Social Key Performance Indicators –
Assessment in Supply Chains

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Abstract
The new business context leads the organisations to higher levels of competition, cost pressures, customer value and complexity. Sustainable supply chains are nowadays a focus of both researchers and companies. However, apart from the well-known economic aspects, mainly environmental aspects have been studied, while social aspects are still not fully understood. From the literature it is possible to verify that several authors have attempted to establish a universally accepted framework to evaluate social sustainability in supply chains, however this goal has not yet been achieved and a high degree of mismatch of information and concepts is still present. This work aims at reinforcing the already existent mid- and end-point social impact categories for assessing products and services based on the Social LCA, leading to the definition of a new taxonomy for these social impact categories, which improves upon and systematises the existing indicators. Additionally, it presents a generic framework that links the created social impact categories and the internal and external drivers that influence social responsibility across the supply chain. The employed methodology starts with a literature review on social responsibility/sustainability in companies and social indicators. Then, a content analysis on corporate sustainability reports and a set of face-to-face interviews held with EU corporate managers in charge of sustainability tested and validated the categories. The research findings suggest that stakeholders’ dimensions should be incorporated in the decision-making process. This will allow the identification of the critical aspects and associated measures that need to be considered when designing, planning and operating supply chains. Additionally, companies and the Academia have different interests when assessing social sustainability.

Keywords: Social Key Performance Indicators; Social Sustainability; Sustainable Supply Chain Management (SSCM); Social Life Cycle Assessment (SLCA); Global Reporting Initiative (GRI); SocialSCOR model

1. Introduction
Nowadays, modern societies in developed countries demand high standards of living, which imply high consumption of products and services. The production of these products and services requires the use of high amounts of resources imposing multiple burdens on the societies and the planet. Such a quasi-unsustainable situation in the production of products and services is imposing multiple burdens on societies leading to growing awareness towards Sustainability.

In the last two decades, competitiveness in the global markets has highly increased. The market pressures intensified dramatically in terms of quality and response time demanded by the consumer. The new business context is characterised by an increasing globalisation that leads organisations to higher levels of competition, cost pressures and complexity (Hutchins and Sutherland, 2008). Supply Chain Management (SCM) practices have arisen as a crucial element to bridge this gap. On the one hand, organisations are continuously forced to achieve competitive advantages, their ultimate goal being the creation of superior value to not only shareholders but to stakeholders in general. On the other hand, the growing importance of sustainability in business practices and the persistent lack of consensus on what is the best approach to apply, have made the scientific community deeply committed to investigating these issues (Seuring and Müller, 2008).

Traditionally only two sustainability pillars are commonly discussed and taken into account in supply chain design (economic and environmental) and there is little research on integrating them altogether (Barbosa-Póvoa, 2009). Seuring (2012) claimed that
social issues have not been addressed in the design of sustainable supply chains. The evaluation of sustainable supply chain management must go through the establishment of key performance indicators and metrics (Hassini et al., 2012) and much has yet to be done concerning the identification of a set of social indicators leading to a proper assessment of the social performance in supply chains (Carvalho and Barbosa-Póvoa, 2011). To overcome this research gap this paper contributes to the definition of a new taxonomy for the social impact categories (mid- and end-point), which improves upon and systematises the existing indicators. Also, it aims at proposing a framework which links stakeholders (defined as: “any identifiable group or individual who can affect the achievement of an organisation’s objectives or who is affected by the achievement of an originations’ objectives” (Freeman and Reed, 1983, p. 91)) and social impact categories, leading to a roadmap on supply chain’s social impact assessment. On the whole, this new framework provides a means to assess, not only supply chains’ performance, but also to improve supply chain sustainability through the use of adequate social objectives and measures when developing optimization models where social aspects are conveniently integrated to support process systems decisions.

This rest of the paper is organised as follows: section 2 summarises the conducted literature reviewed relevant to the topics in study. Then, section 3 elaborates on the methodology used to conduct our empirical research and data treatment. Afterwards, section 4 presents the results obtained from the analysis of the social performance indicators database and the main findings from the conducted face-to-face in-depth interviews with sustainability experts. The paper ends in section 5 with a discussion on the major outlook and perspectives.

2. Literature Review

2.1. Sustainability and the Triple Bottom Line

According to Carter and Rogers (2008, p. 361) the concept of sustainability “refers to an integration of social, environmental, and economic responsibilities”. One of the most cited definitions of Sustainable Development was established in the Brundtland report which stated that sustainable development “meets the needs of the present without compromising the ability of future generations to meet their own needs” (Seuring and Müller, 2008, p. 1700). Stakeholders started to impose pressure on these matters, leading to the development of some critical notions such as social responsibility, cooperation between actors and organisations worldwide, and the Triple Bottom Line.

The Triple Bottom Line (3BL) was defined as follows: “Triple Bottom Line accounting attempts to describe the social and environmental impact of an organization’s activities, in a measurable way, to its economic performance in order to show improvement or to make evaluation more in-depth” (Elkington, 1998). The major difference from the past models was that all three dimensions were evaluated in an equal way (Beske, 2012); taking into account the three pillars is really the required possible way to assess sustainability and corporate sustainability and many authors argued in favour of the equal treatment of the three dimensions. In reality that is not generalised because companies and communities face four recurring problems: 1) lack of theory such as protocols, tools, indicators; 2) metrics to assess the pillars; 3) the methodologies and guidelines are not accepted (Meehan et al., 2006); 4) existence of trade-offs between the pillars and the stakeholder groups add to the problem (Kruse et al., 2008). The fact that organisations prioritise the assessment of the economic and environmental pillars is no longer satisfactory in general for the stakeholders, and organisations must make a serious effort in measuring all the Bottom Lines in their supply chains.

2.2. Supply Chain (SC)

According to Beamon (1998, p. 281), “a supply chain may be defined as an integrated process wherein a number of various business entities (i.e., suppliers, manufacturers, distributors, and retailers) work together in an effort to: (1) acquire raw materials; (2) convert these raw materials into specified final products; and (3) deliver these final products to retailers. This chain is traditionally characterized by a forward flow of materials and a backward flow of information.” According to Christopher (2011, p. 3), the concept of Supply Chain Management (SCM) means “the management of upstream and downstream relationships with suppliers and customers to deliver superior customer value at less cost to the supply chain as a whole.” SCM is therefore an important element to minimise the costs, reduce the lead times, and deliver superior customer value (Christopher, 2011). Christopher (2011) claimed competition is not bounded anymore to individual firms, rather it is supply chains that compete. Although, these globalised supply chains enabled the production and delivery of products in different worldwide market, they also were responsible for severe social impacts in distinct communities (e.g. Nike with child labour
practices). Progressively, external pressures and incentives from the stakeholders have shaped the traditional supply chains with the incorporation of new strategies and the induction of new behaviours to meet the new sustainability requirements. (Barbosa-Póvoa, 2009; Sarkis et al., 2012). Meeting economic and environmental stakeholder expectations were *sine qua non*. Thus a new concept called SSCM emerged with the objective to bridge this gap.

SSCM can be defined as “the management of material, information and capital flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development, i.e., economic, environmental and social, into account which are derived from customer and stakeholder requirements” (Seuring and Müller, 2008, p. 1700). In this new globalised competitive market paradigm, companies are moving from the traditional supply chain towards sustainable supply chain as the laws and regulations are tightening. Moreover, this change allows gaining competitive advantages; increasing revenue and ultimately enhances value-adding customer satisfaction and loyalty. One important thing to remember is that the new supply chains must incorporate sustainability considering all three dimensions, incorporating all the unaccounted costs (externalities) that have not yet been internalised. In the next section, an insight about possible strategies is given and different models and features are discussed.

### 2.3. Social Methodologies and Tools for SC Assessment

There is a pressing need to achieve proper sustainability benchmarking between supply chains, enabling the process of comparison for suitable decision-making. Notwithstanding, the literature reckons a lack of standardisation on what to measure and how to measure sustainability in supply chains (Hassini et al., 2012) leading to a defective identification of the supply chains processes and activities to improve. Few sustainability methodologies have been well implemented due to: 1) sustainability and sustainable development concepts are not clearly standardised and defined; 2) lack of standardisation on what to measure and how to measure sustainability in supply chains; 3) conflicting interests imposing trade-offs between stakeholders; 4) different values, ethics and cultural background; 5) reporting of different core activities and impacts (Azapagic and Perdan, 2000; Clift, 2003; Hutchins and Sutherland, 2008).

### Social Life Cycle Assessment (SLCA)

Many stakeholders and companies are demanding a tool whereby the social impacts in the supply chains can be properly assessed and accounted (Jørgensen et al., 2012). For this purpose, providing information on supply chains and product systems requires a cradle-to-grave approach and thus monitoring of those impacts must go through all the product life cycle in order to avoid trade-offs (Kloepffer, 2008; Kruse et al., 2008).

Social LCA (SLCA) enables to get a more complete/holistic account of the social impacts of products comparing to other social assessment methodologies (Jørgensen, 2012). Benoît et al. (2010, p. 158) defined SLCA as follows: “social life cycle assessment is a systematic process using best available science to collect best available data on and report about social impacts (positive and negative) in product life cycles from extraction to disposal.” By adopting a life cycle perspective it fills the existing conceptual void concerning the provision of decision support and benchmarking on social sustainability for the assessment of the supply chains (Jørgensen et al., 2012). Benoît (2010) asserted that SLCA had two objectives: 1) it should enable product/service and process comparison for decision-making; 2) it attempts to identify potential improvements within the system in order to slash social impacts.

### Global Reporting Initiative (GRI)

The 3.0 Global Reporting Initiative (GRI) Guidelines is a globally shared sustainability framework that organisations can use to monitor economic, environmental and social impacts and whose purpose is to place all relevant stakeholders of the supply chain in the limelight (Global Reporting Initiative, 2006). Throughout the years, many organisations have decided to adopt these guidelines due to its simplicity and comprehensiveness, making it probably the most widely used and accepted standard to assess, report and disclose sustainability issues by organisations (Lozano and Huisingh, 2011). These guidelines divide the social performance indicators into four distinct social categories: 1) Labour Practices and Decent Work (LA); 2) Society (S); 3) Human Rights (HR); 4) Product Responsibility (PR). These four categories contain social indicators (14 indicators for LA, 8 for S, 9 for HR and 9 for PR). These social performance indicators gather valuable information about customers, employees, community, consumers, shareholders, owners, suppliers providing a social holistic view of the business impacts.
In order to fill the void concerning social sustainability in supply chains, the scientific community has presented social sustainability these tools. Notwithstanding, the recurrent problem relates to the establishment of performance measurements and its systematisation in supply chains assessment, mostly because it is difficult to successfully combine qualitative and quantitative indicators. Thereby some social impacts arising from supply chain activities have not properly accounted, leading to the need of reinforcement of the already existent mid- and end-points categories for SLCA.

3. Methodology

Figure 1 presents a flow-diagram with the main steps of the employed methodology, which are described in the following paragraphs.

![Figure 1. Methodology](image)

**Step 1: Literature Review: Social Key Performance Indicators Identification**

A literature review on social sustainability in supply chains was conducted in this step. In total a sample of 51 documents from more than 30 scientific journals that proposed sustainable indicators in supply chains, has been analysed. A database composed by almost 1450 social indicators has been developed based on this literature review.

**Step 2: Social Indicators Classification**

Each one of these documents were further submitted to a content analysis enabling to conduct a much deeper descriptive analysis aiming at screening social key performance indicators. A social indicator database in an Excel spreadsheet composed by almost 1450 indicators disclosed in the reviewed literature was built. The indicators included in the database (Step 1) were classified according to the GRI social categories and to the 22 3.0 GRI Social Aspects. This enabled shrinking the database, retaining 1348 indicators out of the approximately 1450 initial collected indicators. Some indicators were monitoring issues not covered by GRI. Hence, a set of three new social aspects (Innovation and Competitiveness/R&D; Employee Welfare; Stakeholders) were introduced in view of enlarging and enriching the Guidelines.

**Step 3: Aggregation in Social Impact Categories**

It was possible to verify that many indicators that share several characteristics: 1) similar name; 2) similar monitored social incidents/aspects; 3) measurement of the social performance within the same stakeholder category. Therefore the 1348 indicators were aggregated into *families*. Then it was possible to verify that *families* were covering aspects that assess a specific area. *Families* were then allocated into common areas of social assessment, called mid-point categories. Sixteen mid-points derived from the allocation of the 54 *families* into common areas. The mid-point categories were finally grouped into end-points that correspond to the GRI’s categories (LA, S, HR and PR). Overall this complex process, which involved three researchers, enabled the identification of global categories aggregating the social KPIs which are essential to understand 1) the relationships between the mid-points and the main areas of social performance and social operations and 2) what are the relationships between these mid-points with the different supply chain echelons. These mid- and end-points map the social impact areas that should be considered for designing and implementing sustainable practices in supply chains and gives a set of indicators that should be used to assess them.

**Step 4: Link between Social Impact Categories and Stakeholders**

After defining in Step 3 the social aspects that influence social performance in supply chains, the influence of internal and external stakeholders into the mid-point categories was investigated. Four matrices considering the four end-points and including the correspondent mid-points were built, quantifying the number of indicators which cross-link these social indicators and stakeholders. As an output a general framework presenting the main drivers for social impact assessment has been presented as an output.

**Step 5: Validation**

Both the social impact categories and the framework were validated. A computer-aided text analysis (CATA) was performed on 142 sustainability reports of worldwide companies recognised as sustainability leaders in twelve different industries, which provided a semantic analysis based on the number of occurrences of relevant words that were categorised in each of the 16 social impact categories. Moreover they were tested in a set of face-to-face in-depth interviews with seven corporate managers, in charge of sustainability, the European Union from 1) a major European company of the energy sector (utility industry); 2) a company that manages the transmission of energy infrastructures of both electricity, natural gas and telecom infrastructures (utility industry); 3) a worldwide provider of commercial explosives and...
blasting systems to the mining and infrastructures (mining and materials industry); 4) a global company operating in the industries of healthcare, agriculture and high-tech materials (materials and industrial industries); 5) a large multinational pharmaceutical wholesaler; distributor and retailer group (industrial, consumer goods and retailing industries); 6) a multinational retailer group; consumer goods manufacturing and food distribution (retailing and consumer goods); 7) a large European financial group serving individual, corporate and institutional customer segments (financial industry). All seven companies validated both these mid-points and this structured approach. Feedback was used to further improvements and to reflect on the most important pinpointed issues.

4. Results and Discussion

This section presents in detail the most common social mid-point impact categories for supply chain assessment. Based on this analysis, the following subsections 1) define and support the importance of these categories for assessing products and services based on the SLCA principles; 2) link the mid-points to the main areas of social assessment using the GRI Guidelines.

4.1. Framework for SLCA

Here, each established mid-point impact category will be defined (see Figure 2).

**Figure 2. Established Mid-Points for Assessing Social Sustainability in Supply Chains**

**Employment Scope: Benefits and Characteristics**

It describes the basic job characteristics (e.g. labour hours), the existing contractual and the compensation policies of the company as well as the benefits provided to the employees.

**Employment Practices and Relations**

This mid-point addresses the internal disciplinary practices and the existing codes of conduct in a company. Also, it discloses the labour rights’ strength and the current relations between the workforce, the unions and the company.

**Health and Safety (H&S) Practices and Incidents**

This mid-point addresses the organisation’s duty of care towards its workforce, being its ultimate point to evaluate the success of the implementation of a responsible H&S culture in all business units.

**Training; Education and Personal Skills**

This mid-point indicator assesses the level of commitment to improve the human capital’s skills and attempts to correlate the intellectual development of the human resources and the social sustainability progress achieved by the company.

**Diversity and Equal Opportunities**

This mid-point aims at assessing all kinds of measures encouraging human capital diversity, equal opportunities and inclusion within the organisations. It provides an overview on how much the workforce and the board are diversified (e.g. gender; age) and the initiatives to foster an inclusive environment in the workplace for diversity of thought, culture and ideas.

**Employee Welfare**

This mid-point measures key essential aspects related to employee morale, employee satisfaction, employee wellbeing with the job. It tries to capture the impacts of the business operations into the employees’ motivation and it analyses the initiatives aiming at meeting the employee’s needs and improving welfare.

**Innovation and Competitiveness**

This mid-point attempts to understand the organisation engagement in more innovative solutions and puts emphasis on existing incentives that strengthen the innovation ability and optimise Research and Development. It is a proxy for better understanding the organisational culture of the company and the actions promoting sustainability in business.

**Human Rights Implementation and Integration**

This mid-point provides evidence about the capacity and effectiveness of the policies aiming at preventing internally and externally (with suppliers) human rights violations regarding child labour, forced labour, and freedom of association and collective bargaining.

**Basic Human Rights Practices**

This impact category evaluates how the company manages the issues of non-discrimination and indigenous rights only internally.

**Community Funding and Support**

This mid-point measures the direct and indirect financial support as well as material resources that the impacted communities are benefiting. In particular, it focuses on the cultural and educational interactions established with the impacted communities and other
stakeholder groups in view of improving the external social environment around the company.

**Business Impacts; Community Involvement and Welfare**
This category evaluates the positive and negative externalities created by the business that impact on the society social performance, the communities and the delivered social value (e.g. nuisances).

**Corruption in Business**
These mid-point strive to evaluate what kind of good business practices the organisation has implemented in order to reduce its exposure to corruption practices both internally and externally to the company.

**Fair Business Operations**
This mid-point addresses the issues of fair competition, lobbying and compliance with legal requirements by the reporting organisation, thus providing a means of measuring accurately the integrity of practices and the potential impacts on stakeholders.

**Stakeholder Participation**
This mid-point impact category gauges the stakeholder involvement, influence and empowerment in the organisational business initiatives. It assesses the stakeholders’ relationships with the organisation by monitoring the effectiveness of the communications between both parties.

**Consumer Health and Safety**
This mid-point focuses on the consumer H&S threats, product quality as well as it tracks the product social and environmental impacts across its life cycle.

**Product Management and Consumer Satisfaction**
This mid-point enables to understand the interactions between the consumers, the product and the company through the evaluation of the issues related to product commercialisation, brand awareness and legal consumer services procedures.

Overall, the CATA fully validated the SLCA framework (see Figure 2) because all the established mid-points are described in the CSR reports.

### 4.2. SocialSCOR Model and In-depth Interviews

It is imperative to understand and outline how these mid-points are bound with the different supply chain tiers because all the stakeholders must take concerted actions and act the same way for continuous social improvement. The objective is to identify the highest priority relationships between the stakeholders and these mid-points. This approach is a step forward for understanding the possible stakeholder conflicts but foremost to optimise the implementation of sustainable strategies in SCM. In this section the matrices defined for the four end-points are presented. Each matrix contains:

1) The internal and external stakeholders, which influence the social aspects in supply chain; 2) The mid-point categories identified from the database as the most relevant aspects to assess a given end-point category. The numbers in the matrices represent the number of indicators presented in the database that link the stakeholders with the impact categories.

**Labour Practices and Decent Work (LA)**
From Table 1, it is possible to observe that:

- The most important social impact categories (Mid-points) for LA are “H&S Practices and Incidents” and “Employment Scope and Diversity; Benefits and Characteristics”
- “Employees” is one of the most relevant stakeholder due to the fact that indicators mainly disclose labour-related aspects (internal aspects)
- “Shareholders/Owners” can affect or are affected by the LA issues: for instance, serious H&S incidents (e.g. fatalities) can severely affect the company reputation, the employee well-being and even shut down operations, meaning that these issues pose a risk to profitability and business continuity. Shareholders/owners care also about succession planning in companies and hence they want to ensure that proper recruitment, training and educational programmes are put into practice in view of increasing human capital and knowledge.
- “Governments and Policy Makers” have the power and the obligation to implement laws to better regulate the labour practices and provide a good working environment. Moreover, when supply chains do not account for government laws, their image is damaged and sales might decrease. A strong regulatory backlash may ensue.
- The seven interviewees stressed the crucial importance of having good LA practices. They particularly emphasised the mid-point “Training; Education and Personal Skills” and “Employee Welfare” as they contend for improving the workplace environment and for enhancing the human capital knowledge and skills as it enables the creation of value-adding solutions for the business and for the customers’ needs.

**Society Social Category**
From Table 1, it is possible to observe that:

- All stakeholders are related to the Society indicators: the supply chain impacts on the society are a cross-cutting theme; the wide latitude of social issues must be thoroughly managed by the practitioners towards reducing the impacts.
Table 1. SocialSCOR matrix

<table>
<thead>
<tr>
<th>Mid-point Categories</th>
<th>Labour Practices and Decent Work</th>
<th>Society</th>
<th>Human Rights</th>
<th>Product Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Stakeholders</td>
<td>Employees</td>
<td>142</td>
<td>39</td>
<td>170</td>
</tr>
<tr>
<td></td>
<td>Shareholders/Owners</td>
<td>62</td>
<td>21</td>
<td>146</td>
</tr>
<tr>
<td>External Stakeholders</td>
<td>Customers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Creditors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Suppliers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Society and Public at Large</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Competitors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Government and Policy Makers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NGOs including Social Activist Groups</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7
“Government and Policy Makers” can induce sustainable changes in the supply chain practices through new regulation. Also they are directly interested in the functioning of supply chains, which influence society (e.g. through the creation of employment in rural areas and infrastructure development). Government may define policies that may provide incentives and support promoting these actions.

All seven companies stated that they have policies in practice to support, welfare and involvement in the communities but through different means (e.g. sponsorship; foundations). This social responsibility concern enhances the image of the company and has the potential to increase sales.

**Human Rights social category**

From Table 1, it is possible to observe that:

- “Shareholders/Owners”, “NGOs” and the “Society and public at large” are three identifiable groups which traditionally draw attention of decision makers to Human Rights because they may affect the company reputation and they are directly impacted by policies aiming at protecting human rights.
- “Government and policy makers” have a paramount twofold purpose: 1) ensure human rights respect through regulatory bodies and agencies; 2) create new policies, regulations and control bodies aiming at protecting workers.
- “Employees” are directly affected by the companies’ conduct and can suffer HR abuses.
- The companies’ interviewees stated that Human Rights are essential nowadays: the companies have to make people feel good about their work and to respect their rights as it can severely damage their reputation and long-term financial goals. They have programmes in place to screen in-depth their supplier practices (e.g. code of conduct) since all three do not have business with companies which are involved in Human Rights violations.

**Product Responsibility (PR) Social Category**

According to Table 1, it is possible to observe that:

- The stakeholders that most influence PR indicators are “Employees”, “Customers”, “Suppliers” and “Government and policy makers”.
- “Customers” impact both PR mid-points indicators because they are the ultimate judges of the product, receiving their positive and negative impacts.
- “Employees” and “Suppliers” hold the responsibility of properly designing and manufacturing products and services, meaning that their decisions affect a wide range of important product sustainability and specification aspects.
- “Government and policy makers” shall have an active role in establishing appropriate laws in order to protect the consumer.
- All interviewees placed the customers in the limelight: all three have strategies to monitor customer needs and market opportunities and risks. Another common point is that they all involve their stakeholders in the development of new products and services, to identify areas of improvement and to comply with regulations. All managers mentioned that it is important to involve stakeholders while developing supply chain strategies in order to get a full picture of the supply chain impacts.

**4.3. Social Indicator Database vs. Sustainability Leader Companies**

First, companies are trying very hard to integrate in their supply chains by establishing close relationships with their stakeholders resulting in distinct case-endings. The database and the CATA indicated that the mid-points “business impacts; community involvement and welfare”, “health and safety practices and incidents” and “stakeholder participation” are on top of the priorities of the Academia and the companies. Overall, companies are willing to create win-win situations: 1) capture investors through responsible business practices and be more alluring to work at; 2) minimisation of social impacts arising from their operations.

Despite the fact that the percentages differ, both the database and the CATA results reveal that LA and Society aspects are the most discussed, whereas PR and HR remain in the background, meaning that there is a better theoretical support to approach certain social impacts rather than others. Nevertheless, Society is ranked first in the CATA, while LA has the highest percentage in the database relegating Society issues to the second place. These numbers underline the slightly different approaches that the companies and the scientific community have taken in assessing social sustainability. The Academia has distinct values, different interests, different priorities and cultural background in comparison with the organisations: their point of views concerning the conceptualisation of social sustainability might be significantly distant, leading to report social impacts on different basis and different core activities.

The HR issues are easier “to put a box around to” because they already secured and enshrined in developed countries by regulations: there is no much room for having discrepant interpretations. Three interviewees affirmed that the HR are very well protected by the “legal states” in the developed world.
and therefore is it easier to establish you they mean to the business and to supply chains. Regarding the PR indicators, there are not much legislation and enforcement measures pushing the companies to disclose them. The PR issues are easier to compartmentalise and there has been much discussion on how to track the impacts of products and services (e.g. LCA) meaning that is already a broad understanding and a solid basis on how to handle these problems.

There is no wrong or right path to assess social sustainability in supply chains. The Academia is more concerned with how the companies manage the operations and treats its workforce because it provides a strong basis for assessing the companies’ commitment towards the improvement of social performance. In fact, companies have to invest first internally before addressing external sustainable aspects: it is important that they score a good internal social performance with their own operations, thus demonstrating its engagement in becoming more transparent, more accountable and more sustainable. Companies have to be equipped with strong internal tools and performance management systems in order to increase internal process quality, drive changes in corporate governance and set new objectives and new responsibilities. Regarding the CATA, the large majority of the sample - which are sustainability leaders - has already fairly tackled social sustainability internal issues meaning that they are quite at ease with the social sustainability practices within the organisation. Hence, they are managing the social impacts externally within a broader perspective, i.e., the supply chain and the society.

The following paragraphs summarise the findings from the exhaustive comparison of the results from the database and the CATA:

- The database only contains a list of social indicators aiming at translating the key sustainable development issues for the industries, whereas the CATA counts the occurrences of key words listed in all the length of the sustainability reports. The sustainability reports evaluate what organisations state and report to the general public and not only what they measure. The reports provide a holistic picture of social sustainability based on the established social ontology which implies subjective judgements. This explains some variability in the results between the database and the CATA;
- The database contains papers addressing social sustainability from all supply chain echelons, whereas in the CATA evaluated social sustainability with higher detail by clearly dividing the supply chain in three echelons (upstream; midstream; downstream). Actually, there are several papers whose findings are based in several industries from multiple echelons originating a mismatch of information and lack of distinction between the findings within each echelon;
- The end-point social percentages within the three supply chain echelons from the CATA show indubitably the lack of agreement that companies disclose which may explain the variability in these results. It was performed an Analysis of Variance (ANOVA) and a non-parametric test (Mann Whitney U) on a smaller individual sample (n=30) also divided in the three echelons in order to test for statistical significance. The results showed that in 7 out of the 16 mid-points, the type of supply chain echelon influenced the percentages of these. These robust statistical analyses allowed reinforcing the argument that depending on the echelon that each company is operating in the supply chain, there are different social sustainability concerns and different approaches on how to address and tackle social sustainability issues:

1. Each company and each industry have their own sustainability agendas and address social sustainability in distinct ways. A significant part of the sustainable development strategies in supply chains depend on the stakeholders’ expectations and pressures which vary considerably from one industry to another. This denotes that sustainability issues cannot be rigidly framed in the current context. It is not possible to establish a predetermined guidebook for social sustainability measurement. The CSR reports shows heterogeneity regarding the subjects that companies are monitoring. No two businesses are the same which implies that there is an inherent complexity in sustainable development linked to SSCM design;

2. Sustainable development within the supply chains is intrinsic 1) to the organisational culture; 2) the country precepts; 3) ability to influence the upstream and downstream tiers. There are distinct perspectives that cannot be overlooked when it comes to social sustainability, meaning that there may be a conceptual clash that cannot be disregarded in terms of sustainability vision. Since supply chain operations are scattered worldwide, there is a problem of acting in a coordinated way at the strategic level and often there are decision power asymmetries and differentials in supply chains. This reveals the already existing complexity in SCs, which this dissertation demonstrates.
5. Conclusions

New social mid-points impact categories and framework identifying social impact areas and internal and external dimensions that influence the impact categories were proposed. The framework suggests that for a complete social impact assessment in supply chains it is not enough to consider the operational activities and stakeholders’ interactions need to be considered as a whole, so that a holistic assessment of the supply chain can be achieved. Social aspects turned to be a complex dimension of sustainability requiring practitioners to have a broader perspective to properly consider sustainability when designing supply chains. The content analysis and the in-depth interviews enabled to identify the most important categories and clearly highlighted the slightly different priorities and approaches in the optimization models leading to the build-up of sustainable supply chains.

6. References


