports



- Despite the completeness degree of reserves category assumes a value of 68.4% of researched information, this aspect is considered exhaustive only in part: a greater presence of researched information is found only for those firms that have to communicate this information in a mandatory way. The main communicative gaps are found in correspondence of information on the economic value of reserves. As to integration, the reserves category is well structured, because of a scarce redundancy (3.2%).

- Despite a presence of 67.1% of researched information, for background category there is a redundancy equal to 26.9% of present information. We have to evaluate this data by considering that some variables have to be reported in annual reports and that at the same time they are requested by guidelines used for SES report drawing up. So, the negative judgements have to be mitigated by not considering the integration lack, but the key role played by this information in both the reports.

- Same opinion for the economic-financial category. Totally, 57.5% of researched information is reported in examined documents; the integration level (96.8%) also in this case is affected by the compulsory nature of this information in annual and SES reports.

- Categories related to operational indicators (37.8%) and to technology (45.6%) are the less complete, especially if we consider their importance in petroleum companies communication. We must also underline that all information on operational indicators, including some referred to sustainability, is reported in annual reports.

- The completeness of risks profiles (76.5%) it is really high. The result is not surprising considering the significant attention devoted to the subject by the legislature. With reference to this category, the most part of information is in annual reports, including some information related to the sustainability side (41.1%). The integration degree is similar between the investigated categories.

- Looking at the strategies (30.8%) is established upon limited values.

- Finally, the management system category is integrated lowly (33.3%) and not always treated in an exhaustive way (60.0%). In addition, we observe that the most part of information is in the sustainability reports (54.0%) even if annual reports reading allows to increase disclosure level of 6.0%.

5 Conclusions and implications

The paper has analysed the relationship between annual and SES reports of the extractive petroleum companies: the composite index of disclosure has highlighted only a partial information completeness and integration between the reports.

As regards the first topic, the completeness, forward-looking information, operational indicators and technology innovation categories should be improved. While the social information and personnel,

health & safety is fully disclosed, environmental information is less deepened. Partly as a result of regulatory changes and the changed culture of communication, a lot of attention is paid to the sustainability topics also in the annual reports. Consequently, there has been an increase in the level of completeness, related to the possibility to improve the communication between companies and stakeholders.

What emerge to a deeper analysis it is related to the presentation of the information in the two reports analysed. In particular, there has been a growing communicative behaviour that sees social, environmental and personnel information mentioned in the annual report, referring to SES reports for further analysis. The latter is the report intended to address fully and comprehensively the issues in question. The presence of redundancy, it is often linked precisely to the postponement between documents. In a reporting system in which each document should be oriented to specific topics, a limitation of the social and environmental subjects in the annual report seems suitable, and instead there should be forwarding a report to the SES. In this situation redundancy is not a negative factor.

However, this situation is not present in any case examined. In fact, in some cases the empirical analysis of the two documents highlights a partial integration. A greater coordination among the functions of the companies responsible for drawing up the reports or the introduction of a new manager with the necessary skills both in financial and sustainability topics should help the development of more completed and coordinated reports. In addition, the development of regulation that specifically share sustainability information between annual and SES report could be a way to increase disclosure level, to reduce information asymmetry and to improve reports integration, so that every stakeholders could find relevant information in dedicated documents.

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Appendix 1. Panel 1. Population analysed

Companies	Economic activity
BP	Integrated
ENI	Integrated
Galp Energia	Integrated
Lundin Petroleum	Upstream
OMV	Integrated
Repsol YPF	Integrated
Royal Dutch Shell	Integrated
Statoil	Integrated
Total	Integrated
Tullow Oil	Upstream

Appendix 1. Panel 2. Naming of SES reports for petroleum companies

NAMING OF REPORT
Sustainable Development Progress
Sustainability Report
Sustainable Growth Report
Corporate Responsibility Report

Appendix 1. Panel 3. SES reports guidelines

GUIDELINES
G4 Sustainability Reporting Guidelines
Global Oil and Gas Industry Association for Environmental and Social Issues (IPIECA)
Extractive Industries Transparency Initiative (EITI)

Appendix 1. Panel 4. Selected variables

	Background			Financial information	
a)	<i>Environmental contest</i>		a)	<i>Economic and financial indexes</i>	
1	General economic environmental	F	1	Returns of investment and equity indexes	F
2	Extractive petroleum industry economic environmental	F	2	Leverage and gathering ratios	F
3	Geopolitics environmental	F	3	Earning and dividend per share	S
4	Industry evolution	F	4	Payout, P/E, P/BV ratios	F
5	Industry regulation	F	5	Value indexes	F
6	Demand and supply oil and gas dynamic	F	6	Cost of capital indexes	F
7	Oil and gas prices	F	7	Companies ranking	F
8	Presentation of the of main competition industry elements	F	8	Benchmark indexes	F
b)	<i>Companies situation</i>		9	Cash flow indexes	F
9	History of the companies	F	10	Cost indexes	F
10	Countries of operation	S	b)	<i>Investments</i>	
11	Business identity	S	11	Total investments upstream	F
12	Mission and strategic plan	S	12	Upstream research costs	F
13	Vision and value	S	13	Licence acquisition investments	F
14	Year's highlight	S	14	Exploration investments	F
15	Letter to shareholder or stakeholder	S	15	Development investments	F
16	Glossary	F	16	Field acquisition investments	F
17	Comparison with <i>competitor</i>	F	17	Research and development costs	F
18	Relations with <i>competitor</i>	F	18	Financial investments	F
19	Collaboration agreements	S	19	Other general investments	F
20	Efficiency driver	F	c)	<i>Other information</i>	
21	Curriculum vitae board of directors and main manager	F	20	Oil and gas prices used to evaluate investments	F
22	Organizational chart and structure	S	21	Share performance	F
23	Fields acquisition	F	22	Operation on share	F
24	Fields disposal	F	23	Analysts evaluation	F
25	Licence acquisitions	F	24	Agency rating	F
26	Recovery of fields	F	25	Financial operation	F
27	Development of fields	F	26	Dynamic of the main financial and economic results	F
28	Positive explorations	F	27	Operational results	F

29	Negative explorations	F	28	Financial cash flow	F
30	Discovery of new fields	F	29	Turnover	S
31	Presentation of the extractive activity	F	30	Upstream costs	F
32	Reserves revision	F	31	Operating income	F
33	Product Sharing Agreement	F	32	Impairment of upstream activities	F
34	Transportation of mineral resources	F	33	Decommissioning costs	F
	Forward looking information		34	Interests costs	S
1	Presentation of the general strategy	F	35	Tax expenses	S
2	Turnover/Market share targets	F	36	Public contributes	F
3	Economic and financial targets	F	d)	<i>Intercompany operations</i>	
4	Strategically partnership	F	37	Presentation of the operations	F
5	Exploration planned	F	38	Financial and economic results	F
6	Costs of exploration planned	F	39	Amount of the operations	F
7	Licence acquisition planned	F	40	Prices and contractual conditions	F
8	Costs of licence acquisition planned	F		Technology innovation	
9	Perforation of the main field planned	F	1	Technology culture	F
10	Costs of perforation of the main field planned	F	2	Technology investment policies	F
11	Field development planned	F	3	Technology implemented	F
12	Costs of field development planned	F	4	Trend in the industry technology	F
13	Recovery of additional mineral resources planned	F	5	Technology innovation	F
14	Costs of recovery of additional mineral resources	F	6	Technological partnership	F
15	Acquisition of new field planned	F	7	Target and benefit technological project	F
16	Costs of acquisition of new field planned	F	8	Costs of technological project	F
17	Disposition of field	F	9	Feasibility of the technological project	F
18	Return of disposition of field	F		Personnel, health & safety	
19	Increase in the mineral resources planned	F	a)	<i>General information</i>	
20	Extraction program	F	1	Information about employees	S
21	Timeline of the main projects	F	2	Employment type (full time/part time), contract (indefinite or permanent/fixed term or temporary).	S
22	Project and target achieved	F	3	Employee benefits beyond those legally mandated.	S
23	Project and target not achieved	F	4	Description of human resource strategy	S
24	Project and target deferred	F	5	Standard compliance with human resource standard (SA8000, ILO)	S
	Risks		b)	<i>Skills and training</i>	
a)	<i>General presentation</i>		6	Hiring/displacement	S
1	Risk management policy	F	7	Hiring politics	S
2	Risk management organisation	F	8	Training politics (hours, intervention per project, etc)	S
b)	<i>Operational risks</i>		9	Local Employment opportunities	S
3	Typology	F	c)	<i>Retribution politics and industrial relations</i>	
4	Time/probability/impact	F	10	Incentives politics	S
5	Prevention	F	11	Result benefits	S
c)	<i>Financial risks</i>		12	Litigation with employees	S
6	Typology	F	13	Union presence	S
7	Time/probability/impact	F	d)	<i>Employees satisfaction indicators</i>	
8	Prevention	F	14	Absenteeism	S
d)	<i>Legal and contractual risks</i>		15	Strikes hours	S
9	Typology	S	16	Employees turnover	S
10	Time/probability/impact	S	17	Initiative to monitor employees satisfaction	S

11	Prevention	S	18	Initiative to improve work environment	S
e)	<i>Environmental risks</i>		e)	<i>Health and safety</i>	
12	Typology	S	19	Number of illness and accident	S
13	Time/probability/impact	S	20	Illness Rates	S
14	Prevention	S	21	Politics or programmes for health and safety	S
f)	<i>Health and safety risks</i>		22	Investment for politics or programmes for health and safety	F
15	Typology	S	f)	<i>Other information</i>	
16	Time/probability/impact	S	23	Decisional process engagement	S
17	Prevention	S	24	Restructuring plan that involve employees changes	S
	Operational indexes		g)	<i>Not discrimination and children labour</i>	
1	Exploratory and appraisal fields	F	25	Global politics and procedures to prevent discrimination in organization activity	S
2	Development fields	F	26	% employed woman	S
3	Success rate of the exploratory activities	F	27	Litigation due to discrimination	S
4	Reserves replacement rate	S	28	Programs to help minority and disadvantages people	S
5	Extraction rate main fields	S	29	Respect of laws about children and forced work	S
6	Extraction rate new fields	F		Social information	
7	Productivity of the main fields	F	1	Relation with stakeholders	S
8	Reserves life	S	2	Future objectives in stakeholders relations	S
9	Reserves replacement cost	F	3	Stakeholder involvement	S
	Reserves information		a)	<i>Human rights</i>	
	<i>Reserves quantity</i>		4	Politics and programs to respect human right	S
a)	<i>Reserves categories</i>		b)	<i>Social engagement</i>	
1	Proved Reserves developed	S	5	Social investments	S
2	Proved Reserves undeveloped	S	6	Financing of non profit and humanitarian organizations	S
3	Probable Reserves	F	7	Intervention and initiative for social/cultural development	S
4	Other Reserves	F	8	Donations to community, civil society and others groups	S
b)	<i>Quantity</i>		9	Voluntary codes adoption, awards about CSR, etc	S
5	Beginning of the year	F	c)	<i>Business Ethics</i>	
6	End of the year	F	10	Transparency of payments to governments	S
7	Revision	F	11	Politics and programs against the corruption	S
8	Recovery	F	12	Politics and programs to manage political contribution and lobby	S
9	Field acquisition	F		Environmental information	
10	Field disposition	F	a)	<i>General information</i>	
11	Extension of the field	F	1	Protocols, convention about environment protection	S
12	Discovery	F	2	Environmental investment and expenses	S
13	Total extraction	S	b)	<i>Raw materials</i>	
14	Extraction main field	F	3	Total materials use other than water, by type.	S
15	Extraction for geographic area	F	4	Percentage of materials used that are wastes (processed or unprocessed) from sources external to the reporting organisation	S
16	<i>Mineral resources quality</i>	F	5	Costs of raw material	F
17	<i>Unit of measurement</i>	F	c)	<i>Energy</i>	
18	<i>Year of disclosure</i>	F	6	Direct and indirect energy use segmented by primary source.	S
	<i>Reserves value</i>		7	Initiatives to use renewable energy sources and to increase energy efficiency.	S

c)	<i>Reserves categories</i>		8	Cost of energy use	F
19	Proved Reserves developed	F	9	Investment for initiatives to use renewable energy sources.	F
20	Proved Reserves undeveloped	F	d)	<i>Water</i>	
21	Probable Reserves	F	10	Total water use.	S
22	Other Reserves	F	11	Water sources and related ecosystems/habitats significantly affected by use of water.	S
d)	<i>Determinants of value</i>		12	Total recycling and reuse of water.	S
23	Future cash flow	F	13	Investments for recycling and reuse of water	F
24	Future development costs	F	14	Cost of water use	F
25	Future production costs	F	e)	<i>Biodiversity</i>	
26	Future decommissioning costs	F	15	Total amount of land owned, leased, or managed for production activities or extractive use.	S
27	Future income tax expenses	F	16	Location and size of land owned, leased, or managed in biodiversity-rich habitats.	S
28	Discount rate	F	17	Description of the major impacts on biodiversity associated with activities and/or products and services in terrestrial, freshwater, and marine environments.	S
29	Moment of factor selection	F	18	Changes to natural habitats resulting from activities and operations and percentage of habitat protected or restored.	S
e)	<i>Change in the Reserves value</i>		19	Objectives, programmes, and targets for protecting and restoring native ecosystems and species in degraded areas.	S
30	Beginning of the year	F	20	Costs and investments for programmes, objectives for protecting and restoring native ecosystem and species in degraded areas.	F
31	End of the year	F	f)	<i>Emissions, spills and wastes</i>	
32	Revision	F	21	Emissions of greenhouse gas (direct and indirect), of ozone-depleting substances, of NO _x , SO _x , and other significant air emissions by type.	S
33	Recovery	F	22	Initiative to reduce emissions	S
34	Field acquisition	F	23	Total amount of waste by type and destination	S
35	Field disposition	F	24	Recycled waste	S
36	Extension of the field	F	25	Significant spills of chemicals, oils, and fuels in terms of total number and total volume.	S
37	Discovery	F	26	Water sources and related ecosystems/habitats significantly affected by discharges of water and runoff.	S
38	Total extraction	F	27	Costs related to decommissioning activities to restore the environment	F
39	Change in the factor of the Reserves value	F	28	Incidents and fine for environmental damage	S
40	Change in the income tax expense	F		Management system information	
f)	<i>Aggregation</i>		1	Management system implemented	S
41	Total	F	2	Objectives of management systems	S
42	Geographical area	F	3	Effectuated certification (ISO 14001, etc)	S
43	Main fields	F	4	Obtained management systems reviews	S
44	<i>Year of disclosure</i>	F	5	Involvement for supplier and contractors in management systems	S