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# **Sustainability exploration and sustainability exploitation: From a literature review towards a conceptual framework**

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## **Abstract**

The mainstream thoughts in the literature on corporate sustainability recognise the importance of formulating the notion in the context of an organisation's ability to achieve its business goals and increase long-term value by integrating economic, environmental and social opportunities into its business strategies. Although theoretical and empirical research often points to a positive relation between corporate sustainability and organisational performance, attempts to conceptualise the multi-dimensional nature of sustainability practices are rare in the current literature. Thus, the purpose of this paper is to present a conceptual framework to aid in understanding and explaining the relationship between sustainability practices and organisational performance. The concepts of exploitation and exploration are adopted to distinguish between different types of sustainability practices. The research model is then analysed in terms of different outcomes related to sustainability performance, quality performance and business performance. Based on an interdisciplinary perspective, this paper suggests a new approach for the discussion of corporate sustainability and its implications for the organisational context. The results of the research suggest that the organisation may place a stronger focus on developing new sustainability-centred competencies when it is faced with an uncertain and rapidly changing environment. In contrast, efficiency and responsiveness to various stakeholders' expectations and demands might dominate in highly competitive environments. The primary conclusion of this paper is that the alternative relationships between sustainability practices (exploitation and exploration) and organisational performance depend on different factors, including environmental uncertainty, competitiveness, long-term orientation and institutional approaches. These arguments indicate that managers in resource-constrained contexts may benefit from focusing on the management of trade-offs between sustainability exploration and sustainability exploitation demands; however, for long-term success, the simultaneous pursuit of exploration and exploitation is both desirable and necessary.

**Keywords:** corporate sustainability, exploration, exploitation, conceptual framework, quality management

## 1. Introduction

In response to the growing debates regarding corporate sustainability (CS), one might infer that it is now commonly accepted that society will never achieve sustainable development without corporate support, as the private sector represents the main productive force of the economy (Bansal, 2002). Therefore, when transferring the notion of sustainability to the business level, it can be accordingly defined as *meeting the needs of an organisation's direct and indirect stakeholders without compromising its ability to meet the needs of future stakeholders* (Dyllick and Hockerts, 2002). In this way, expanding the boundaries of organisations' activities implies the integration of the concerns of stakeholders. While traditionally, one might have included a manufacturer (or service provider) and perhaps suppliers and/or customers, now governments, local communities, public interest groups, and future generations must also be accounted for (Corbett and Klassen, 2006). Hence, to achieve organisational excellence (Dahlgaard-Park, 2009), the organisation should aim to satisfy, or preferably exceed, the needs and expectations of its stakeholders without compromising the ability of other parties to meet their needs (Garvare and Johansson, 2010). Accordingly, the scope of quality management also seems to change due to an increasing focus on the multiple bottom lines of a company (Klefsjö et al., 2008). From this perspective, organisations should aim to deliver high-quality products while trying to balance economic prosperity, social issues, and a healthy ecological environment. This same idea is reinforced by several other researchers (e.g., Van Marrewijk and Were, 2004; Jonker and Karapetrovic, 2004), thus indicating that the objective of the business is the creation of value and synergies among the economic, social and ecological realms of corporate performance where the business focuses not only on the customers but on all of the interested parties (stakeholders). It seems that despite the increased awareness surrounding CS issues coupled with the growing pressure on organisations to act in socially responsible ways (Epstein and Rejc-Buhovac, 2010), there is still a need to enhance the understanding of the link between sustainability practices and overall organisational performance. Whereas prior studies on CS tend to focus predominantly on illustrating how sustainability performance impacts economic performance (e.g., Wagner, 2010), this study delivers a theoretical contribution by investigating the link between sustainability practices and overall organisational performance.

The issue of conceptualising the sustainability practices must be considered first to address this dilemma. Undoubtedly, there is a wide range of approaches to conceptualise and measure CS, or at least some elements of CS. The inconsistency surrounding the measurement of CS stems, in part, from incongruent attempts to define CS. However, this paper draws on the theoretical research and empirical work undertaken in relation to the concepts of exploitation and exploration to frame the sustainability practices in two different yet related dimensions.

Since March's article (1991), the conceptual distinction between exploration and exploitation has been widely used in a number of scientific fields, such as innovation management (e.g., Jansen et al., 2006) and quality management (e.g., Zhang et al., 2012). However, there is still a lack of empirical investigation closely related to exploration and exploitation in the CS literature. Although some previous empirical studies (e.g., Fairfield et al., 2011; Maletic et al., 2011) have addressed the issue of the conceptualisation and operationalisation of the holistic and multi-dimensional nature of sustainability practices, there is little systematic evidence regarding how to distinguish exploration aspects from exploitation aspects within a framework of CS. To address this gap, the research objective of this paper is to gain greater insight into sustainability practices from the perspective of the concepts of exploration and exploitation.

In general, one can argue that organisations are increasingly confronted with the paradoxical challenges of exploiting existing competencies and exploring new ones (Vera and Crossan, 2004). Organisations not only need to generate new knowledge associated with new products and services for emerging markets, but they also need to improve current competencies and exploit existing products and services (Danneels, 2002). In particular, this paper addresses a sustainability exploitation strategy that includes such elements as efficiency (e.g., reductions in materials, water and energy use), responsiveness (e.g., with respect to demands of various stakeholders), measurement (e.g., measuring progress towards goals of the organisation) as well as exploiting existing sustainability competencies. While sustainability exploitation is characterised by practices aimed at making an organisation more efficient through incremental improvements in processes and outputs (products/services), sustainability exploration is concerned with challenging existing sustainability solutions with innovative concepts and developing capabilities and competencies for sustainability-related innovation. This paper, however, draws on the previous assertion that there is a positive relationship between exploration and exploitation strategies and organisational performance (e.g., Jansen et al., 2006).

It is also suggested that not all sustainability practices need to be in place to produce superior outcomes. Following the contingency approach, some studies (e.g., Sila, 2007; Zhang et al., 2012) have demonstrated that the external environment and internal factors might influence the relationship between organisational practices and organisational performance. However, despite valuable theoretical and empirical contributions in the management literature, the assumption of universal applicability has permeated the literature on CS with little attention being given to the context-dependent argument. To address those shortcomings, this paper presents a conceptual framework that enables a concise characterisation of the proposed constructs, thereby filling the gap in the literature on CS.

The remainder of the paper is structured as follows. Section 2 discusses the theoretical background in terms of defining the CS-related concepts in the context of the link between sustainability and performance. Section 3 discusses the conceptualisation of sustainability practices and a research model that articulates the constructs included as well as the relationships

that this study intends to address. Section 4 concludes the paper with contributions and possible directions for future research.

## **2. Theoretical Background**

An overview of the literature on CS reveals that a variety of definitions has emerged. The definitions vary regarding the degree to which authors discuss the CS paradigm in light of corporate environmentalism (e.g., Banerjee, 2001) or corporate social responsibility (CSR) (e.g., McWilliams and Siegel, 2000), the degree to which the concept of CS is broadened to integrate and align economics with environmental and social concerns (e.g., Dyllick and Hockerts, 2002; Wagner, 2010), or the degree to which CS is discussed from the perspective of institutional theory (e.g., Bansal, 2002; Campbell, 2007). Therefore, in the literature, the term CS is used to refer to the triple bottom line and to the long-term profitability of organisations (e.g., Bansal, 2002, Dyllick and Hockerts, 2002). This can be understood as the successful market-oriented realisation and integration of ecological, social and economic challenges to an organisation (Schaltegger et al., 2013). According to Dyllick and Hockerts (2002), CS consists of the following elements: 1) a sustainable corporation considers not only economic but also social and environmental aspects, which is consistent with the triple bottom line concept; 2) CS requires a long-term business orientation as a basis for satisfying stakeholders' needs now and in the future; and 3) a sustainable corporation follows the rule of living on the income derived from capital, not on the capital itself. Furthermore, Lozano (2008) suggests that different sustainability definitions can be distinct with respect to the following categories: 1) the conventional economists' perspective; 2) the non-environmental degradation perspective; 3) the integrational perspective, i.e., the integration of the economic, environmental, and social aspects; 4) the inter-generational perspective, i.e., the time dimension; and 5) the holistic perspective.

As reflected by Stavins et al. (2002), in economics, sustainability is often interpreted in terms of maintaining human well-being over intergenerational time scales. However, considering the viewpoint as given by the definition of sustainable development offered by the World Commission on Environment and Development (WCED), some have raised challenges regarding this definition, claiming that it is too vague (Stavins et al., 2002), while others emphasised a lack of compromise or trade-offs among the various goals of the triple bottom line sub-systems (environmental, social and economic) (Pezzey and Toman, 2002). Furthermore, the work of Chichilnisky (1996) provides a significant contribution and alternative to the 'traditional' sustainability literature (such as the studies based on discount utility criterion) by proposing axioms that imply a more symmetric treatment of generations in that neither the present nor the future should be favoured over the other.

There is a substantial body of knowledge on the environment in ecological economics (Hoepner et al., 2012). Costanza et al.'s (1997) premise that the 'value of the world's ecosystems and natural capital', for example, has shaped much of the literature regarding the human–economy–environment interactions. It can be argued that while both disciplines (environmental

and ecological economics) share the common objective of understanding the human–economy–environment interactions, their approaches are profoundly different (Venkatachalam, 2007). Environmental economists utilise the neoclassical mainstream methodology with its strong focus on efficiency, while ecological economists strive to include broader socio-economic features into the scope of their analyses (Daly and Farley, 2004; Venkatachalam, 2007).

Recognition that economic development alone is not a sufficient condition for overall sustainability implies an integrative view in the context of simultaneous satisfaction of the triple bottom line (Dyllick and Hockerts, 2002). For instance, while focusing merely on the economic bottom line would lead to the economic viability of the organisation, such focus would not necessarily lead to sustainability in terms of environmental and social aspects (Lozano, 2008a). However, there is a tendency in recent literature to emphasise trade-offs in CS that address situations in which the economic, environmental and social aspects of CS cannot be achieved simultaneously (Hahn et al., 2010).

Intergenerational equity is inherent to sustainability. How shall resources be allocated over time to ensure that generations are treated equally, i.e., that no generation is favoured over another (Chichilnisky, 1996; Guest, 2010)? From this perspective, sustainability involves some concern for intergenerational equity and the recognition of the role of finite environmental resources in long-term decision making (Pezzey and Toman, 2002).

Given that the holistic perspective explicitly combines the integrational and inter-generational perspectives (Lozano, 2008, 2008a), this perspective proposes two dynamic and simultaneous equilibria that encompass the interactions of three dimensions (the economic, environmental, and social in the present) as well as the temporal aspects (i.e., short-, long- and longer-term perspectives) (Lozano, 2008, 2012).

### *2.1 Sustainability and performance*

With the increasing frequency, researchers have acknowledged that broader and more systemic approaches (Epstein and Rejc-Buhovac, 2010) regarding addressing CS issues can have a substantial impact on the competitiveness and economic performance of an organisation (e.g., Wagner, 2010; Orlitzky et al., 2003).

During the previous decade, the relationship between environmental and economic performance (e.g., Wagner and Schaltegger, 2004) and, more recently, the interaction between CS performance and economic performance (e.g., Wagner, 2010), has received considerable attention in the literature on CS. From a broader perspective, research on the business case for CS can be divided into two broad categories (Salzmann et al., 2005; Schaltegger and Wagner, 2006), theoretical studies and empirical studies. Some of the findings related to the performance aspects are discussed in the remainder of this section.

As argued by Salzmann et al. (2005), over the past few decades several theoretical frameworks and empirical studies on the relationship between social or environmental and financial performances have emerged. It could be argued that most of the frameworks refer to the

relationship between social and financial performance, given that they are largely based on the concepts of CSR (Carroll, 1999). In this regard, the concept of corporate social performance (CSP) has become an established umbrella term that embraces both the descriptive and normative aspects of the field and emphasising all that organisations are achieving or accomplishing in the realm of social responsibility policies, practices and results (Carroll and Shabana, 2010). In the long term, this implies a positive relationship between the CSR involvement of an organisation and the organisation's financial success, thereby suggesting that there is a business argument for CSR (Weber, 2008).

Most of the theoretically and empirically oriented studies on this subject have focused on the connection between CSR and corporate financial performance (e.g., Margolis and Walsh, 2003). While many studies have indicated that CSR practices have a positive impact on business results (e.g., Orlitzky et al., 2003), there are other studies that have been unable to establish any conclusive link between corporate financial performance and CSR (Margolis and Walsh, 2003). However, bearing in mind the previous findings presented in the literature on CSR, it can be argued that socially responsible corporate performance is associated with a series of bottom-line benefits. For example, prior studies provide evidence that socially responsible behaviour leads to better organisational performance (e.g., higher financial and non-financial performances, enhanced brand image and reputation, etc.) (e.g., Aras et al., 2010; Michelon et al., 2012).

Researchers have been widely interested in whether opportunities and competitive advantages in relation to corporate environmentalism exist (e.g., Prajogo et al., 2012; Eiadat et al., 2008). Prior studies have shown that by greening their operations, organisations have demonstrated benefits in their operations, including cost reduction, productivity, and innovation (e.g., de Oliveira et al., 2010; Iraldo et al., 2009). In other words, the literature reveals that there are competitive opportunities associated with environmentally friendly management (e.g., Poksinska et al., 2003; González-Benito and González-Benito, 2005). However, empirical support occasionally also contradicts these positive results (Wagner et al., 2002; Sarkis and Cordeiro, 2001). For example, the negative relationship between environmental and financial performances was supported in an empirical study conducted in the European paper industry (Wagner et al., 2002). However, the relationship between sustainability-related activities and performance benefits remains a critical research stream as providing evidence concerning the positive effect on the bottom-line is crucial, especially from the business perspective.

### **3. Sustainability Exploration and Sustainability Exploitation: A Conceptual Framework**

In this section, the concepts of exploration and exploitation are used to develop a framework to classify and describe a construct of sustainability practices. However, the key question remains whether and under what circumstances an organisation should be engaged with sustainability practices. To answer this question, its relations with business performance must be analysed.

Defining the constructs of sustainability exploitation and sustainability exploration practices first require specifying the common precepts underlying exploitation and exploration. Research on exploration and exploitation strategies have evolved considerably, to the point where it dominates the literature on organisational learning and strategy (e.g., March, 1991; Vera and Crossan, 2004) as well as studies on innovation (e.g., Jansen et al., 2006). Although both types of activities are essential for organisational survival, they create paradoxical challenges (Jansen et al., 2009). Whereas exploitation enables organisations to engage in refinement, implementation, and efficiency, exploration implements adaptive mechanisms that require experimentation, divergent thinking, search, and innovation (March, 1991). From this context, exploitation involves investing resources to refine and extend existing product innovation knowledge, skills and processes (Molina-Castillo et al., 2011).

The exploitation of competencies focuses on using and developing existing capabilities, endorsing improvements in existing products/processes and building on existing technological elements (Benner and Tushman, 2003; Molina-Castillo et al., 2011). Exploration competencies, in contrast, are associated with more radical innovations, as their focus is on the emergence of new customers and market needs (Cao et al., 2009; Danneels, 2002), suggesting that exploratory innovation requires non-routine problem solving and a deviation from existing knowledge (Jansen et al., 2006).

With respect to application, exploitation is oriented towards building capabilities for short-term effectiveness, whereas exploration has significance in the long-term and is oriented to the development of new knowledge to resolve the problems that the organisation faces (March, 1991; Jansen et al., 2006; Benner and Tushman, 2003).

In this respect, it is argued that the concentration on exploitation coupled with an inadequate focus on exploration discourages the organisation from pursuing learning and development (Auh and Menguc, 2005). This can shift organisations to focus on the short term and thus to potentially overlook long-term opportunities that could prove valuable. However, excessive exploration at the expense of exploitation can be costly as the tangible outcomes of exploration will only be realised in the distant future and then only with considerable uncertainty (Auh and Menguc, 2005).

Prior studies have predominantly suggested that organisations pursuing exploration and exploitation simultaneously obtain superior financial performance (He and Wong, 2004; Jansen et al., 2006). The capacity of an organisation to pursue high levels of exploration and exploitation simultaneously has been referred to as ambidexterity (Cao et al., 2009). Nonetheless, the literature supports a positive relationship between exploration and exploitation strategies and organisational performance. For instance, Jansen et al. (2006) suggest that developing both behaviours enables the organisation to improve its performance in dynamic environments.

Recent literature has paid particular attention to the importance of exploitation and exploration in relation to quality management (Zhang et al., 2012; Javier et al., 2013), and one may argue that the tension between exploitation and exploration constitutes valuable avenues for

study of CS. Therefore, in this study, the distinction between exploration and exploitation to CS is applied, and it is argued that it is essential to distinguish two knowledge domains in which different types of sustainability exploration and sustainability exploitation occur.

*Sustainability exploitation.* There are theoretical arguments that support the idea that the exploitation concept can be utilised within the CS framework. One key starting point in the debate on sustainability management is the inclusion of stakeholders and the integration of their respective demands (Seuring and Gold, 2013), which is considered by various studies to be crucial for driving sustainability performance (e.g., Asif et al.; 2010; Searcy, 2011). From the perspective of sustainability exploitation practices, organisations must achieve on-going incremental improvements (Stone, 2006) to effectively address the reductions in materials, water and energy use and the improvements in productivity. Accordingly, one of the key premises of sustainability exploitation practices is to improve sustainability performance (Wagner, 2010) and to concurrently increase competitiveness (Schaltegger and Wagner, 2006). However, a wide variety of approaches can be employed by organisations to address CS issues and to improve performance. To monitor the progress of these various approaches, the organisation must develop suitable sustainability performance measurement systems (Searcy, 2011), which are also considered essential aspects of sustainability exploitation practices.

*Sustainability exploration.* It is recognised that organisations need new insights for innovation and exploration of the unknown to contribute to sustainable business management (Van Kleef and Roome, 2007). Recently, the literature has paid attention to sustainability-related innovation, predominantly through the search for ways to manage product development in a more sustainable manner (Hallstedt et al., 2013). With respect to the context of a business case (Schaltegger and Wagner, 2006), the emphasis has been on sustainability-related innovation (Wagner, 2008). Stemming from the previous studies on exploration and exploitation (e.g., Zhang et al., 2012) as well as on sustainability-related innovation (e.g., Klewitz and Hansen, 2013; Wagner, 2008), sustainability exploration practices reflect process innovation (e.g., end-of-pipe technological solutions), product innovation (e.g., improvements or entirely new products or services) and sustainability-oriented learning (e.g., development of capabilities and competence for sustainability-related innovation).

Recognising that exploration and exploitation are multi-level and multi-faceted, this paper refers to the typology for defining the exploration and exploitation concepts proposed by Li et al. (2008). They proposed a framework that explicitly distinguishes between two domains to define exploration and exploitation: (1) the ‘function domain’, which regards each function on the value chain as unique in its type of learning, and (2) the ‘knowledge distance domain’, which distinguishes exploration from exploitation based on the distance between the new knowledge that an organisation searches and its existing knowledge base. First, sustainability exploitation and sustainability exploration concepts are associated primarily along the two value chain domains: technology (product development) and product-market (manufacturing and marketing). For example, if an organisation wants to excel at both improving existing products (i.e.,

derivative innovation performance) and generating new products (i.e., breakthrough innovation performance), it should engage in different types of innovation activities (de Visser et al., 2010). With respect to the sustainability perspective, organisations are required to devote resources to actively acquire new sustainable products/services. Although an organisation can have a high level of sustainability exploration to obtain strategic flexibility over other competitors, it might jeopardise its profitability (Wagner, 2008). As perceived from this context, an organisation must develop and exploit competencies that enable it to make sustainability improvements of existing products that ultimately provide a competitive advantage (Pujari et al., 2003). Regarding the product-market domain, one might argue that organisations must allocate resources to examine emergent stakeholders' preferences and to integrate them into the early stage of product/service development (Polonsky and Ottman, 1998). From the manufacturing perspective, process innovations in terms of new sustainable solutions (Rennings et al., 2006) can be associated with sustainability exploration. Furthermore, one could relate sustainability exploitation perspective and its underlying dimensions to the operational domain that strives to increase the organisation's ability to apply cost-efficient solutions to solve sustainability issues (Côté et al., 2006).

Regarding the knowledge distance domain, sustainability exploitation and sustainability exploration practices are considered to be cross-functionally oriented. The latter is especially relevant to the debate on the balance between sustainability exploration and sustainability exploitation. This is further elaborated through the proposed research questions presented in the remainder of this paper. In contrast to the value chain function perspective that usually treats exploration and exploitation as dichotomous measures, the knowledge domain operationalises exploration and exploitation as a continuous measure along any of the three dimensions of the knowledge space: cognitive, temporal and/or spatial (Li et al., 2008). In particular, sustainability exploitation involves local searches that build on an organisation's existing sustainability capabilities, while sustainability exploration involves more distant searches for new capabilities (Van Kleef and Roome, 2007) or even the development of new organisational mental models (Lozano, 2011). Furthermore, it can be assumed that sustainability exploitation and sustainability exploration is that they are considered more of a learning- and capability-building process rather than concrete outcomes with respect to product or process (Li et al., 2008).

The particular dimensions of sustainability practices that are framed within the concepts of exploitation and exploration are further described and discussed in the remainder of this section.

*Stakeholder orientation.* There is a growing awareness that an extension of the focus from customer orientation to the wider concept of stakeholder orientation means that a considerable portion of quality-management theory might well be applicable to sustainability-oriented management (Garvare and Johansson, 2010; Isaksson, 2006). Recent research indicates that the quality movement (Dahlgaard-Park, 2011) has progressed to a third generation of quality in which notions of accountability and responsibility are blending into the quality framework, a phenomenon that could be defined as 'the stakeholder view of quality theory' (Foster and Jonker, 2003). Consistent with this reasoning, it is suggested that CS cannot be achieved in the absence

of a quality management perspective. Therefore, CS should be considered in the context of linking the organisation's quality management approach with society (e.g., primary and secondary stakeholders). From the stakeholder theory perspective, Seuring and Müller (2008) suggest that external pressures and incentives set by primary and secondary stakeholders are the starting point for organisations to engage in sustainability. For instance, Castka and Prajogo (2013) reveal that the pressure from secondary stakeholders contributes to the adoption of environmental sustainability practices, in particular ISO 14001. Therefore, a key challenge of CS integration is to address the diverse needs of different stakeholders and interested parties (Asif et al., 2011a). As reflected in the study by Rocha et al. (2007), as stakeholders assume a dual role, they may provide input to the organisation's systems and may also receive output from those systems. It is therefore necessary for organisations to identify the input in terms of needs and expectations of various stakeholders, to design products/services and production systems to meet these needs, and to measure the results as the basis for improvement. However, identifying stakeholder demands and then incorporating them into business processes requires a systematic approach characterised by planning, managing resources, designing processes, and continuing improvement (Asif et al., 2011).

According to the above discussion, exploitative practices pay attention to measuring the extent to which an organisation has addressed the current needs and expectations (requirements) of the stakeholders. It is further suggested that stakeholder orientation can affect the organisation's actions aimed to create performance benefits. For instance, González-Benito et al. (2011) provide empirical evidence of the importance of stakeholders as promoters of a greater environmental commitment by organisations, thereby influencing organisations to adopt environmental management systems and gain social and market benefits (Prajogo et al., 2012).

In contrast, exploration practices refer to the capacity of the organisation to identify new stakeholder needs and desires. Accordingly, organisations must assimilate the insights gained from pro-active stakeholder orientation (e.g., stakeholder dialogue and stakeholder knowledge integration) and transform those insights into innovative products and operations (Ayuso et al., 2006). Moreover, one could also argue that for real sustainability improvements to occur, organisations need to consider the sustainability impacts of all activities before the product is designed, more specifically, at the early stage of product design when the definition and selection of the quality characteristics are being investigated. It has also been suggested that green, new product and service development processes appear to extensively involve external stakeholders (Driessen and Hillebrand, 2010). In particular, exploration practices emphasise the early involvement of relevant stakeholders (Polonsky and Ottman, 1998), as doing so generally enables better alignment of the product concept with the requirements of both the customers and the other stakeholders (Ernst, 2002).

*Process management.* Although the process management approach was first employed in the domain of manufacturing and operations improvement as a core element of quality management initiatives, its sphere of influence has expanded to include those activities (practices) underlying

the concept of CS. For example, the main aim of internal quality improvement is to make the internal processes leaner, i.e., to prevent defects and problems in the internal processes, which, in turn, results in cost reduction (Dahlgaard et al., 1998).

From the CS perspective, Kleindorfer et al. (2005) emphasise the synergies between environmental sustainability practices and quality performance (i.e., lean and green). The fundamental parallels between quality and environmental management include the reduction of waste, the efficient and effective use of inputs, and the control of internal processes (Corbett and Klassen, 2006). As such, a transition towards CS is closely tied to the more efficient and conscious usage of raw materials and energy sources, and the adoption of innovative environmentally sound technological solutions, etc. (Bonilla et al., 2010). In the context of the latter, eco-efficiency is considered as beneficial for improving an organisation's competitiveness and economic performance (Wagner and Schaltegger, 2004), while it simultaneously stimulates creativity and innovation as companies search for new ways of doing things (Côté et al., 2006, Klewitz and Hansen, 2013).

Drawing on the above discussion, it is suggested that sustainability exploitation practices focus on performance measurement and incremental refinements of existing processes to enhance competitive advantage. It is therefore proposed that exploitative practices are related to the capability of an organisation to measure and manage the interaction among business, society and the environment (Schaltegger and Wagner, 2006; Poksinska et al., 2003). Accordingly, the organisation must be able to identify stakeholders and their needs, which is the starting point for deciding what to measure (Neely et al., 2001). As such, a performance measurement system can help an organisation to measure progress towards its goals in terms of sustainable development and, by doing so, help the organisation understand its current situation as well as the key issues it must address (Searcy et al., 2008). However, to successfully put the concept of CS into operation, a more comprehensive and pro-active approach of performance measurement should be established. In particular, a performance measurement system should be contingency based (capable of accommodating the wide variety of circumstances), be linked to stakeholder theory, and be practice oriented (Searcy, 2011).

Furthermore, exploration practices highlight change in terms of a pro-active approach to continuous improvement and innovation. In view of the above considerations, processes are essential in terms of successful adaptation and could be considered as a way to effectively respond to the key external changes (Espinosa and Porter, 2011).

*Product/service design.* The essence of effective new product/service design lies in creating products whose core attributes, which are those that deliver the basic benefits sought by customers, and auxiliary attributes, which help to differentiate between products, meet the needs of customers and other internal and external stakeholders (Pujari et al., 2003). Therefore, in addition to the traditional product criteria, e.g., economic, quality, market, customer requirements, technical feasibility and compliance issues, the following two sustainability criteria should also be considered: 1) environmental impacts and 2) social impacts. In this respect, the

integration of the sustainability criteria with traditional product and service specifications over the entire product life cycle could be considered as one of the features of developing sustainable products and/or services (Maxwell and van der Vorst, 2003).

It is suggested in this paper that exploitation practices emphasise a systematic way to integrate CS aspects into product/service design. In particular, this means that the goal of product and/or service development processes is to produce products and/or to provide services that are more sustainable, meet customer requirements and are cost effective (Maxwell and van der Vorst, 2003). However, integrating sustainability could also be considered from a perspective in which sustainable development itself provides a framework for innovation, a perspective that could lead to the development of new products and business ideas based on sustainability aspects (Byggeth et al., 2007). Another view recognises that the new product development process is a multidimensional phenomenon that encompasses development processes focused on the improvement of existing products as well as processes focused on the generation of new products (De Visser et al., 2010). As exploration practices emphasise the development of new products and/or services while simultaneously being a strong foundation for identifying improvement opportunities, such practices are inherently related to cross-functional interactions and cooperation (Jansen et al., 2006). In this regard, the aim of exploration practices is to integrate the sustainability perspective into the product innovation processes at the earliest possible point (Hallstedt et al., 2013).

*Learning orientation.* Over the previous decade, authors have stressed the importance of organisational learning in the pursuit of sustainability (e.g., Siebenhuner and Anold, 2007), and links between organisational learning and sustainability have shown signs of increasing convergence (Molnar and Mulvihill, 2002). Learning and development processes are believed to be a critical path towards the sustainable development agenda (Muller and Siebenhuner, 2007). For top managers, sustainability-focused organisational learning (Molnar and Mulville, 2003) not only requires that they develop a strong sustainability vision but that they also recognise the value of bottom-up innovation, educate middle managers in sustainability policies and cultural values, incentivise new initiative development, and reward both the quantity and quality of initiative development (Espinosa and Porter, 2011).

In accordance with March's (1991) notion of the exploitation concept, a learning orientation for exploitation focuses on the skills required as part of a current job position, e.g., to ensure that employees are able to achieve the objectives of sustainability programs. However, a learning orientation for exploration relates to learning and knowledge development intended to stimulate innovation (Van Kleef and Roome, 2007). This premise is fairly consistent with the work of Stone (2006), who proposed that the significance of the changes required for those businesses in pursuit of sustainability suggests that 'double-loop' learning, which is characterised by changes in the core values, must occur.

As discussed by Dahlgaard-Park (2006), change, development and transformation are some of the most powerful and essential aspects of learning. From the perspective of various learning

models, both double- and triple-loop learning can be considered to be generative learning, while single-loop learning is considered to be adaptive learning (Dahlgaard-Park, 2006). Therefore, to move towards higher levels of sustainability, one must overcome existing mental models by fostering and supporting creativity and organisational learning (Lozano, 2011). For instance, radical innovation requires a higher level of learning, such as triple-loop learning. Moreover, Cohen and Levinthal (1990) argued that outside sources of knowledge are often seen as critical to the innovation process. Taking this perspective into account, we suggest that a learning orientation for exploration emphasises the development of new competencies that support innovation in the organisation.

Therefore, the following dimensions (Table 1) that have a strong congruence with quality management, stakeholder orientation, process management, product/service design and learning orientation were determined to examine how to tailor sustainability practices in relation to organisational performance.

Table 1. Overview of the constructs of sustainability exploitation and sustainability exploration and the supporting literature

<b>Dimension</b>	<b>Sustainability Exploitation</b>	<b>Sustainability Exploration</b>	<b>Supporting literature</b>
Stakeholder orientation	Identify existing stakeholders Assess stakeholder's needs and expectations	Explore new needs and expectations of stakeholders Identify new stakeholders Involve stakeholders in the early stage of product/service development	Ayuso et al. (2011), Asif et al. (2011), Asif et al. (2010), Garvare and Johansson (2010), Driessen and Hillebrand (2010), Zink (2005)
Process management	Continuous improvement of existing processes Improve yield and/or material/energy consumption Performance measurement	Explore new ways for improving (new) processes Alternate/innovative technologies Dynamic change of the organisation	Searcy (2011), Bonilla et al. (2010), Corbett and Klassen (2006), Schaltegger and Wagner, (2006), Kleindorfer et al. (2005), Poksinska et al. (2003), Veleva et al. (2001)
Products/services design	Cost effectiveness Incremental improvements of existing products / services Systematic	Explore opportunities of new products/services Product lifecycle perspective Pro-active approach to sustainability Cross-functional structure	Hallstedt et al. (2013), De Visser et al. (2010), Byggeth et al. (2007), Waage (2007), O'Reilly and Tushman (2004), Maxwell and van der Vorst

	integration of sustainability aspects		(2003)
Learning orientation	Continuous training and upgrading of employees' current skills	Developing new skills and capabilities External collaboration/interactions	Zhang et al. (2012), Espinosa and Porter (2011), Muller and Siebenhuner (2007), Siebenhuner and Anold (2007), Dahlgaard-Park (2006), Molnar and Mulville (2003), Cohen and Levinthal (1990)

### 3.2. Research model

Based on the review of the literature, Figure 1 presents an integrated conceptual framework for conceptualising the sustainability practices construct, the primary factors that shape it, and its outcomes. As illustrated in Figure 1, the framework presents sustainability practices as a central point of the model. On the right, the relationship between sustainability practices and organisational performance is evidenced in terms of output measures (such as sustainability, quality and innovation performance) and in terms of outcome measures (financial and market performance). The conceptual framework states that the capability to implement sustainability practices is highly influenced by the organisation's characteristics (i.e., *implementation enablers*) that enable the successful implementation of sustainability practices and the achievement of performance benefits (e.g., triple-bottom-line results).

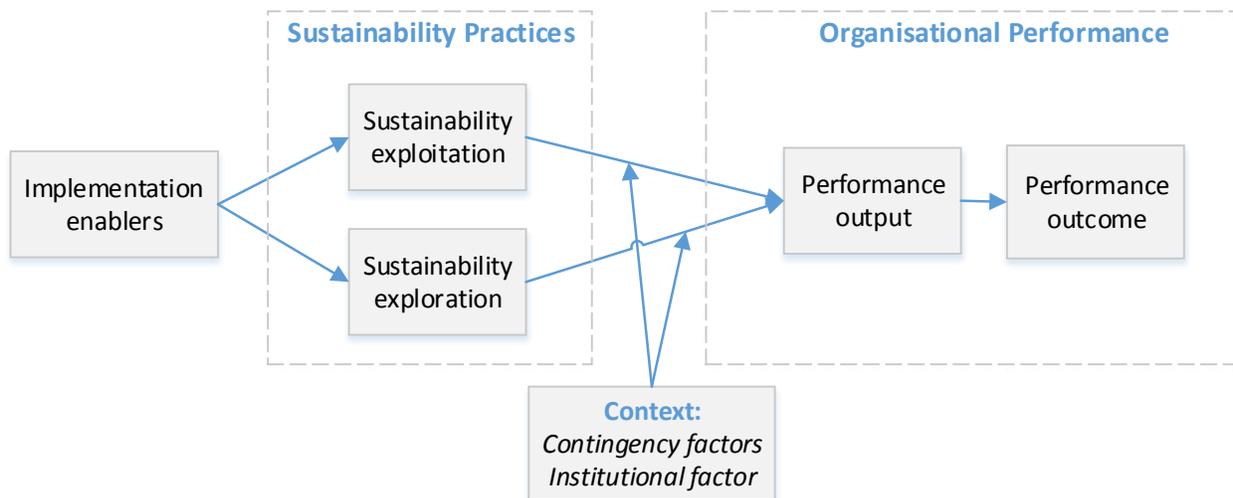


Fig. 1: Conceptual framework

Based on the conceptual framework presented and the literature supporting it, the questions for future research have been formulated as presented in the remainder of this section. Therefore,

given the literature survey conducted thus far, the questions presented in this section have not been addressed thoroughly in previous studies of CS and organisational performance. Essentially, the primary proposition is that sustainability practices, as perceived through a multidimensional perspective (Lozano, 2012; Dyllick and Hockerts, 2002), can be adjusted in congruence with the environment wherein organisations operate through the choice of a different type of sustainability practice (i.e., *exploitation* and/or *exploration*) and where such practice is affected by the internal characteristics of the organisations.

*Dependent variable: Organisational performance.* Despite the importance of measuring organisational performance, there is still a need for studies to address the question of how *overall organisational performance* is or should be measured. Attempts have been made to measure performance based predominantly on financial measures, while less emphasis has been placed on the non-financial components of performance measurement. However, criticism of financial indicators, as merely stimulators of short-term thinking (e.g., Kaplan, 1983; Otley, 1999), has revealed the need to use a more holistic approach when measuring performance. In this regard, more recent empirical studies (e.g., Lin and Kuo, 2011; Kaynak, 2003) have shifted their focus, now using multiple items as indicators of organisational performance. Hence, different performance dimensions may have to be combined to obtain a balanced and complete view of the organisation's performance (Tangen, 2003). Previous research had used many variables to measure organisational performance, such as profitability, gross profit, return on asset (ROA), return on investment (ROI), return on equity (ROE), return on sale (ROS), revenue growth, market share, sales growth, and operational efficiency (e.g., Fuentes-Fuentes et al., 2004, Curkovic et al., 2000). However, the question arises whether the variables used in these empirical studies actually measure the same phenomenon, i.e., overall organisational performance. In recent years, there has been a proliferation of approaches regarding performance measurement across a range of disciplines (Chenhall and Langfield-Smith, 2007), which can also be considered one of the sources of ambiguity in establishing the scale of measurement of overall organisational performance. Notwithstanding the above, we found that the following three levels of performance measures are normally used in empirical research: financial measures, market measures, and operating measures (e.g., Kaynak, 2003; Martensen et al., 2007). Furthermore, environmental and social performance measures are expected to become more valuable when researchers and/or organisations are conceptualising and operationalising the scales for measuring overall organisational performance (Veleva et al., 2001; Hutchins and Sutherland, 2008). While recognising that performance is a multi-dimensional concept (Chenhall and Langfield-Smith, 2007), one can conceptualise organisational performance as a multidimensional construct. Therefore, we understand the concept of organisational performance to be composed of the following constructs: *financial and market performance, quality performance, innovation performance, environmental performance* and *social performance*.

Arguments that support the positive relationship between sustainability practices and organisational performance suggest that organisations can increase their competitiveness and

simultaneously support sustainable development (see, e.g., Wagner et al., 2010; Koo et al. 2013). Therefore, organisations have the opportunity to address sustainable development while improving efficiency, reducing costs, increasing innovation rate, and enhancing profitability (Koo et al. 2013; Schaltegger, and Wagner, 2006). In this regard, one can argue that increases in the extent of sustainability practices will lead to increased economic performance (Wagner, 2010), increased innovation performance (Rennings et al., 2006), increased environmental performance (Wagner and Schaltegger, 2004), increased social performance (Weber, 2008) and increased quality performance (Corbett and Klassen, 2006). Drawing on the theoretical underpinnings of exploitation and exploration, this study implies that both specific competencies and capabilities matter in ensuring that sustainability efforts contribute to the overall organisational performance. Therefore, while recognising the trade-offs in CS (Hahn et al., 2010), it can be proposed that organisations should simultaneously favour short-term efficiency and long-term discovery (Benner and Tushman, 2003; Gibson and Birkinshaw, 2004) to maximise performance benefits. As such, the following question for future research is proposed:

*Research question 1: Is there a positive relationship between sustainability exploitation and exploration practices and organisational performance?*

*Independent variable: Implementation enablers.* The CS drivers such as *leadership* and *organisational culture* are necessary to foster the change from unsustainable status quo towards *more sustainable activities* (Lozano, 2013). Consistent with this argument, several prior studies (Bonn and Fisher, 2011; Fairfield et al., 2011; Baumgartner, 2009; van Marrewijk and Werre, 2003) have emphasised that culture change is crucial for the successful implementation and deployment of sustainability practices. As argued by Baumgartner (2009), CS activities and strategies must be embedded in the organisational culture to be successful. Similarly, it also crucial that the organisation reach a fit between the culture and the CS activities (Baumgartner, 2009). According to the Doppelt (2003), the ultimate success factor for successfully embracing and implementing sustainability is leadership. Bonn and Fisher (2011) concur with this assessment, arguing that for organisations to become more sustainable, managers must address the different dimensions of sustainability at the strategic level, both during the strategic decision-making process and as part of the strategy deployment process at the corporate, business and functional levels. Therefore, incorporating sustainability issues, as reflected through stakeholders' needs and expectations, into the corporate strategy (Porter and Kramer, 2006) is considered essential for successfully implementing sustainability practices.

Based on the above, *the implementation enablers' construct* was conceptualised. With regard to organisational support, this paper suggests that the main enablers for the successful adoption of sustainable practices are *top management support*, *integration of sustainability into vision and strategy*, and establishing a *sustainability-centred culture*. This perspective is consistent with prior studies (e.g., Fairfield et al., 2011) that indicate that foundational organisational enablers, such as values, top management support, and strategic integration, play a crucial role in

strengthening the sustainability agenda. The above arguments imply that organisations must demonstrate a strong commitment to sustainable development (Hahn and Scheermesser, 2006) and establish a sustainable value system (van Marrewijk and Werre, 2003; Hart and Milstein, 2003) to act pro-actively in implementing environmental and social practices. Furthermore, arguments might be posited suggesting that the extent to which organisations deploy implementation enablers significantly differs with regards to whether organisations' practices are focused towards short-term efficiency or towards developing long-term capacities. It can be argued that building long-term capacities requires a holistic approach that consists of the combination of the organisation's sustainability initiatives, as these initiatives help the organisation to effectively embed sustainability into its system (Lozano, 2012). Therefore, to shift from a reactive (i.e., compliance-based perspectives on sustainability) approach towards a more dynamic and holistic approach that offers flexibility and innovative capacity, organisations should focus on organisational elements, such as leadership, strategic planning, and culture (Smith and Sharicz, 2011; van Marrewijk and Werre, 2003).

As derived from Figure 1, we regard the construct of implementation enablers to be an antecedent in relation to sustainability practices. As such, we posit the following questions for future research:

*Research question 2a: Is there is a positive relationship between sustainability enablers and sustainability exploitation and sustainability exploration practices?*

*Research question 2b: Do implementation enablers affect sustainability exploration practices to a greater extent than they affect sustainability exploitation practices?*

*Context: Contingency and institutional variables.* This paper proposes that a contingency approach (Sila, 2007) and an institutional perspective (Matten and Moon, 2008), rather than an assumption of the universal applicability of sustainability practices, are needed. Contingency theory assumes that organisations attain effectiveness by fitting the characteristics of the organisation to contingencies that reflect the situation of the organisation (Donaldson, 2001). Accordingly, one can argue that the implementation of sustainability practices is not the same for all organisations, as several factors may influence the implementation and configuration of sustainability practices. Consistent with the contingency approach, one can define two basic principles for the implementation of sustainability practices:

- There is no single best way to implement sustainability practices within different organisations, and
- There is no single right mix of sustainability exploitation and sustainability exploration practices that can be applied in all organisations.

Contingency and institutional variables have been identified in the literature as factors that influence the customisation of the organisational practices as well as the relationship between these practices and performance implications (e.g., Sila, 2007; Zhang et al., 2012). The model presented in Figure 1 includes two measures of the business environment where uncertainty and

competitiveness are control variables for organisation performance because both have been shown to be associated with performance in some situations (e.g., Jansen et al., 2006). In the context of strategic orientation, pro-activeness and long-term orientation are proposed as internal contingency variables. One can adopt scales provided by Morgan and Strong (2003) to operationalise the proposed contingency variables. Although previous studies have addressed the application of institutional theory in the fields related to CS (e.g., Matten and Moon, 2008), this remains an area of research in CS that needs to be explored further, especially with respect to empirical studies. From this perspective, it is anticipated that the country of origin as an institutional factor might explain the potential differences among countries in the relationship between sustainability practices and organisational performance. The proposed contextual factors and corresponding research questions for future research will be described in the remainder of this section.

*Environmental uncertainty.* As stated by Daft (2004), *environmental uncertainty* means that decision makers have limited information about environmental factors and have a difficult time predicting external changes. Related to *environmental uncertainty*, another factor, i.e., *environmental dynamism*, refers to the rate of change and the level of instability factors within the environment (Li and Simerly, 1998). However, no previous research has investigated the extent to which this factor may influence the relationship between sustainability practices and organisational performance. Regarding exploratory and exploitative innovations, previous studies have argued that environmental uncertainty is likely to positively moderate the impact of exploratory innovations and financial performance (Jansen et al., 2006). Similarly, Zhang et al. (2012) indicate that exploitation activities influence performance to a greater degree than exploration activities when environmental uncertainty is low. Hence, in dynamic environments (i.e., high environmental uncertainty), it is expected that organisations that are pursuing sustainability exploration practices increase their performance. Accordingly, it is suggested that organisations that are pursuing sustainability exploitation practices in an environment with high uncertainty tend to gain fewer performance benefits. Moreover, the increase in environmental uncertainty raises new questions as to whether it is wise to focus on either the exploitation or exploration practices. In response to this question, Gupta et al. (2006) investigated the balance between exploration and exploitation activities and the influence on organisational performance and concluded that it depends on whether the two concepts are viewed as mutually opposing or as complementary. Based on these assumptions, the following research questions are proposed:

*Research question 3a: Do higher levels of sustainability exploitation positively affect performance to a greater degree than sustainability exploration when environmental uncertainty is low?*

*Research question 3b: Do higher levels of sustainability exploration positively affect performance to a greater degree than sustainability exploitation when environmental uncertainty is high?*

*Competitiveness.* It can be assumed that the relationship between sustainability practices and organisational performance is also affected by the level of competitiveness. This argument is supported by Campbell (2007), who proposed that socially responsible behaviours of an organisation are associated with the level of competition. Moreover, the authors argue that corporations are less likely to act in socially responsible ways if there is either too much or too little competition.

In fact, Vogel (2005) emphasised that regardless of which CSR practices are being implemented, companies must survive in highly competitive markets. In the context of innovation, Jansen et al. (2006) proposed that competitiveness negatively moderates the relationship between exploratory innovation and financial performance. This proposition is consistent with the work of Zahra (1996), who argued that competitiveness usually reduces available resources for exploratory innovations. Furthermore, Jansen et al. (2006) provided empirical evidence suggesting that environmental competitiveness positively and significantly moderates the relationship between exploitative innovation and financial performance. Similarly, Auh and Menguc (2005) confirmed that exploitation in response to increased competition is positively associated with organisational performance as measured through efficiency and effectiveness. They found that this applies to organisations that have a strong orientation towards exploration. Such organisations are classified as prospectors. However, they did not confirm their prediction suggesting that more exploration would be negatively related to the organisation's effectiveness in the case of increased competitive intensity.

Paradoxically, in a context of strong competition, the most pro-active firms require more stringent regulations to institutionalise the demand for CSR and restore the terms of competition (Quairel-Lanoizelée, 2011). In contrast, it may be argued that with growing competition, organisations need to improve their overall efficiency, encourage innovation and reduce average operational costs to achieve competitive advantages. In accordance with the above discussion, the following research questions have been developed:

*Research question 4a: Does competitiveness negatively moderate the relationship between sustainability exploration and organisational performance?*

*Research question 4b: Does competitiveness positively moderate the relationship between sustainability exploitation and organisational performance?*

*Long-term orientation.* The contingency approach may also be used to examine whether a specific strategic orientation affects sustainability practices from the perspective of performance outcomes. More precisely, a long-term strategic orientation is proposed as an internal contingency factor that may affect the implementation of sustainability practices. Progress towards CS may be reflected in the capability or capacity of managers to look strategically at the organisation's long-term future in local and global communities (Dunphy et al., 2003).

Taking into account the above perspectives, it is suggested that CS requires a long-term business orientation as a basis for satisfying stakeholders' needs, now and in the future (Dyllick

and Hockerts, 2002). In this context, organisations must focus on long-term horizons and adopt a strategic approach towards CS (Bonn and Fisher, 2011).

Several authors (e.g., March, 1991; O'Reilly and Tushman, 2004) suggested that organisations should balance reactive and pro-active business logic to achieve long-term prosperity and to remain competitive. Furthermore, previous empirical studies have examined the interaction between exploitation and exploration and suggested that organisations can simultaneously pursue both types of activities to create a competitive advantage (He and Wong, 2004). As such, the following research question has been developed:

*Research question 5: Is there is a positive interaction effect between exploitation and exploration practices when an organisation has a high level of long-term orientation?*

*Pro-activeness.* Morgan and Strong (2003) included pro-activeness as one of the dimensions of strategic orientation. However, the findings of their work did not support the argument that pro-activeness is positively related to performance. Hahn and Scheermesser (2006), however, found that organisations perceive a sustainability strategy as being pro-active in relation to environmental and social concerns and that these organisations act as early adopters or even innovators in implementing environmental and social measures. Lee (2009) also supports the argument that, over time, corporate attitudes towards sustainability have changed considerably from a reactive to a pro-active stance. Considering the exploitation and exploration concepts, Lubatkin et al. (2006) suggest that organisations that are primarily pursuing exploration are proficient at pro-actively responding to environmental changes by seeking revolutionary innovations. In contrast, organisations that are primarily oriented towards exploitation are more concerned with the improvement of their efficiency and thereby refine their existing resources and capabilities (Auh and Menguc, 2005; Matsuno and Mentzer, 2000). As such, the following research question has been developed:

*Research question 6: Are organisations with a strong focus on pro-activeness more likely to implement sustainability exploration practices?*

*Institutional approach.* Research on the relationship between institutions and organisations illustrates that the institutional environment shapes and influences sustainability-related business practices (Matten and Moon, 2008). Regionally or nationally distinct societies have characteristics and specific elements as well as unique cultural characteristics and economic and industrial structures (Harzing and Sorge, 2003). Therefore, the organisational practices of companies that originate from different countries or regions may diverge (Harzing and Sorge, 2003). Consequently, this divergence may be applicable to organisations implementing sustainability-related practices. According to Matten and Moon (2008), sustainability practices can be shaped on the basis of coercive isomorphisms (e.g., by self-regulatory and voluntary sustainability initiatives), mimetic processes (e.g., relying upon best practice in the field of sustainability) and through normative pressures (e.g., inclusion of CSR/CS in the curriculum).

These arguments may also be substantiated by the fact that certain differences exist within the various business environments (e.g., level of regulations, stakeholder pressure, corporate cultures, etc.). For instance, government environmental policies and regulations, industry environmental management practices, and pro-environmental consumer behaviours are some of the methods that have emerged as a response to sustainability challenges (Banerjee, 2001). Therefore, increased regulatory forces and public environmental concern have the potential to influence business actions (Banerjee, 2001). Drawing on the theoretical underpinnings of the work of Matten and Moon (2008), it is proposed that exploration practices might differ across countries to a greater extent than exploitation practices. For example, some countries might have similar approaches in terms of formal, mandatory and codified rules or laws, while they can have substantially different approaches regarding voluntary programs and strategies, as well as having different attitudes or approaches towards the incentives and opportunities that are motivated by the perceived expectations of different stakeholders (Matten and Moon, 2008). As such, the following research question has been developed:

*Research question 7: Is there is a significant difference regarding the country of origin on the effects of sustainability exploitation and sustainability exploration on organisational performance?*

#### **4. Discussion**

*Implications for future research.* In considering the directions for future research, this study highlights various research opportunities that have not yet been adequately addressed.

First, the proposed relationships between CS and organisational performance require further exploration. Subsequent empirical examinations are necessary to test the proposed relationships between sustainability practices and organisational performance. An important issue for the future might be studies designed to investigate the complexities of the relationship between CS and organisational performance. In this regard, future studies are needed to develop consistent metrics (i.e., measurement scales) for measuring CS from the perspective of exploitation and exploration. For the purpose of validating the measurement instrument, a combined exploratory (exploratory factor analysis (EFA)) – confirmatory (confirmatory factor analysis (CFA)) approach is proposed. While recognising that validation is a multifaceted process, it is suggested that validation should be assessed in terms of content validity and construct validity (i.e., convergent and discriminant validity). In addition, several statistical techniques can be applied to answer the proposed research questions. For example, regression analysis can be used to examine the influence of sustainability practices on organisational performance (RQ 1) and to investigate the moderating effect through an interaction term in the regression model (e.g., RQs 4 and 5). Regression analysis can also be used for subgroup analysis, where the sample is split into subgroups of low versus high levels of the contingency variable (e.g., in the case of RQs 3 to 6).

Moreover, multiple regression with categorical predictors (dummy variables) (Field, 2005) can be applied to examine country effects on each of the performance measure (RQ 7).

Second, further studies are needed to investigate the interplay between sustainability exploration and sustainability exploitation. Future research should use ambidexterity and punctuated equilibrium as the two theoretical underpinnings (Gupta et al., 2006) to examine the balance between exploitation and exploration in regard to organisational performance. Additionally, future research may also capture multiple levels of analysis to uncover how the unit-level of sustainability exploration and sustainability exploitation practices moderates the relationship between sustainability practices and organisational performance.

Third, as projected from our propositions, future studies may investigate environmental contingencies (e.g., uncertainty, competitiveness) as well the effects of institutional factors (e.g., country of origin) on the relationship between CS and organisational performance.

Fourth, future research may examine the performance implications of different levels of exploratory and exploitative practices by including several relevant control variables (e.g., industry type, size, age). Moreover, institutional isomorphism, as underlined by self-regulatory and voluntary initiatives (e.g., EMS, quality management approaches, etc.), could be a useful theoretical underpinning for investigating sustainability practices orientation.

Finally, previous research on CS (Linnenluecke and Griffiths, 2010) has indicated a sustainability-oriented organisational culture as a potential research direction, suggesting that culture affects how CS is implemented and the types of outcomes that can be observed. Consequently, future studies could examine the influence of a sustainability-oriented organisational culture on sustainability exploration and sustainability exploitation orientation.

*Implications for managerial practice.* In this section, the aspects that managers should develop to enable the achievement of competitive advantage in light of CS are summarised. One of the main objectives of the study has been to discuss the potential of applying exploitation and exploration in the field of CS and to discuss their relationships with organisational performance. The insights obtained through a critical literature review permit us to draw a series of conclusions that managers should consider, with the most critical being whether managers should develop competencies that underline both notions: *sustainability exploitation* and *sustainability exploration*.

Our paper particularly suggests that decisions about the development and utilisation of the resources and competencies related to both sustainability exploitation and sustainability exploration are essential for the achievement of superior performance. Although exploration practices that aim to develop new (or substantially improve existing) processes and products are not easy to carry out because they involve organisation-wide commitment to sustainability-oriented organisational learning, managers should recognise that the mere exploitation of the existing competence base does not guarantee a sustainable competitive advantage. Therefore, in a rapidly changing environment, organisations should continuously search for new competences as a response to inquiries regarding the contributions to sustainable development. In this regard, this

study suggests that managers should consider the importance of building dynamic capabilities (Teece et al., 1997) to contribute to their capacity for sustainable innovation and long-term survival (Ayuso et al., 2006). Accordingly, organisations that can simultaneously pursue exploratory and exploitative sustainability practices are not only able to efficiently exploit existing products, services, and processes, but are also able to develop new (improved) processes and develop more radical products and services aimed at new customers and markets. However, the decisions about resource allocation should be based on the external environments that organisations are facing. For instance, in an increasingly competitive business environment in which scarce resources must be allocated for many different purposes, managers should place greater emphasis on sustainability exploitation practices, but only for a limited period.

## **5. Conclusions**

The conceptual framework and questions for future research presented in this paper are considered as a contribution to the literature, mainly to formulate concepts and theories for analysing and understanding the relationship between sustainability practices (i.e., sustainability exploitation practices and sustainability exploration practices) and organisational performance in different research contexts. Therefore, the main contributions of this study to the theory on CS are as follows. First, a theoretical framework that integrates the different perspectives, sets up a new typology to define sustainability exploration and sustainability exploitation practices, and identifies research opportunities for future studies was provided. Second, the proposed conceptual framework opens a discussion regarding the antecedents of the implementation of sustainability practices, their relationships with organisational performance and potential contingency factors that might affect these relationships.

This paper has provided a closer examination of the concept of CS and its link to organisational performance. Recognising the research opportunities in the literature, this paper sought to assess what constitutes sustainability practices by referring to the well-established concepts of exploitation and exploration. In this respect, the paper has provided a framework for discussing the theoretical underpinnings of how CS dimensions can be distinguished and the types of outcomes that can be achieved.

Drawing upon concepts of exploitation and exploration, this paper divides sustainability practices into two different but related sets: sustainability exploitation and sustainability exploration. One of the primary propositions of this framework is related to the suggestion that organisations may need to balance different types of sustainability practices (exploitation and exploration) along with the changes in their environmental contingencies. Moreover, the proposed conceptual framework provides a starting point for future research on how organisations can outperform their competitors while focussing on CS both in the short and the long term. This study suggests that the basis for understanding the mechanism lies in how organisations can build up appropriate organisational capabilities to simultaneously pursue efficiency and innovativeness, as these are two opposite aspects of sustainability. These

arguments indicate that managers in resource-constrained contexts may benefit from a focus on managing trade-offs between sustainability exploration and sustainability exploitation demands, but for long-term success, the simultaneous pursuit of exploration and exploitation is both desirable and necessary. There appears to be a lack of empirical evidence in the sustainability-related literature concerning the contingency theory; consequently, little attention has been given to the potential context-dependent argument. Thus, aspects of exploitation and exploration are considered to be essential to ongoing and future research efforts in CS.

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