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SUPPLY CHAIN MANAGEMENT IN THE SUSTAINABILITY REPORTS: A KEY FACTOR FOR CORPORATE SOCIAL RESPONSIBILITY

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ABSTRACT. A corporate social responsibility begins with good process management that is, managing the sustainability along the supply chain. It comes to managing the flow of materials, information and capital, as well as cooperation between companies in the supply chain, taking into account environmental and social goals, as each organization could influence the reputation and performance of the rest. A tool to inform and communicate this management is through sustainability reports, although, for this it is necessary to improve the way to convey this information. Thereby, in this paper, we propose a model to present the sustainable information of supply chain supported by economic, social and environmental dimensions. In order to develop it, we have performed an analysis of the responsibility reports of different companies to determine the key factors that we must be considered. Lastly, we have contrasted the proposal with a larger sample of companies, testing the quality of information provided using statistical techniques.

Key words: Corporate social responsibility reports; sustainable supply chain management.

JEL Classification: M1

1. Introduction

The management of risks related to social, environmental and ethical issues has become a concern for businesses, governments, citizens, investors

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and for society as a whole. In what is known as the triple bottom line, new approaches have emerged to improve the social responsibility of companies, through driving improvements in the economic, social and environmental impacts of organisations (Carter & Rogers, 2008 and Vandaele & Decouttere, 2013). These reports serve as a barometer of the organisation to find out their attitudes toward social and environmental responsibility, and the integration of both corporate and functional strategic plans (Jose & Lee, 2007), for example, in the supply chain management (SCM). In this sense, the presentation of information on the sustainability of the supply chain can be a valuable tool for the identification and management of risks and opportunities, as well as monitored by performance indicators of sustainability. In this sense, in this paper we propose a model to report information about the supply chain for the electric utilities industry. Although each sector may require specific information, much of the proposed indicators may be valid for other sectors.

Electric utilities provide essential and vital services to society and users. Economic development must be achieved in a sustainable way in order to protect key resource systems, and to provide for future generations. Specifically within the electric utility sector, a number of factors are fundamental in determining an electric utility's economic, environmental, and social sustainability performance as the generation, transmission, and distribution of electricity utilizes natural resources. Thus, an information model for supply chain responsibility reports should be based on its two dimensions: social and environmental. This model should allow in the firms disclose their supply chain policies and practices regarding the products and services they purchase or contract when these policies and practices are relevant to sustainability issues. Typically, these policies and practices include capacity building in suppliers and contractors, workplace safety, waste disposal, protection of human rights, regulatory compliance and remediation efforts undertaken. Therefore, in this paper we analyze the concept of supply chain sustainability applied to electric utilities, we develop a literature review and we propose an information framework on supply chains in the responsibility reports.

2. SSCM background. A model to electric utilities sector

Sustainable supply chain management (SSCM), according Seuring & Müller (2008), is the management of materials, information and capital flows, as well as cooperation between companies throughout the entire chain, where the objectives of the three dimensions of sustainable development: economic, environmental and social are integrated. This is, to be sustainable all members of the supply chain must satisfy the environmental and social criteria.

Literature on the supply chain, strategies of social and environmental responsibility, advantages of the inclusion of this information in sustainability

reports and the benefits of its reporting to the social image of the organisation, is quite broad. In contrast, there are few works focused on studying the sustainability of the supply chain and informing the different stakeholders. However, we should mention the major contributions made. Seuring & Müller (2008) conducted a review of the literature to establish a framework for the SSCM concept and later Seuring (2013) carried out a study of the quantitative models that have been made. Carter & Rogers (2008) provided a theoretical framework to apply the triple-bottom line in defining sustainable supply chain management. Pagell & Wu (2009) studied the case of 10 exemplary companies to establish a model that captures the necessary elements for a SSCM, as well as guidance for the responsible management of the supply chain edited by Compact Spanish Network UN World (2009).

Recent research on corporate responsibility has focused on specific cases, dimensions, countries or relevant sectors (Bouquet & Deutsch, 2008; Kortelainen, 2008), or has remained very general focusing on the principles and foundations. This is highlighted by the general application by Tate et al. (2010) for an analysis of social responsibility reports of 100 companies from different sectors and regions applying a content analysis technique that provides a snapshot of ten issues related to the internal and external operations of the supply chain. Additionally, there are studies on sustainable supply chains for particular sectors such as agro-food (Soosay, et al., 2012) and (Svensson & Wagner, 2012). From an empirical point of view the works have focused on considering SSCM practices in different countries: China (Zhu et al. 2005), Germany (Large & Gimenez, 2011), Russia (Smirnova et al. 2011), New Zealand (Ozanne & LeCren, 2011), UK (Walker & Jones, 2012), Spain (Ecodes, 2012) and Italy (Gualandris & Kalchschmidt, 2014) and in different sectors: electronics (Neto et al. 2010), automotive (Sharma et al., 2010), textiles (Gualandris & Kalchschmidt, 2014) and ICT (Nevado et al. 2013).

Appling SSCM in the electric utilities sector involves specifying some peculiarities. Thus, we must consider economic factors such as adequate financial resources to meet the investment in new equipment and maintenance of existing infrastructure along with research and development of sustainable electricity generation, transmission and distribution. Taking into account the environmental factors, electric utilities are among the largest consumers of fossil fuels in the world, making fuel use/mix an increasingly important environmental concern. Considering the social factors, electric utility assets and activities are often of a large scale, potentially impacting neighboring and distant communities. Thus addressing workforce and safety issues are vital to the electric utilities' performance, since a qualified staff is fundamental to ensuring safe and reliable electricity services.

Moreover, there is emerging issues in this sector that they require special attention such as (Global Reporting Initiative (GRI): G4 Electric Utilities Sector Disclosures):

- *Electric utility sector regulatory and market structure***.** Electric utilities often operate in a heavily regulated environment, which may vary across operations geographic locations. In particular, implications of privatization, market structure, tariffs, governmental requirements and planning should be considered in the reporting.
- *Stakeholder engagement*. As providers of an essential service and as users of natural resources, stakeholders expect electric utilities to build trusting relationships with stakeholders in order to operate legitimately and sustainably. Specific areas for consideration include: stakeholder identification, means of engagement, level and weighting of stakeholder representation in decision making processes.
- *Contracts*. Electric utilities are often able to use their market presence and purchasing power to influence the social and environmental policies and practices of their suppliers and contractors. In fact in some cases, many of the major social and environmental impacts occur well upstream or downstream of the reporting organization's operations (e.g., upstream fuel supply issues as well as downstream end of life considerations regarding electricity use).

3. A model to report information about the supply chain

In this section, we develop the model or framework of information that companies should incorporate in their reports on the sustainability of the supply chain. In this regard, the first idea is that due to the importance and significance of this issue, there must be an exclusive section dedicated to reporting the sustainability of the supply chain, where all the related information is displayed. The methodology used in this proposal is:

1. Select a pilot group of 10 companies in the energy utilities sector and perform an in depth analysis of the social responsibility reporting and available publications (sustainability reports, policies, etc.) related to the supply chain for 2012-2013. To this end, we chose the most representative social responsibility, based on: a) the criteria for sustainability rating agencies as EIRIS and Asset 4; b) the sustainability indices such as the Dow Jones Sustainability and FTSE4GoodIbex; c) the existence of initiatives or innovative practices, supported, recognised or rewarded by organisations specialising in the subject and in particular that stand out in the information provided concerning the supply chain; d) the presentation of sustainability reports following the criteria of the GRI, which is the most widespread and demanding internationally.

In short, companies that finally make the target group are: EDP, Gas Natural Fenosa, E.ON, Enel, Duke Energy Corp, Iberdrola, Endesa, NextEra Energy, IRPC, and Snam.

2. Undertake a review of the theoretical literature and, as mentioned, an analysis of the information submitted by major companies in the sector. Therefore, it is considered that the information to be included in sustainability supply chain reports must be based on the strategic objectives set by the organisation for its chain. In this sense, this information should be presented in the two dimensions of sustainability: social and environmental issues, and also grouped into the following sections:

- Model of governance and transparency. Reports on the policy and management model based on: sustainability, transparency, competition and equal opportunities, objectivity, unanimity in the adjudication of decisions, dedication to the service of customers and internal and external suppliers and fulfilment of commitments.
- Risk management. Tests whether criteria exists to define the risk from providers, according to the product and service they provide, by location, priority of suppliers.
- Monitoring. That there is risk oversight of suppliers. That is, consideration of environmental and social certifications, monitoring procedures and corrective and preventive actions related to the supply chain, tools for the assessment, etc.
- Compliance and follow up information through supplier audits, internal or external. Indication of the level of compliance audits or other methods at different levels and monitoring of them (performance figures, temporal evolutions, etc.)
- Culture of Sustainability. Sustainable progress is based on the creation of value. Whilst providers are strategic partners it is still advisable to have a policy of training and communication teams for suppliers and partners.
- Commitment to stakeholders. Concerning the compliance policy management and invoice payment terms, financial support to suppliers, collaboration with other organisations to improve the sustainability of the supply chain, etc.

3. For each of the previous sections **quantitative or qualitative information is collected** that could be included in sustainability reports. To establish this model the information required by different agencies such as the GRI has been taken into account. In other cases, complementary quantitative and qualitative indicators have been proposed, which should provide for better information and management of the supply chain sustainability.

In order to measure the degree of provision of information by the companies, all this information has been catalogued in indicator format, using the name and symbols used by the appropriate agency, for example, by the GRI (G4- number, EC, EN, LA, HR, SO, PR and EU energy utilities sector disclosures). For the proposed indicators, the terminology used was: IM for

environmental indicators, and IS for social. Thus, Tables 1 and 2 present the proposal of information that should be incorporated by the energy utilities sector organisations for SSCM.

Table 1.

Environmental dimension for Supply Chain

	Middle	High
Governance and transparency	**G4-15.** List externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses. **IM 1**. Existence of codes of conduct (ethical) to the purchasing function, suppliers or, where appropriate questionnaires.	**IM 2**. Information on compliance and monitoring requirements of the codes of conduct.
Risk Management	**G4-12.** Describe the organization's supply chain. **IM 3**. Report if providers comply with the principles of the UN Global Compact in environment **IM 4**. List of suppliers. Establishment of ranking (e.g. by risk type) **IM 5**. Importance attached to compliance with the requirements by the supplier.	**G4-13.** Report Changes in the location of suppliers, the structure of the supply chain, or in relationships with suppliers, including selection and termination. **IM 6**. Select suppliers with environmental management systems, or benefiting from some indexes such as *'Roundtable on Responsible Soy', 'Roundtable on Sustainable Palm Oil'.*
Monitoring / supervision of supplier risk	**IM 7**. List of environmental certifications or certification systems, or other approaches to auditing / verifying the information in their supply chain. **IM 8**. Information on emissions from the supply chain, especially from suppliers and assurances of action to protect the environment.	**IM 9**. Number of suppliers who have a certification (e.g. ISO 14001 or ISO 26000) **IM 10**. Monitoring procedures and corrective and preventive actions, including those related to the supply chain
Compliance, monitoring and control	**IM 11**. Performing Audits. **IM 12**. Number of certified suppliers / total number of strategic suppliers for large companies. **EN 32.** Percentage of new suppliers that were screened using environmental criteria.	**IM 13**. Number of audits per year and for all countries. **EN 33.** Significant actual and potential negative environmental impacts in the supply chain and actions taken. **IM 14**. Number of contracts extinct as a consequence of defaults.
Sustainability culture	**IM 15**. Communication channels of suppliers to the company and vice versa: surveys, tools to ask questions, report incidents or irregularities, suppliers portal.	**IM 16**. Policy training and continuous improvement in environmental suppliers.
Stakeholders commitment	**G4-16.** List memberships of associations (such as industry associations) and national or international advocacy organizations in which the organization. **IM 17**. To make alliances or to belong to partnerships such as BETTERCOAL.	**IM 18**. Agreements between sector companies to standardise criteria and environmental requirements for the recruitment process.

Source: Own elaboration.

Table 2.

Social dimension for Supply Chain

	Middle	High
Governance and transparency	**G4-15.** List externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses. **IS 1**. Codes or terms of contracts with suppliers. **IS 2**. Information about the commitment to respect human rights.	**IS 3**. The company protects workers' rights concerning freedom of association, the right to belong to a union and participate in collective bargaining. **IS 4**. Company commitment to respect human rights, equally in the activities taking place in the country of origin and any other country where it carries on business.
Risk Management	**HR 6 /HR 5**. Operations and suppliers identified as having significant risk for incidents of child labour, and measures taken to contribute to the effective abolition of child labour. **HR 7 /HR6.** Operations and suppliers identified as having significant risk for incidents of forced or compulsory labour, and measures to contribute to the elimination of all forms of forced or compulsory labour.	**HR 5 /HR 4.** Operations and suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and measures taken to support these rights. **IS 5**. Existence of internal documents, specific mechanisms implemented to manage and monitor that no forced or compulsory labour or child exploitation is used.
Monitoring / supervision of supplier risk	**HR 1**. Total number and percentage of significant investment agreements and contracts that include human rights clauses or that underwent human rights screening. **IS 6**. List of performance certifications, certification of prevention management systems, human rights or product liability (e.g. health and safety OHSAS 18001 and SA 8000 for the rights of workers).	**IS 7**. Information about policies of providers' control of human rights that include specific management systems, involving obligations and compliance verification systems.
Compliance, monitoring and control	**IS 8**. Performing Audits. **LA 14**. Percentage of new suppliers that were screened using labour practices criteria. **HR 10**. Percentage of new suppliers that were screened using human rights criteria. **SO 9**. Percentage of new suppliers that were screened using criteria for impacts on society.	**IS 9**. Indication of level of compliance about audits in human resources, health and safety. **LA 15.** Significant actual and potential negative impacts for labour practices in the supply chain and actions taken. **HR 11.** Significant actual and potential negative human rights impacts in the supply chain and actions taken. **SO 10.** Significant actual and potential negative impacts on society in the supply chain and actions taken.
Sustainability culture	**IS 10**. Communication channels of suppliers to the company and vice versa: surveys, tools to ask questions, report incidents or irregularities, suppliers portal.	**IS 11**. Policy training and continuous improvement to suppliers in human rights and labour practices. **EU 18.** Percentage of contractor and subcontractor employees that have

	Middle	High
	EU 17. Days worked by contractor and subcontractor employees involved in construction, operation & maintenance activities.	undergone relevant health and safety training.
Stakeholders commitment	**PR 3**. Type of product and service information required by procedures and percentage of significant products and services subject to such information requirements. **EU 27.** Number of residential disconnections for non-payment, broken down by duration of disconnection and by regulatory regime. **IS 12**. Supplier Diversity Policy: expand relationships with suppliers such as minorities, women or small businesses.	**IS 13**. Average time to payment of invoices. Or average number of days between the date of invoice and payment (payments policies). **IS 14**. Financial support to suppliers (funding programs, payment facilities). **IS 15**. Agreements between companies to standardise social criteria and requirements for the recruitment process.

Source: Own elaboration

4. Discussions and conclusions

The main conclusions that we can be drawn from this paper are the following:

a) A concern exists among large companies to improve transparency in the supply chain.
b) In the top companies, there is often a section within sustainability report intended for the supply chain, which is not the habit of other companies.
c) There should be dialogue and collaboration between suppliers and customers to adapt to the standards required.
d) It is necessary on the part of governments or agencies to deepen the social responsibility in relation to supply chains.

However, it is necessary to emphasise that this proposed model may have some limitations, such as sample size and bias in the selection of organisations, although we have sought the leading companies in relation to sustainability practices and especially with regard to the supply chain. To solve these, we will expand the sample in order to test the model and to know the companies, sectors and countries that disseminate better information about supply chain. Also, we could know that dimensional sections and indicators have better and worse scores by organizations. In short, we could develop a content analysis techniques of sustainability reporting based not only on the establishment of relationships between words but through indicators.

Moreover, the proposal model is for a particular sector as electric utilities, therefore, the idea is to generalise the model for other sectors, being aware that some of the proposed indicators are not applicable for certain

organisations and so in such cases it would be appropriate to select more relevant ones. In short, it is a research line with strong future opportunities and an emerging methodology that allows for international comparisons in order to learn how global perspectives on the sustainability of supply chains are implemented in different companies.

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