

MULTIPLE PERSPECTIVES ON INTEGRATED MANAGEMENT SYSTEMS AND CORPORATE SUSTAINABILITY PERFORMANCE

Abstract

The objective of this research is to concurrently address two identified gaps. Firstly, integrated management systems (IMS) are managed yet not measured and, secondly, corporate sustainability (CS) is measured yet not managed. It is argued that CS and IMS share stakeholder orientation, innovativeness and complexity. In light of the commonalities and opposing deficiencies, potential synergies are investigated to the mutual benefit of management systems integration and corporate sustainability. On the one side, integrated management systems may provide the necessary holistic framework for the management of corporate sustainability. On the other side, triple bottom line sustainability accounting and reporting may offer the metrics for IMS effectiveness. This reciprocating approach may aid both academics and practitioners to enhance the IMS positive impact and improve management of corporate sustainability. To serve the research purpose, a content analysis is performed drawing on three managerial theories. Resource, stakeholder and institutional theories are used to delve into the IMS and CS concepts and their relationships. Certain research propositions are generated and a framework is composed. Three key constructs – IMS resources, IMS level and CS performance – are conceptualised. The proposed framework can be subject to empirical validation in the future.

Keywords - Integrated management system, corporate sustainability, performance, stakeholder theory, resource theory, institutional theory, multiple management systems, corporate sustainability performance

Paper type: Research Paper

Introduction

Sustainable development is at the centre of interest for many researchers particularly since the economic uncertainty has risen sharply. The ability of the organisations to deal with current challenges and volatile market conditions is questioned. Therefore, firms seek new effective pathways towards long-term viability and, hence, effectively address “corporate sustainability”. A plethora of management system standards and guidelines address different corporate sustainability (CS) perspectives, such as the ISO 9001 on quality, the ISO 14001 on the environment, the OHSAS 18001 on health and safety, the AA1000 series on accountability assurance and stakeholder engagement, the SA 8000 on social accountability and the ISO 26000 on corporate social responsibility (CSR). In this context, the integration of the corresponding management systems comes “naturally almost without reflection, when aiming for sustainable development” (Oskarsson and von Malmborg, 2005).

An oxymoron lies in the fact that although corporate sustainability accounting and reporting is exhaustively addressed, there is hardly any evidence of managing the “black box”, i.e. where the results come from and how they are used to improve CS performance (Windolph et al., 2014). CS and CSR reports often limit themselves to isolated indicators and suffer from transparency and reliability (Gray, 2010; Moneva et al., 2006; Schaltegger and Burritt, 2010). Notions such as performance measurement, performance management and management system are often interchangeably misused (Garengo and Biazzo, 2013). To address this confusion, this research suggests a holistic system sustainability view of the firm expanding far and beyond the “fixation and myopia” (Lozano, 2013; Marsden et al., 2006). In this context, sustainability needs, firstly, to be managed within a system. Secondly, the performance of this sustainability management needs to be managed and measured.

In this research framework, certain constructs are formed and relationships are proposed aiming to correlate the internal management operations with the outcome on the firm’s interested parties. The theories of the firm or otherwise mentioned as management theories aid the grounding of those constructs and relationships (Lozano, 2015; Seth and Thomas, 1994; Starik and Kanashiro, 2013). More specifically, the resource, stakeholder and institutional theories enable the understanding of the resource allocation and the use of standards to form and maintain an integrated management system (IMS) within the operations of a single organisation and its impact on the organisation’s stakeholders. The IMS impact on the stakeholders is measured via corporate sustainability performance. Triple-bottom line approach interprets the ability of firms to develop sustainably not focusing solely on the economic (profitability) perspective but considering the environmental and social impact of their activities, as well. In this context, corporate sustainability performance is held as a multidisciplinary construct that needs to be managed via a complex system, which will address different and often conflicting areas and parties of interest.

The effective sustainability management requires that strategy, structure, and management systems are aligned to coordinate firm activities and motivate employees (Epstein and Roy, 2001). In other words, the “inputs – process – outputs” sequence, the key performance drivers and their relationships need to be revised encompassing sustainability aspects and addressing the impacts of corporate activities on a broad set of stakeholders (Aras and Crowther, 2009; Ranängen, 2015). It is theoretically established that IMS address stakeholder demands in a systematic manner by harmonized adoption of management standards (Asif et al., 2013; Karapetrovic, 2003). Therefore, it can be induced that integrated management systems (IMS) based on institutional elements (standards and guidelines) may provide governance mechanisms and CS integrating routines (Asif et al., 2011a).

There is an ongoing debate over embedding corporate sustainability into business strategy (Cheng et al., 2010; Figge et al., 2010) in order to combine the “aspirations of strategy with

the realities of measurement” (Maas and Reniers, 2014). Several researchers criticise the GRI reporting process as inversely developed, meaning that it emphasizes on metrics rather than on other aspects, such as sustainability awareness and the understanding of key stakeholder requirements and expectations (Moneva et al., 2006). In other words, there is a void in research and practice, when it comes to the operations of an organization addressing the management of corporate sustainability (Adams and Frost, 2008). That is, organizations seem often failing to prove that internal operations deal with sustainability issues yielding results that come out as improvement in sustainability indicators.

In order to integrate sustainability practices, such as fair operating practices and community involvement and development, within existing management systems a systematic approach is needed to establish that a sustainability management system is in place working actively and systematically with its stakeholders (Ranängen and Zobel, 2014). In this direction, several academics discuss the integration of corporate sustainability and social responsibility management into existing integrated management structures and its impact on stakeholders across the supply chain (Klute-Wenig and Refflinghaus, 2015; Wiengarten et al., 2013; Witjes et al., 2016). Fresner and Engelhardt (2004) identify the IMS as a step towards the “sustainable company” involving suppliers, clients, neighbours and authorities. Siva et al. (2016) stress that integrated management systems support sustainable development initiatives. Stakeholder satisfaction is, otherwise, reflected in IMS motivations, such as “to satisfy customers’ requirements”, “to respond to government’s appeal” and “to cope with stress from competitors” (Zeng et al., 2010). Ramos et al. (2013) found that the majority of Portuguese firms that adopt sustainability reporting practices have an environmental management system in place. In this line, Alonso-Almeida et al. (2014) understand the Global Reporting Initiative (GRI) to evolve and diffuse in analogy to the ISO 14001 and the ISO 9001 standards.

Further to the above, corporate sustainability and integrated management systems share innovation attributes, such as complexity and ambidexterity (Damanpour and Aravind, 2012; Domingues et al., 2016; Maletič et al., 2015). The complexity of corporate sustainability management demands for “production of new knowledge” (Schaltegger et al., 2013). In its generic context, innovation is stressed to be the driving force behind economic and social change (Fagerberg and Verspagen, 2009). Sustainability has long been acknowledged as an innovative and potentially transformational force generating new products and processes that challenge conventional practices (Bos-Brouwers, 2009). More importantly, corporate sustainability performance assessment is based on the triple bottom line (Elkington, 1997), which is emphasized as organisational innovation, as well (Benn et al., 2014). In a similar vein, MS integration is identified as incremental, internal and organisational or administrative innovation (Bernardo, 2014; Ivanova et al., 2014). Another research stream investigates the IMS impact on innovation (Castillo-Rojas et al., 2012; Hernandez-Vivanco et al., 2016; Simon et al., 2014; Simon and Yaya, 2012). This perspective, however, understands IMS implementation as either enabler or inhibitor of innovation within organisations and not as an organisational innovation per se.

In terms of innovation ambidexterity (Damanpour and Aravind, 2012), sustainability reflects the dual organisation’s ability to manage current needs by effectively exploiting its current resources and be adoptive to changes by exploring new resources and capabilities at the same time; in short, deal with the ‘productivity – innovation dilemma’ (Asif and de Vries, 2015). Exploration – exploitation (innovativeness and efficiency) dyad is used to link corporate sustainability with financial and non-financial performance outcomes (Maletič et al., 2014; 2016). Given that quality management systems bear ambidexterity (Asif and de Vries, 2015) quality, environmental, health and safety, and corporate social responsibility management systems are identified as sustainability management tools and become associated with

innovation capabilities (Johnson, 2015; López-Mielgo et al., 2009). In fact, integrated management systems are suggested to improve innovation management performance (Bernardo, 2014).

In light of the above, this research aims at conceptualizing the identified commonalities and complementarities using theories of the firm. The theories of the firm are invoked in operations management research in order to “provide a perspective for thinking about organisational objectives and a framework for analysing important research problems” (Seth and Thomas, 1994). Institutional theory, resource-based view, natural resource-based view, contractual/agency theory, evolutionary theory, transaction cost, resource dependence theory, stakeholder theory, strategic choice theory and social network theory are included in the sustainability research agenda (Lozano, 2015; Starik and Kanashiro, 2013). Operations management researchers often draw on the institutional, the stakeholder and the resource theories to frame “the response of firms to stakeholder demands” (Wagner, 2015). Institutional theory enables clarifying the “institutionalisation” of sustainability throughout firm operations (Maletič et al., 2016). Institutional theory and stakeholder theory have been related to study the factors undermining the assimilation of firms within their environment (Martínez et al., 2016; Wagner, 2011). The resource and stakeholder theories are paired to conceptualize corporate social responsibility in operations (Sodhi, 2015). In IMS literature, resource theory has already been used to investigate the impact of IMS resources on the operational performance of the firm (Savino and Batbaatar, 2015). However, to date, the IMS effect on sustainability and performance is hardly investigated (Nunhes et al., 2016; Siva et al., 2016). To address this gap, this research attempts to jointly conceptualise IMS and corporate sustainability performance in order to ground theoretically a future empirical investigation through the following research questions:

- How can theories of the firm be used to identify CS and IMS relationships?
- How can theories of the firm be used to relate IMS and CS performance?

In the following paragraphs, a literature review covers the aforementioned topics of interest. Firstly, the relationship of corporate sustainability with integrated management systems is explored. Then, corporate sustainability performance is discoursed using triple bottom line approach and stakeholder perspective. Next, IMS literature is reviewed from the resource and institutional perspectives. Discussion of literature findings leads to certain research propositions and a conceptual framework is proposed. Finally, conclusions are drawn and research limitations are discussed.

Research methods and tools

To serve the purpose of this research, a comprehensive review is performed on the integrated management system and corporate sustainability literature. Firstly, an exploratory search on corporate sustainability and integrated management system journal articles and books revealed certain voids. The limited volume of theory-driven IMS research directed the design of the next phase. Hence, a content analysis (Doriau et al., 2007; Seuring and Gold, 2012) enabled the thorough investigation of the addressed concepts invoking the theories of the firm (Lozano et al., 2015).

Academic journals and books were accessed over a thirty-year time period since 1987 in the scientific databases, i.e. Scopus, Google Scholar, EBSCO, ProQuest, Web of Science and the journal electronic depositories of Elsevier, JSTOR, Emerald, Wiley, Taylor & Francis, Springer and Sage Publications. Sentences and paragraphs were used as recording units (Tangpong, 2011). Keywords included “corporate sustainability”, “corporate social responsibility”, “corporate sustainability performance”, “integrated management system”, “stakeholder theory”, “resource-based view”, “resource theory”, “institutional theory”. An

author search has also been performed, since there are certain authors that have repeatedly dealt with the main research topics, i.e. IMS and corporate sustainability management, such as Asif, M., Bernardo, M., Casadesús, M., Domingues, P., Karapetrovic, S., Salomone, R., Sampaio, P., Simon, A., Wagner, M. etc. Meta-analysis of the references sections of the literature review papers and of the most recent publications was a secondary source of relevant papers (Morioka et al., 2016). Content categories were IMS resources, IMS or integration level, stakeholders, performance dimensions and outcome metrics (see Fig. 1 and Table 1 for sampling process and coding criteria).

This conceptual study focused on identifying the gaps and, then, in an iterative way to shed light on the under-researched areas of the IMS-CS field. Theories of the firm served as interpretation tools (Lozano, 2015). Recent literature review papers (Engert et al., 2016; Morioka and di Carvalho, 2016; Siva et al., 2016) were used as springboards to establish voids and clarify patterns and trends in the relevant literature via content analysis (Tranfield et al., 2003). Thus, the study of the theories of resources, stakeholders and institutions provided novel insights for further and deeper understanding of the IMS and CS concepts, and the IMS-CS relationships. Consequently, a model has emerged using resources as inputs and stakeholders as outputs.

Please insert Figure 1 about here

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Corporate Sustainability and Stakeholder Theory

Stakeholder theory was born in an attempt to understand how value is created and traded and how ethics and profitability may be connected, and to aid managers addressing these two issues (Freeman et al., 2007; Galbreath, 2009; Parmaret al., 2010). Stakeholder identification and salience is based on managerial assessments of stakeholders' possession of power, legitimacy, and urgency (Mitchell et al., 1997). Power is the ability to impose one's will and accrues to those who control resources needed by the organisation, creating power differentials among parties (Mitchell et al., 1997). Legitimacy reflects operating under normative conditions and urgency is understood as the 'degree to which stakeholder claims call for immediate attention' (Mitchell et al., 1997).

To adapt theory to corporations three theoretical aspects are identified- descriptive/empirical, instrumental, and normative -and stakeholders have been generally classified into governments, communities, political groups, trade associations, investors, suppliers, customers, employees (Donaldson and Preston, 1995). Education, regulation and value creation are alternatively used as devices to interrelate financiers, customers, employees, community, suppliers and other groups with particular interests (Hörisch et al., 2014). Stakeholder theory approach to the (natural) environment is dichotomous, in that nature is either the direct stakeholder or human beings, groups, and organisations are considered as "nature representatives" (Hörisch et al., 2014). Another duality exists in the stakeholder role within organisations in that stakeholder needs are identified as drivers while meeting those -needs is set as a management goal (Maletič et al. 2014; Rocha et al., 2007).

Rocha et al. (2007) emphasize the stakeholders' dual role when integrating sustainable development into management systems in that they "both provide input to the organisation's systems and receive output from those systems". Corporate sustainability is by definition stakeholder-oriented both from a systematic and a holistic perspective (Lozano et al., 2015). Several scholars have addressed systematically the satisfaction of multiple stakeholders, by either by composing IMS models (Asif et al., 2011; 2013; Jonker and Karapetrovic, 2004) or by identifying stakeholders within standard requirements (Genaro and Loureiro, 2015). In a similar vein, Tarí and Molina-Azorín (2010) adopted an EFQM (European Foundation for Quality Management) approach to management system integration and emphasised that while quality management systems focus on customers, the environmental management systems address the needs of regulators, governments, the general public, local communities, consumer groups and environmentally aware investors.

Corporate sustainability performance

Sustainable development concerns "meeting the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987). Elkington (1997) introduced the concept of the "triple bottom line" (TBL) for sustainable development performance depicted by a triple line with fluctuating interfaces between social, economic and environmental "shear zones". Triple bottom line approach was later adopted by the Global Reporting Initiative (Moneva et al., 2006). In a business context, sustainable development is termed "corporate sustainability", meaning the sustainable development ability of a firm within its environment. In turn, sustainable development performance of a firm or otherwise called "corporate sustainability performance" can be defined as the meeting and balancing of current and future stakeholder needs and expectations on behalf of the firm by ensuring profitability while safeguarding human and natural resources in both the short- and long-term (Artiach et al. 2010).

Although environmental and financial performances are hardly related in a direct manner, a "virtuous circle" is identified between intangible resources, such as innovation capabilities, human capital and sustainability-centred culture (Maletič et al., 2015). Moreover, the three-dimensional integrated management of sustainability, quality and the environment driven by the ISO 26000 social responsibility principles is proposed emphasizing stakeholder and holistic perspectives (Maletič et al., 2015). In a similar vein, Epstein and Roy (2001) compose a framework with a distinction between intermediate results, such as improved environmental and social performance, enhanced public image, and increased market share, and financial outcomes via measuring the reactions of seven stakeholder groups: shareholders, customers, staff and their families, suppliers, local communities, national and international society, and past and future generations of co-operators.

Strategically integrated corporate sustainability management fosters not only the quality of the product or service; it also has an impact beyond the immediate level of production and is correlated with stakeholder satisfaction (Engert et al., 2016). So far, scholars address stakeholder identification and engagement failing to investigate how stakeholder satisfaction influences the financial performance of the company, or its impact in generating sources of corporate advantage (Engert et al., 2016).

An entire research stream is dedicated on the triad of sustainability performance dimensions (Lozano, 2008). Corporate sustainability assessment is conducted through the development and monitoring of various set of indicators. Formalized sets of indicators have emerged along with guidelines for their understanding and implementation. However, there is an imbalanced focus of research on indicators, favouring the environmental and social (Cheng et al. 2010; Figge et al., 2002; Rocha and Searcy, 2012) over the economic. Moreover, despite some systemic efforts (Asif et al., 2011a, 2013; Azapagic, 2003) corporate sustainability

management and sustainability performance evaluation are hardly related in practice. To this end, only certain research models have been composed and empirically tested linking stakeholder demands and sustainability practices with performance (Maletič et al., 2016; Wagner, 2011; 2015). Bearing this in mind, relevant questions are generated, such as:

- *How are stakeholder demands managed in literature?*
- *How are stakeholders engaged with integrated management systems in IMS and multiple MS literature? (identification, evaluation)*
- *Which stakeholders are identified?*
- *Which indicators are used to identify and evaluate the effectiveness/impact of multiple/integrated management systems on those stakeholders?*
- *How are performance and multiple / integrated management systems are connected in literature?*

Stakeholders and corporate sustainability performance as correlated in IMS literature are given in Table 2. The corresponding metrics (performance indicators) per stakeholder and/or performance dimension are presented in Table 2, as well.

Please insert Table 2 about here

Corporate social responsibility (CSR) is often used interchangeably with corporate sustainability (Dyllick and Muff, 2016). In this sense, corporate social performance generally reflects how well a company transforms stakeholder orientation, a managerial attitude, into stakeholder satisfaction (Luk et al., 2005). However, the ISO 26000 guideline clearly identifies that “being accountable for the impacts of business decisions and activities on society and the environment” is an ethical concern of corporate entities against their stakeholders in respect of human rights, fair operating practices and community involvement and development” (Ranängen, 2015). It is shown, that corporate social and financial performance when addressed by a stakeholder-driven framework may influence perceived trustworthiness and company reputation, organisational commitment, consumer-company identification and firm innovativeness (Perrini et al., 2011).

Corporate sustainability performance (CSP) reflects the level of penetration of economic, environmental, social and governance factors into a firm’s operations and the impact of those factors on the firm and the society (Artiach et al. 2010). Sustainability performance of organisations is usually proxied by universally established sets of indicators, such as Dow Jones and Sustainable Asset Management - SAM (Lourenço et al., 2012; Llach et al., 2014). According to the perspective adopted by this research framework the use of indicators entails the risk of acquiring mere numbers non-corresponding to the inter-organisational sustainability practices and the management of sustainability within firms. Based on the stakeholder theory and the understanding that companies strive to address the needs of multiple stakeholder groups CSP can be assessed in stakeholder terms (Artiach et al. 2010). Thus, corporate sustainability performance is expressed by identifying the outcomes of business operations against different stakeholder groups. As a result, the following research proposition is posited:

Proposition 1a. Corporate sustainability performance is directly related to meeting all stakeholder demands.

Integrated management systems and Resource theory

Resource-based view shifted focus from product to resource perspective and defined resources as those (tangible or intangible) assets that are tied semi-permanently to the firm (Wernerfelt, 1984). According to Barney (1991) firm resources include all assets, capabilities, organisational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive and implement strategies that improve its efficiency and effectiveness. Resources are split into three forms of capital (Barney, 1991), i.e. physical capital (know-how, assets, location, proximity to raw materials), human capital (knowledge, experience, relationships) and organisational capital (structure, systems, relations). In a similar vein, from a total quality management (TQM) perspective, resources are classified into “technological”, such as information, equipment, techniques and processes, “organisational”, including culture, policies, management systems and relationships, and “human” (Alidrisi and Mohamed, 2012).

Bozbura et al. (2007) define a three-component intellectual capital consisting of the human capital (the individual-level knowledge that each employee possesses), the organisational capital (the sum of all assets that make the creative ability of the organisation possible) and the relational capital (the sum of all assets that arrange and manage the firms’ relations with the environment). The relational capital contains the relations with customers, shareholders, suppliers, rivals, the state, governmental institutions and society, while talent, integration, enabling a performance-based culture/climate, capability and leadership are the main attributes to maximize human capital in an organisation (Bozbura et al., 2007).

Further to conventional resources, “dynamic capabilities” are highlighted as sources of competitive advantage and performance of organisations operating in high velocity and dynamically changing markets (Teece, 1997). Dynamic capabilities (DC) are linked not only to the economic but to the social and the environmental dimensions of sustainability (Beske et al., 2012), as well, and lie upon path-dependent processes that are embedded within organisations (Eisenhardt and Martin, 2000). In this context, preceding management systems, i.e. systems that are initially adopted - affect the adoption and integration of subsequent management systems (Zhu et al., 2013). Simon et al. (2012a, b) study IMS evolution and the integration benefits and difficulties relationships with IMS level in terms of goals, resources and processes. IMS tangible resources are found to outperform the intangible ones on operational performance (Savino and Batbaatar, 2015). Human resources, such as culture building, awareness enhancement, top management commitment, employee motivation, communication and collaboration, are highlighted as the most prominent IMS drivers (Savino and Batbaatar, 2015; Simon and Bernardo, 2014).

In this context, the literature review with regard to resource perspective on IMS is guided by questions, such as the following:

- *How are resources connected to integrated management systems in literature?*
- *Which resources are identified?*
- *Which indicators are used to identify and evaluate those resources?*

Table 3 provides a summary of the respective literature findings.

Please insert Table 3 about here

Resource and stakeholder perspectives are combined to interpret the integrated management system as “a single set of interconnected processes that share a unique pool of human, information, material, infrastructure and financial resources in order to achieve a composite of goals related to the satisfaction of a variety of stakeholders” (Karapetrovic, 2002; 2003). In a similar vein, Zeng et al. (2007) understand human resources, organisational culture, technical guidance, and stakeholders including customers, certification bodies, and institutions, as factors affecting the implementation of integrated management systems and compose a “synergetic” IMS model, where resource, structural and cultural synergies interact serving strategic synergy across multiple management sub-systems.

Hence, the following research proposition is generated:

Proposition 1b. Corporate sustainability performance is directly related to the resources allocated for the integration of management systems.

Management systems and institutional theory

Institutional theory understands organisations “comprised of many institutional elements, some rules, norms, or beliefs being forged in on-going interaction and others being borrowed from their environments” (Scott, 2008). The institutional perspective addresses the similarities in organisational behaviour in terms of coercive isomorphism, mimetic processes and normative pressures (Maletič et al., 2015). In this context, management system standards can be seen as a means of “imposing” isomorphism across organisations via increasing -homogenisation (Beckert, 2010). Furthermore, certified management systems codify voluntary practices that are socially desirable (legitimated) and economically viable in areas as diverse as quality, the working environment, environmental management, labour management and e-commerce security (Rocha and Granerud, 2011). Following this line of reasoning, Maletič et al. (2014) suggest that “institutional isomorphism, as underlined by self-regulatory and voluntary initiatives, such as environmental and quality management approaches, could be a useful theoretical underpinning for investigating sustainability practices orientation. Furthermore, it is stressed that ISO 14001 should be integrated with quality management, strategically oriented and coupled with suitable performance measurement system to enable effective measurement and improvement of corporate sustainability initiatives in alignment with TBL (Maletič et al., 2015).

Quality management systems alone meet customer and shareholder demands. Environmental management systems address environmental concerns trying not to “harm business goals”. However, pursuing social benefits supersedes the scope of both the ISO 9001 and the ISO 14001 standards (Maletič et al., 2015). Moreover, single standard adoption fails to spread on all three dimensions of sustainability simultaneously. In addition to this “triple-aim” challenge, there is an entire research stream dedicated on the gap between certification and actual implementation of management systems in terms of their respective standard requirements. Ceremonial or symbolic adoption serves the legitimacy purpose and meets the superficial and short-term stakeholder satisfaction goal whereas the internalization of management practices leads to the in-depth, long-term stakeholder satisfaction. At this point, integrated management systems seem as the fit-for-purpose answer to manage corporate sustainability.

Standards may apply their isomorphic pressures and set their individual requirements while integrated management systems provide the necessary framework towards meeting the strategic CS objectives through the joint, coordinated use of resources across and within processes. IMS certification remains out of the picture and, hence, there is no debate on any

symbolic or ceremonial implementation. On the other hand, the lack of an international IMS-dedicated standard and the subsequent inability of “stamping” the joint or integrated audit outcome hamper IMS legitimization. Therefore, IMS level needs to be substantiated in every single research framework following common principles established by academics and practitioners. So far, researchers have dealt with corporate IMS benefits in terms of operational efficiencies (Abad et al., 2014; Bernardo et al., 2015). This research introduces a framework to assess the IMS positive impact on corporate sustainability performance in terms of stakeholder orientation.

Several management standards are available to manage different aspects of firms’ sustainable development. Table 4 depicts the scope of sustainability related standards. To date, empirical IMS scope is rather limited to quality and the environmental management. Less is the research on the further integration of health and safety, food, information and energy management systems (von Ahsen, 2014; Mesquida and Mas, 2015; Satolo et al., 2013). The study on the integration of corporate sustainability management has emerged both empirically (Botta et al., 2013; Maas and Reniers, 2014) and theoretically (Asif et al., 2011; 2013; Rocha et al., 2007).

Please insert Table 4 about here

IMS level

As already discussed, several management systems may be integrated to form an IMS. To understand and measure how far this integration of multiple management systems has gone within firms is a major concern of IMS researchers. The IMS level refers to the degree of integration of the initially independent management systems within a firm. Certain researchers have produced IMS scales (Abad et al., 2014; Bernardo et al., 2009). The level of integration can be determined at a strategic, tactical and operational level (Asif et al., 2010) or in three dimensions: temporal, substantial and organisational (von Ahsen (2014). The integration level is also scaled according to the integration of goals (objectives), processes and resources (Karapetrovic and Willborn, 1998; Sampaio et al., 2012). Furthermore, a “polarisation” effect on the IMS level is identified, meaning that integrated management systems reach either full or zero completion over time (Simon et al., 2012a). Literature suggests that the integration “device” - whether it is a theoretical framework, a standard or a tailored model - and the various constraints imposed on integration may condition the IMS level in the long-term (Gianni and Gotzamani, 2015). Integration strategy, methodology, maturity/experience, and internal motivations are found to condition the integration level (Bernardo, 2014).

Based on the abovementioned findings the following proposition is posited:

Proposition 2. The integration level of multiple management systems is directly related to the allocated resources.

The integration level is otherwise understood as the effectiveness of IMS implementation on process improvement (Ivanova et al., 2014). Evidence has proved that IMS benefits increase proportionally to the IMS level (Abad et al., 2014). What is still missing is the way to evaluate the outcome of the integration process through objective business results (Abad et al., 2014). In this vein, Tarí and Molina-Azorín (2010) propose using the EFQM result

components to measure the influence that integrated systems have on firm performance. Garengo and Biazzo (2013) discuss an IMS incorporating ISO 9001 standard requirements, EFQM principles and performance measurement and management tools. Bernardo (2014) proposes a model where integration aspects, including strategy, methodology, maturity/experience, and internal motivations condition the integration level influencing innovation management performance. Unified management systems are found to improve business performance, either financial (Martí-Ballester and Simon, 2017) or environmental (Ferrón Vílchez and Darnall, 2016). A summary of IMS level parameters as found in literature are presented in Table 5).

Please insert Table 5 about here

Performance of Integration

The impact of IMS is found generally positive, with accrued benefits such as increased customer satisfaction, service quality and stability, reduction of failures, facilitation for growth and certification and better alignment of people and information, being the business aspects mostly affected (Mesquida and Mas, 2015). Siva et al. (2016) stress that IMS positive effect can be maximized when integrated with corporate governance and core business processes, as well as implemented into every level of the organisation. However, performance of integration is assessed mostly in a qualitative and perceptual manner (Sampaio et al., 2012). Performance assessment of an IMS requires an analytic process to encompass its multiple dimensions possibly in the form of an embedded “integrated performance management system”, with only few attempts empirically researched (Gianni and Gotzamani, 2015). IMS performance and benefits are found contingent on certain factors, such as the industry sector or activity (López-Fresno, 2010; Manzanera et al., 2014), the company size (Iatridis et al., 2016; Garengo and Biazzo, 2013; Salomone, 2008) and the years of IMS implementation (Zeng et al., 2011).

Firm performance in three dimensions

Economic performance of firms is both positively and negatively associated with the implementation of isolated management systems. The relationship of economic performance with the joint implementation of multiple management systems is recently researched (Martí-Ballester and Simon, 2017). However, the relationship of economic/financial performance with respect to the other two types of the triple bottom line CSP approach has been hardly investigated (Wagner, 2015). Bearing in mind the complexity of CS performance and drawing upon stakeholder theory, performance elements/components can be analysed as perceived by stakeholders depending on their involvement and contribution to the firm operations performance (Wiengarten et al., 2017).

Linking corporate sustainability and firm/organisational performance

It is rather difficult to operationalise corporate sustainability due to its complicated nature. Hence, the performance of organisations with regard to corporate sustainability and its three different dimensions remains vague. Prior research has established and tested multi-dimensional indicators of the impact of sustainability practices on firm performance (Maletič et al., 2016). Evidence suggests that the extant body of literature on the association of corporate sustainability performance and firm performance narrows down to the financial performance of the firm (Goyal et al., 2013). Bearing in mind, that integrated management systems may offer multi-discipline sustainability insights, this research suggests to

operationalise the effectiveness of a firm’s integrated management system on corporate sustainability, i.e. the IMS impact on the firm’s economic, environmental and social interactions with stakeholders. Hence, the following propositions are posited:

Proposition 3a. The integration level of multiple management systems conditions firm performance.

Proposition 3b. The integration level of multiple management systems conditions corporate sustainability performance.

Results and Discussion

In summary, this research identifies a mutually beneficial agenda for IMS and CSP. On one side, the IMS impact on firm performance needs to be investigated theoretical and empirically (Siva et al., 2016). On the other side, corporate sustainability performance needs to be embedded within business operations so, that corporate sustainability performance evaluation will reflect sustainability management practices (Asif et al., 2014; Searcy et al., 2012).

In line with the research propositions, the literature findings suggest that management theories can be used to frame the relationships of corporate sustainability performance with integrated management systems (Fig. 2). More particularly, the three selected theories of the firm are used to conceptualise “sustainability performance of the firm” or otherwise called “corporate sustainability performance” depending on the resources and the level of integration of multiple management systems.

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Corporate sustainability refers to the sustainable development ability of companies within the business environment. This business environment is defined via the stakeholders influencing and being influenced by the operations of companies (Maletič et al., 2014) both directly and indirectly (Searcy, 2012). The relationship of corporate sustainability (CS) with stakeholders is used as a means for the interpretation of CS performance. Furthermore, CSP tri-dimensional approach is juxtaposed to the multiple scope of an integrated management system, i.e. the economic (quality), environmental and social (health and safety, social responsibility and accountability) management standards and systems (see Table 4).

Integrated management systems like corporate sustainability are both novel concepts. The relative research is continually evolving and expanding. So far, IMS performance remains a rather uncharted territory. To address this gap, IMS level is used as a proxy, an “interpreter” of IMS that traces and provides an identity to the merging of multiple management systems within an organisation. Direct and indirect relationships of the resources allocated to the multiple management systems with the stakeholder-oriented performance are to be investigated through the proposed model.

The integrated management system is seen as the vehicle which turns inputs (the resources) into sustainability results. Results or outputs are viewed as the effectiveness of the IMS, i.e. IMS level, from the lenses of different stakeholders. Stakeholders are “assigned” or

“attached” to different components of corporate sustainability performance. Hence, the effectiveness of multiple management standards is “measured” by their implementation impact on the firm’s stakeholders. Moreover, in line with the above stated propositions, three key constructs -IMS resources, IMS level and corporate sustainability performance -can be understood within a framework (see Fig.3) that needs to be empirically tested.

Drawing upon Table 3 IMS resources are analysed into awareness, methods and tools, strategic, human, information and external resources. Based on the findings summarized in Table 2 corporate sustainability performance is analysed in three dimensions, i.e. the economic – and relevant stakeholders: the shareholders, customers, suppliers, competitors, and investors; the environmental – and relevant stakeholders: the regulatory authorities and the environment; and the social-and relevant stakeholders: the employees, the community. In Table 2 (and Fig. 3) the corresponding metrics (performance indicators) per stakeholder and/or performance dimension are presented, as well. Figure 3 also includes outcome metrics for IMS performance directly related to each stakeholder group. IMS level is measured against certain parameters of the multiple management systems as found in literature (see Table 5). In other words, the integration level of the objectives, the policies, the documentation, the processes and the audits of the isolated management systems is evaluated.

Please insert Figure 3 about here

Conclusion

So far, there is contradictory evidence on whether multiple management systems –either independently or jointly - improve firm performance (Siva et al., 2016). Integration is highlighted as a potential gateway to manage the conflicting areas of the different management disciplines and a “spillover effect” is recognized (Wiengarten et al., 2017). Nevertheless, the scarcity of theoretical and empirical research to that direction is emphasized (Wiengarten et al., 2017). This framework aims to address the gap in research on the performance of multiple management systems. To this end, integrated management system (IMS) implementation is directly related to allocated resources and the IMS effectiveness is assessed in terms of the different stakeholders and their satisfaction. At this point, the triple-dimensional CS performance is opposed to the multi-dimensional effectiveness level of integrated management systems. Furthermore, an effort is made to understand the implementation of IMS drawing upon the institutional and the resource theories. IMS level is used as a possible intermediating variable to help the investigation of the IMS relationship with sustainability of the firms making the very existence of an IMS less perceivable and more tangible, visible, quantifiable to the interested researchers and practitioners. IMS level is viewed as a result analogous to the allocated resources based on the resource theories.

Another identified gap in research refers to the missing link between the measurement of sustainability outcomes and sustainability management within organisations. There seems to be a “decoupling” between what is measured and what is managed. Thus, whilst on the one side IMS manage the implementation yet fail to measure the output, on the other side CS measure its performance yet fails to manage its implementation. This research argues that CS and IMS share stakeholder orientation, innovativeness and complexity. In light of their commonalities and the identified deficiencies, potential synergies are investigated to the mutual benefit of management systems integration and corporate sustainability performance. On the one side, integrated management systems may provide the necessary holistic framework for the management of corporate sustainability. On the other side, triple bottom line sustainability accounting and reporting may offer the metrics for IMS effectiveness.

Bearing in mind what Searcy et al. (2005) emphasise, that in fact “indicators are a complement to, not a replacement for, existing management systems”, this research proposes to combine the experience gained from the integration of management systems with the know-how of sustainability accounting and reporting. Under this common thinking, certain key constructs are suggested to be related: IMS resources, IMS level and corporate sustainability performance.

Resource, stakeholder and institutional theories are used to delve into the IMS and CS concepts and their relationships. Despite its wide acceptance, resource-based view limits itself within a single organisation. To address this limitation, resource dependence theory (RDT) expands the internal perspective to an open system susceptible and vulnerable to the external environment (Pfeffer and Salancik, 2003). Moreover, RDT intersects with stakeholder theory in that both theories recognize the firm’s dependence on external and internal stakeholders (Hillman et al., 2009). In terms of its “usability” in operations management, resource-based view undergoes criticism due to its focusing on the valuable, rare, non-substitutable, and inimitable resources (Priem and Butler, 2001; Hitt et al., 2016; Kenworthy and Balakrishnan, 2016). More specifically, it is evidenced that operations management (OM) scholars address resources at large keeping a broader view of firm performance and growth (Bromiley and Rau, 2016; Hitt et al., 2016).

The proposed model compiles the IMS level factors that are found in literature aiming to establish a uniform measuring scale so that integrated management systems can be objectively and uniformly classified. IMS scope is identified as a possible contingent factor on the CS performance. What needs to be empirically explored is whether different combinations of management standards may have different impact on IMS effectiveness and CS performance. CS effectiveness considers all stakeholders that are affected, either directly or indirectly, by multiple management systems implementation. Suppliers, employees, customers, investors, the environment, regulatory authorities, and the community are included in the proposed framework. Certain control factors, such as company size and sector, are also considered.

The proposed performance evaluation offers new insights to the added value of management systems. It has long been criticized that organisations often adopt management standards to merely undergo certification audits successfully. Hence, certified firms aim at conformance to the standards requirements shifting focus from the actual operational and strategic objectives. From this point of view, the lack of an IMS certification standard may leverage performance, since firms distance from the certification objective and focus on the improvement goal, which ultimately refers to optimizing measurable results against business objectives. Moreover, it can be induced that, firms that integrate multiple management systems - while abiding by corporate sustainability principles- ensure that business objectives cover a wide variety of needs and expectations of diverse stakeholders.

Concluding certain limitations and future research directions are discussed. This research has compiled literature data through three theoretical lenses and proposed three main constructs that are analysed in secondary components. However, the proposed relationships need to be empirically tested in order to be confirmed or disconfirmed.

Particularly with regard to innovation, this study has identified certain innovation commonalities of CS and IMS. Furthermore, certain innovation resources are identified, such as innovative IMS structure, innovative skills and dynamic capabilities. However, the innovation perspective needs further exploration. To this end, a focused literature research would shed more light on the innovative aspects of CS and IMS, in terms of innovation resources and stakeholder-oriented innovation performance.

Future research may apply the supply chain perspective, as well. As aforementioned, resource dependence theory goes beyond the “narrow” resource-based view and provides new insights on resources and their dependence along the supply chain, including quasi integration, new product development, and buyer–supplier relationship focusing on the joint dependence of resources between the focal firm and its external environments (Hitt et al., 2016). So far, certain scholars studied isolated management systems and stressed the importance of quality and environmental management system integration across supply chain tiers (Wiengarten et al., 2013; Wong et al., 2015; Zu and Kaynak, 2012). Through this lens, the IMS inter-organizational scope may be widened by engaging upstream and downstream supply chain actors / stakeholders.

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Table 1. Coding criteria (adapted by Barratt et al., 2011)

<i>Coding criteria</i>	<i>Description/details</i>
Article authors	Who are the authors of the article?
Major focus of the article	Is the major focus of the article relevant to the main research topics?
Theoretical lens	Which theories, if any, influenced the authors?
Role of existing theories	Were existing theories used to develop constructs and/or used to interpret the findings?
Research outcomes	Can the findings be used to justify and operationalise the proposed relationships/constructs?

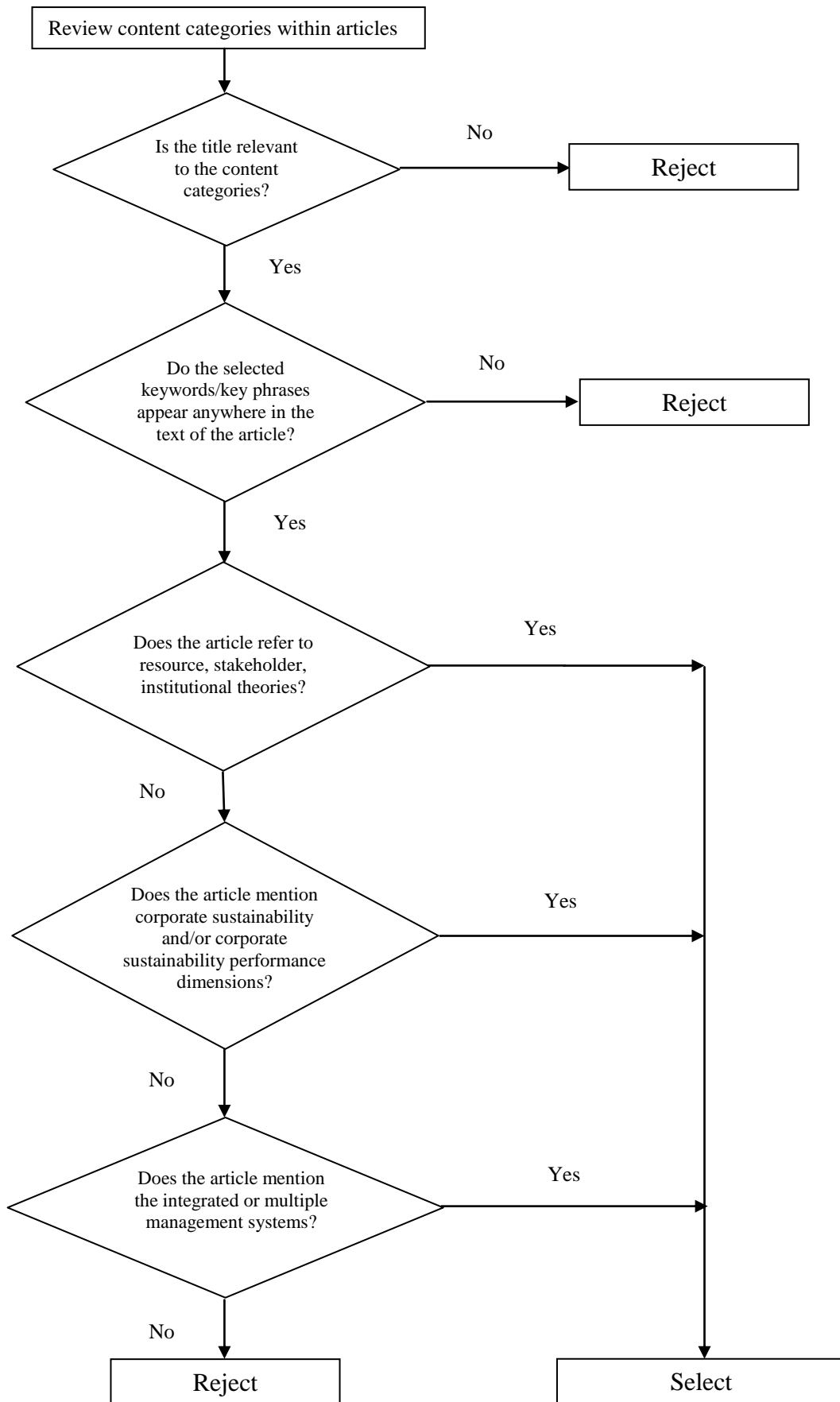


Figure 1. Article sampling procedure (adapted by Barratt et al., 2011)

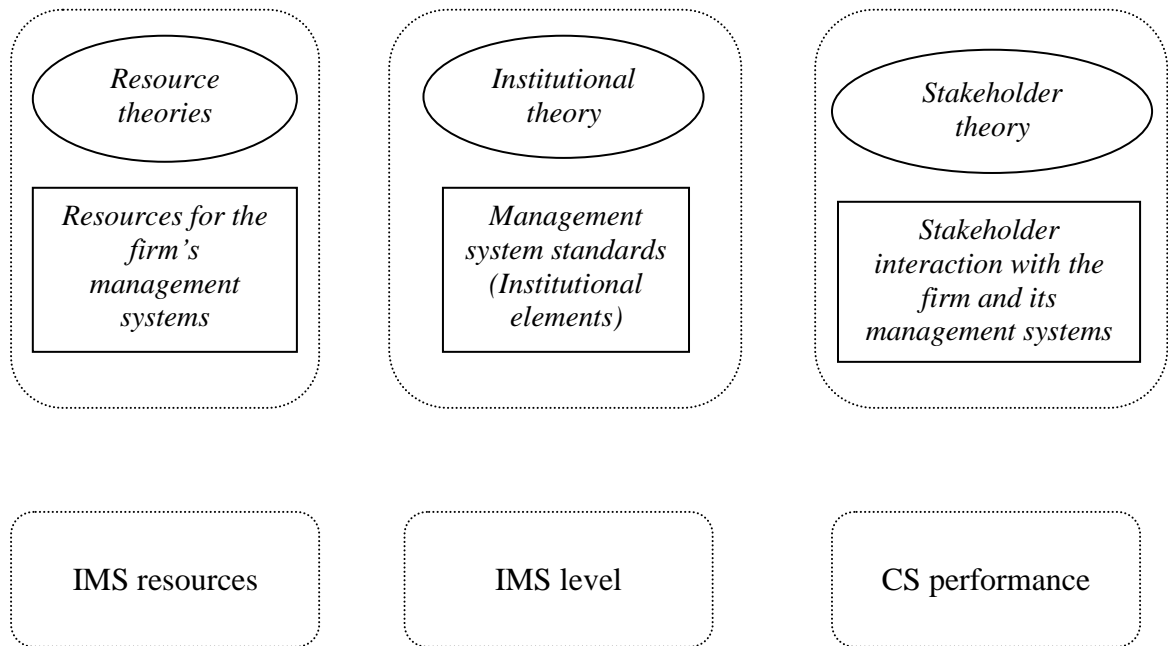


Figure 2. Theoretical frame

TABLE 2
Stakeholders and corporate sustainability performance

Stakeholder/ performance dimension	Outcome metrics	Researcher(s)
Employees, customers, regulators	Internal and external audit results	Asif <i>et al.</i> (2013)
Non-governmental organisations (NGO), local community, municipal government representatives, general public	Quality of life, community reinvestment, public safety, culture and recreation, education, economic vitality, health, housing, and transportation. Land use and infrastructure, natural environment, public well-being	Asif <i>et al.</i> (2013)
Customer	customer/stakeholder satisfaction, percentage of defects, on-time delivery, and satisfaction with the environmental characteristics of products	Tarí and Molina-Azorín (2010)
People (employees)	employee morale, quality and environmental training results, quantity and quality of improvement provided by employees related to quality and environmental issues	Tarí and Molina-Azorín (2010)
Society / environment	resource consumption, emissions, toxic waste, support for social activities	Tarí and Molina-Azorín (2010)
Economic performance	financial results, productivity, cost of quality, product quality	Tarí and Molina-Azorín (2010)
Environmental performance	Use of water, energy, renewable resources, use of toxic inputs, soil contamination, air emissions, landscape damage	Wagner (2011)
Economic performance	Corporate image, sales, market share, new market opportunities, short-term profit, cost savings, productivity, improved insurance conditions, better access to bank loans	Wagner (2011)
Owner/shareholder	owner/shareholder satisfaction	Wagner (2011)
Management	management satisfaction	Wagner (2011)
Worker	worker satisfaction	Wagner (2011)
Environmental performance	Inputs: water inputs, energy inputs, toxic inputs, non-renewable inputs	Wagner (2015)
	Emissions: soil contamination, air emissions, landscape impacts	Wagner (2015)
Regulatory	National legislators	Wagner (2015)
	European legislators	
Internal	Managers	Wagner (2015)
	Shareholders	
	Parent firms	
Public	NGOs	Wagner (2015)
	Communities	
	Press/media	
	Scientific institutes	
Value chain	Suppliers	Wagner (2015)
	Distributors	
	Competitors	
	Corporate buyers	
Economic performance	Market: new market opportunities, sales, market share	Wagner (2015)
	Risk: bank loans, insurance conditions	
	Efficiency: short-term profits, cost savings, productivity	
	Image: corporate image, management satisfaction, employee satisfaction	

Stakeholder/ performance dimension	Outcome metrics	Researcher(s)
Employee	employee motivation improvements, department barriers elimination and higher collaboration organizational culture improvements better communication	Simon, Karapetrovic&Casadesús (2012b)
External stakeholders	Higher stakeholder implication	Simon, Karapetrovic&Casadesús (2012b)
Economic performance	company image improvements organisational global strategy improvements increase of organisational efficiency	Simon, Karapetrovic&Casadesús (2012b)
Customer satisfaction	Product quality (<i>improved by IMS</i>) Customer service quality Perceived value Firm image Customer complaints handling	Simon and Yaya (2012)
Information on customers	Economic value of the customer complaints/ turnover Type of more frequent complaints Customer satisfaction Number of questionnaires returned Number of positive questionnaires returned by customers	Garengo and Biazzo (2013)
Trade function analysis	Turnover, market share, payment terms Previous year turnover/year turnover New customers Number of audits Agents involvement Agents satisfaction Outstanding agents	Garengo and Biazzo (2013)
Suppliers performance	Change in supplier list % of non-conforming supplies	Garengo and Biazzo (2013)
Employees	Absenteeism Employee satisfaction Accidents at work Training costs Employees training cost/turnover (Employee) decision-making capacity Employee satisfaction with management (Employee) improvement plans	Garengo and Biazzo (2013)
Audit results	Number of observations accepted in audit Number of non-conformities accepted in audit	Garengo and Biazzo (2013)
Production efficiency	Micro non-conformity Turnover per person	Garengo and Biazzo (2013)
Corrective actions	Effectiveness of corrective actions Effectiveness of corrective action planning % of new validated projects	Garengo and Biazzo (2013)
Maintenance	Cost of maintenance	Garengo and Biazzo (2013)

Stakeholder/ performance dimension	Outcome metrics	Researcher(s)
IMS potential (operational) benefits	<p>Better and greater visibility of operation of the company in the concerned MSs</p> <p>Elimination of conflicts between individual MSs, and consequent resources optimization, namely human resources</p> <p>Elimination of several organisational and operational waste, resulting from an individual implementation of each MSs</p> <p>Common management policy, objectives, goals and key process indicators (KPIs) related to the performance of the concerned MSs</p> <p>Improvement of the internal and external image and credibility of the company with focus in the areas of Quality, Environment, Occupational Health and Safety</p> <p>Involvement and consolidation, by all collaborators, of a culture of continuous improvement, attitudes and values in the scope of the concerned MSs</p> <p>Reduction of the number of internal and/or external audits</p> <p>Improvement at the level of the risk management through an integrated and systematized approach</p> <p>Integrated management of the several components of sustainability</p>	Rebelo <i>et al.</i> (2016)
IMS potential (sustainability) benefits	<p>Improvement of the internal and external image and credibility of the company with focus in the areas of Quality, Environment, Occupational Health and Safety</p> <p>Involvement and consolidation, by all collaborators, of a culture of continuous improvement, attitudes and values in the scope of the concerned MSs</p> <p>Greater employee valorization and motivation as a result of greater scope of its competencies, tasks and responsibilities with consequent "empowerment"</p> <p>Improvement of the partnership relationships with suppliers and of dialogue and compromise with others relevant stakeholders, contributing to the competitiveness of the company</p>	Rebelo <i>et al.</i> (2016)
Sustainability performance	<p>% Supplying companies owned by minority groups</p> <p>% Women in senior positions</p> <p>Working hours / wages</p> <p>Air emissions</p> <p>Discharge to water</p> <p>Cases of bribery</p>	Epstein and Roy (2001)
Stakeholders reactions	<p>By-product revenues</p> <p>Improved image (survey)</p> <p>New product development (time)</p> <p>Absentee statistics</p> <p>Increased market share</p> <p>Credit rating</p> <p>Awards</p>	
Corporate social performance	<p>Levels of customer satisfaction achieved</p> <p>Levels of customer loyalty achieved</p> <p>Levels of employee satisfaction with their jobs</p> <p>Levels of employee retention</p> <p>Providing employment and income locally</p>	Luket <i>et al.</i> (2005)

Stakeholder/ performance dimension	Outcome metrics	Researcher(s)
Financial and market performance	Overall profit levels achieved Profit margins achieved Return on investment Sales volume achieved Market share achieved Shareholder satisfaction with financial performance	Luket <i>et al.</i> (2005)
Social Performance	Health and safety performance has improved The employees' satisfaction has increased The employees' motivation has increased Employee education and training (man-days per employee per year) have increased Corporate image has improved <i>during the last 3 years</i>	Maletičet <i>et al.</i> (2015)
Financial and non-financial performance	Sales growth has increased above industry average Customer satisfaction has increased Operative costs have decreased The quality of our products and services has been improved <i>during the last 3 years</i>	Maletičet <i>et al.</i> (2015)
Environmental performance	The efficiency of the consumption of raw materials has improved The resource consumption (thermal energy, electricity, water) has decreased (e.g. per unit of income, per unit of production) The percentage of recycled materials has increased The waste ratio (e.g. kg per unit of product, kg per employee per year) has decreased <i>during the last 3 years</i>	Maletičet <i>et al.</i> (2015)
Customer	Customer satisfaction has improved Communication with customers has improved Customer complaints have decreased Services offered to customers are better than competitors	Bou-Llusar <i>et al.</i> (2009)
People (employees)	Employee motivation and commitment Employee willingness to work extra time has improved High employee organisational commitment has improved Employee achievement Employees identify and provide solutions to work problems Employees share organisational values Employees show high levels of initiative Employee satisfaction Employee absenteeism has decreased Employee turnover has decreased Employee opinions contribute to improving work performance Employees have high levels of know-how Communication with employees has improved Employee satisfaction has improved Employee involvement at work has improved	Bou-Llusar <i>et al.</i> (2009)
Society / environment	Protection of environment has improved Noise levels have decreased Pollution levels have decreased The organisation has a positive impact in society*	Bou-Llusar <i>et al.</i> (2009)

Stakeholder/ performance dimension	Outcome metrics	Researcher(s)
Economic performance	Financial results Market share has improved Sales per employee have improved Profit levels have improved There has been a noticeable improvement in financial results	Bou-Llugar <i>et al.</i> (2009)
Suppliers	The number of suppliers has decreased Quality of raw materials has improved Relationships with suppliers have improved Supplier management has improved	Bou-Llugar <i>et al.</i> (2009)

TABLE 3
IMS resources/capabilities

Resource variable/ Researcher(s)	Resource items	Researcher(s)
Safety and social issues	OHSAS 18001 implementation Ethics	<i>Savino & Batbaatar (2015)</i>
Effectiveness of operational resources	TQM principles and top management strategic perception Measuring firm's performances associated with environmental/ safety performance	<i>Savino & Batbaatar (2015)</i>
Assets for IMS	Pollution control assets Machines and pollution equipment maintenance Human resources Formal IMS structure Procedures and proprietary processes Updates and safety device investments	<i>Savino & Batbaatar (2015)</i>
Cross-functional operation	Design and product engineering Production management Integrated internal audit Integrated external audit Purchasing and suppliers management	<i>Savino & Batbaatar (2015)</i>
IT systems	Information systems development Enterprise resource planning systems Decision support systems	<i>Savino & Batbaatar (2015)</i>
IMS awareness	Sharing on IMS principles and tasks by the managers Sharing on IMS principles among employees and workers	<i>Savino & Batbaatar (2015)</i>
Human resources	Culture building, awareness enhancement, top management commitment, employee motivation, communication and collaboration	<i>Simon & Bernardo (2014)</i>
Human resources	Management system representative Management system manager Inspector	<i>Simon, Karapetrovic & Casadesús (2012a,b)</i>
Documentation & processes	Control processes: manual, internal audits, management review, control of nonconformities, preventive and corrective action, improvement, document control, record control, internal communications Strategic and operating processes: policy, objectives, planning, product realization, determination of requirements Documentation resources: procedures, instructions, records	<i>Simon, Karapetrovic & Casadesús (2012b)</i>
Leadership	Quality and environmental issues addressed in company's mission and vision. Quality and sustainable values in actions and behaviour Commitment to quality and environmental efforts	<i>Tari and Molina-Azorin (2010)</i>
Strategy	Mission and vision are implemented by developing a strategy that focuses on customers/stakeholders, and that takes account of the market and sector. Policies, plans, objectives and processes reflect quality and environmental issues Policies, plans, objectives and processes are communicated to all employees in a straightforward way.	<i>Tari and Molina-Azorin (2010)</i>

Resource variable/ Researcher(s)	Resource items	Researcher(s)
People	<p>The full potential of employees is released at an individual, team-based and organisational level.</p> <p>Quality and environmental training is provided for all employees.</p> <p>Ideas provided by employees regarding quality and environmental improvement are recognised and rewarded, in a way that motivates staff and builds commitment to using their skills and knowledge for the benefit of the organisation.</p>	<i>Tari and Molina-Azorin (2010)</i>
Partnerships and resources	<p>In a QEM system, external partnerships, suppliers and internal resources are managed in order to support quality and environmental efforts.</p> <p>The current and future needs of the organisation, the community, and the environment are balanced when managing partnerships and resources.</p> <p>Quality and environmental aspects are considered during the supplier evaluation process.</p> <p>Long-term supplier relationships are emphasized.</p>	<i>Tari and Molina-Azorin (2010)</i>
Processes, products and services	<p>Processes are designed, managed and improved in order to satisfy and generate increasing value for customers and other stakeholders with regard to quality and environmental aspects.</p> <p>Quality and environmental performance outcomes are used to improve processes.</p>	<i>Tari and Molina-Azorin (2010)</i>

TABLE 4**Standards, regulations and guidelines managing corporate sustainability aspects**

<i>Standard/Guideline/Regulation</i>	<i>Scope</i>
ISO 9001:2015	Quality management systems – Requirements
ISO 9004:2009	Managing the sustained success of an organisation – A quality management approach
ISO 14001:2015	Environmental management systems – Requirements with guidance for use
EMAS regulation 1221/2009	Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS), repealing Regulation (EC) No 761/2001 and Commission Decisions 2001/681/EC and 2006/193/EC
ISO 14031:2013	Environmental management – Environmental performance evaluation – Guidelines
ISO 14044:2006	Environmental management – Life cycle assessment – Requirements and guidelines
OHSAS 18001:2007	Occupational health and safety management systems – Requirements
ISO 26000:2010	Guidance on social responsibility
ISO 50001:2011	Energy management - Requirements
SA 8000:2014	Social Accountability 8000 International Standard
AA1000AS (2008)	AccountAbility Assurance Standard
AA1000SES (2015)	AccountAbility Stakeholder Engagement Standard
ISO 28001:2007	Security management systems for the supply chain – Best practices for implementing supply chain security assessments and plans – Requirements and guidance

TABLE 5
IMS level components

<i>IMS LEVEL</i>	<i>Relevant references</i>
Multiple management systems (MS) policies	Asif et al. (2010), Simon et al. (2012b)
MS objectives	Simon et al. (2012b)
MS human resources	Simon and Bernardo (2014)
MS design and documentation	Simon and Bernardo (2014), Von Ahsen (2013)
MS strategic processes (policy drawing, long-term establishment and planning of objectives, management review, performance evaluation)	Abad et al. (2014)
MS tactical (system support) processes (management of preventive and corrective actions, control of non-conformities, document and data control)	Abad et al. (2014), Simon et al. (2012a)
MS operational processes (production operations (execution), waste monitoring, health and safety daily routines)	Asif et al. (2010)
MS internal audits	Abad et al. (2014), von Ahsen (2013)
MS external audits	Abad et al. (2014), Von Ahsen (2013)

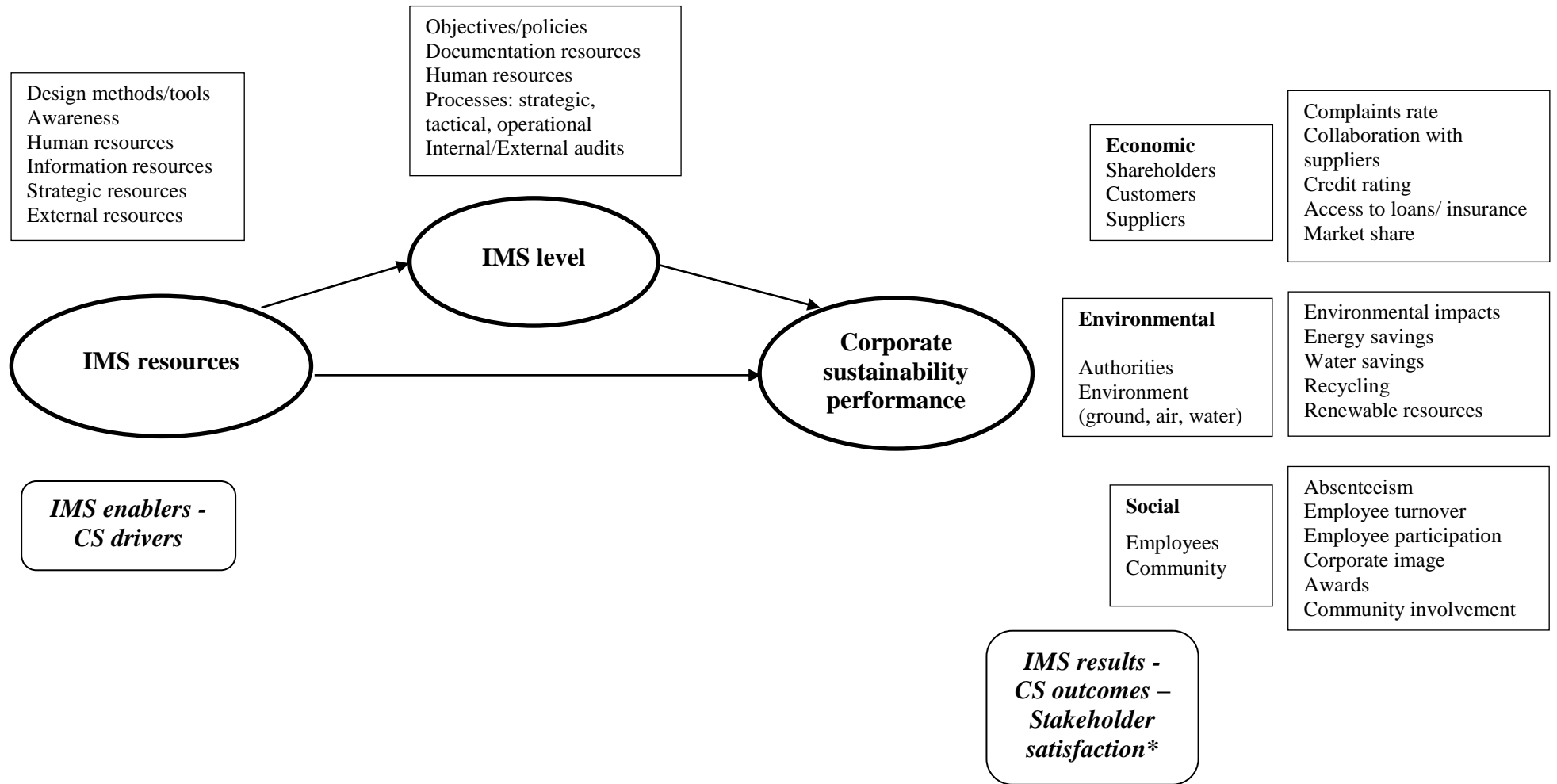


Figure 3. Research constructs and metrics