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Managing switching effects in sustainable projects: case studies

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ABSTRACT

This work proposes a new framework for sustainability improvement based on the analysis of the changes created by organisations' sustainable projects (SPs). The purpose is to help businesses making strategic decisions to better achieve both business and societal objectives. Revising the concept of Switching Costs and Benefits to focus on organisations' change effects, we apply multiple case-study analysis to co-create the framework with four participating firms. Firms are purposely selected based on pre-established criteria of financial and sustainability performance. Through a reiterative process, research is untangled in three stages of interactions with participants for a total of six societal objectives and 34 projects. Primary data are collected from heads of departments or sustainability project managers through semi-structured interviews, surveys, and email exchanges between 2018 and 2021. This paper provides theoretical and practical contributions. In particular, this research extends the theoretical discussions about how to reconcile business and societal interests by adopting a new perspective to organisational decisions based on the assessment of change effects. Practically, the proposed analysis offers an alternative approach to the evaluation and ranking of SPs as well as the achievement of their societal objectives.

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Introduction

An ongoing question for both academic researchers and practitioners is how to reveal the synergies and the uncaptured value that sustainability creates towards financial performance (Yang et al. 2017) as well as the wider societal interests (Arjaliès and Bansal 2018; Banerjee 2003; Ergene, Banerjee, and Hoffman 2021; Pitelis 2009). According to Van der Byl and Slawinski (2015) and Gao and Bansal (2013), the core nature of a strategy is not a trade-off between social and financial interest, but rather the pursuit of an embedded value proposition composed of both. This 'dual' strategic objective can be defined in practical terms as Sustainable Value Creation (SVC), meaning '*a core business strategy focused on addressing fundamental societal issues by identifying new, scalable sources of competitive advantage that generate measurable profit and community benefit*' (Accenture and CECP 2011). As a term which highly reflects the firm's strategic ability to pursue communal and financial performance through sustainability, SVC has also been employed in a number of academic studies (e.g. Ciasullo and Troisi 2013; Stankevičienė and Čepulytė 2014; Surie and Ashley 2008).

However, as stated by Yang et al. (2017), the scarce number of empirical analyses and case studies in the academic literature is a hindrance to firms' understanding of how to implement business model innovation, how to identify and design framework alternatives, as well as how to assess and select the most suitable one. More importantly, while

sustainability practices are a stated phenomenon within businesses, they increasingly transcend organisational boundaries, also affecting the economy, the political and societal landscape, and not least the environment (Despeisse et al. 2012; Garetti and Taisch 2012; Marshall et al. 2015). Yet the question remains of how to gauge the impact of the sustainability innovations, studying their effects on the firm and the society. Tracking the impact of corporate measures on sustainability is still the subject of widespread debate because of the limited and underdeveloped ability to measure sustainability performance (Bhatnagar et al. 2022).

In recent years, the discussion has incrementally leaned towards the UN Sustainable Development Goals (SDGs). Among the major reasons for the difficulty of gauging them is the fact that they were developed following a top-down approach, ignoring the wider community of universities, companies, NGOs, governments, and the young civil society (Caiado et al. 2018). Large organisations reacted by increasingly implementing materiality studies (Hsu, Lee, and Chao 2013; Khan, Serafeim, and Yoon 2016) and certification standards (Jellema et al. 2022), considering Environmental, Social, and Governance (ESG) metrics as a proxy for sustainability performance (Widyawati 2020). Even so, the use of sustainability indicators is technically complex as they require methods able to fully embrace the changes caused by the multiple dimensions (socio-economic, environmental and technological) of a particular intervention (Agol, Latawiec,

and Strassburg 2014). Hence the issue of connecting firm-level metrics with societal level SDGs. Such approaches have important limitations when it comes to qualitative metrics, particularly capturing social aspects, which may be represented by stakeholder materiality as opposed to the firm's financial materiality (Delgado-Caballeros et al. 2023). Moreover, looking at the operational challenges, companies often do not have sufficient internal and external knowledge to implement sustainable resource changes in their operations and supply chains (Gong et al. 2018).

From a corporate perspective, there is a need to understand the inter-dependencies that exist among the different components of firms' operations, managing learning and other resource information from suppliers to customers in order to reveal the benefits of such linkages not just on operations' performance, but also on the broader sustainability landscape in a comprehensive long-term value creation perspective (Bessant, Kaplinsky, and Lamming 2003; Rungtusanatham et al. 2003; Zhu, Krikke, and Caniels 2018). Having practices that go beyond the pure instrumental, causal relationship between social or environmental commitment and financial performances towards simultaneous approaches (integrative logic) highly benefits the achievement of multiple objectives (Gao and Bansal 2013; Hahn and Figge 2011; Tuni, Rentizelas, and Chinese 2020; Wijethilake, Upadhaya, and Lama 2023).

This work extends the academic conversation about the aforementioned challenges and, more specifically, aims to shed light on how to manage the (positive and negative) effects of sustainability initiatives on organisational strategy as well as civil society. Specifically, our work investigates how to provide support to business practices when dealing with the financial, relational and procedural changes triggered by implemented sustainability projects (SP). In doing so, the achievement of societal objectives and the effects of sustainability implementation are explored here through the concept of Switching Costs, one of the most significant factors when looking at value generation as widely stated in strategy, economics, marketing and management literatures (Hess and Ricart 2003). We here propose a revisited acceptance of the term as *the effects of the changes caused by the implementation of firms' SPs*.

Despite acknowledging the importance of the external environment in influencing projects' impact on sustainability, we firstly adopt an internal perspective to SC to allow a major control of the firm on its effects. Therefore, our definition joins the perspective of a firm's SC (e.g. Nielson 1996; Weiss and Anderson 1992; Whitten and Wakefield 2006) rather than consumers' SC (Burnham, Frels, and Mahajan 2003; Chebat, Davidow, and Borges 2011). This is a new perspective to determine material issues affecting business performance, complementary to the existing literature (Eccles, Ioannou, and Serafeim 2014; Eccles and Serafeim 2013; Hsu, Lee, and Chao 2013; Khan, Serafeim, and Yoon 2016). Following these premises, this work takes a further step from the SC assessment methodology proposed by Guandalini, Sun, and Zhou (2019) towards the resolution of the trade-off between sustainability and financial performance, by developing a framework that serves to achieve both.

In order to solve the possible tensions that may arise in the trade-off between sustainability and the organisation's strategic objectives, we investigate the following research question:

How can firms achieve sustainability and financial performance by managing the switching costs and benefits of their implemented SPs?

Mapping switching effects (SEs)

Theoretical foundation

The theoretical foundation of this work is based on the relationship between two key concepts, SVC and SEs, which, as explained in this section, are here operationalised through the concept of SC. SVC is a term that has been adopted by the academic literature (Chandler and Werther 2014; Ciasullo and Troisi 2013; Stankevičienė and Čepulytė 2014; Surie and Ashley 2008) as a way to reconcile the contrasting interests of sustainability and financial performance which have characterised the trade-off theory for nearly 60 years. The origin of the trade-off debate saw Friedman's free-market capitalist views (1962), strongly asserting that corporations should not be involved in social responsibility because their only obligation towards society should be maximising profits, against Samuelson's view (1971), highlighting the benefits that derive from sustainability investment choices.

In the advancement of the discussion over the decades, due to the influence of practice, legislation and changing values, academics have also adopted a more pragmatic approach to research on organisational strategy, recognising the need for a coexistence between sustainability and financial performance (Carroll and Shabana 2010; Plaza-Úbeda et al. 2009). As Kleine and von Hauff (2009) mentioned, there has been an evolution towards a broad consensus that maximisation of profits itself can no longer be the exclusive goal of companies in the overall economy. To survive in a constantly changing environment, it is not enough for businesses to operate in the most profitable and efficient way as multiple factors (economic, technological, environmental, etc.) need to be considered in order to enhance firm performance (Castiglione, Pastore, and Alfieri 2022; Li et al. 2022; Tuni, Rentizelas, and Chinese 2020). They also need to manage the increasing pressure from both environmental regulations and social demands through the adoption of flexible strategies (Caiado et al. 2018). This is because sustainability is theoretically founded on a system perspective, which requires a tighter integration of corporate financial performance as well as social and environmental corporate commitment, according to temporal, spatial and ethical orientation (Gao and Bansal 2013; Hahn et al. 2015).

The challenge raised in the most recent literature is understanding how and to what degree to incorporate sustainability into strategy development (such as planning, implementing, assessing), especially when considering its multidimensional nature (i.e. multiple interests, stakeholders, degrees participation, technological change, ecosystems dynamics etc.) (Abdelkafi and Täuscher 2016; Zollo,

Cennamo, and Neumann 2013). To tackle this issue, this research considers that the introduction of sustainable activity in an organisation causes change in the way the organisation operates, in what is used and in what is produced. In particular, it is argued that tensions may be caused by concerning levels (individual, firm and systemic), changes in the current pattern of activity and context (temporal and spatial element), as well as degrees of knowledge and organisational abilities (Van der Byl and Slawinski 2015; Hahn et al. 2015; Vilanova, Lozano, and Arenas 2009). As an example, Porter and Kramer (2002) approached these tensions by promoting the *convergence of interests*. The authors claimed that corporations supporting the right causes in the right way are able to set in motion a virtuous cycle with no inherent contradiction between improving competitive context and making a sincere commitment to a better society (12). Porter and Kramer (2011) named this convergence of interests as *shared value creation*, indicating the process of generation of economic value in a way that also produces value for society by explicitly addressing its challenges. This concept is different from the *sustainable competitive advantage* mentioned by Porter (1985) or *sustained value creation* as per Achtenhagen, Melin, and Naldi (2013), which instead focus on the firm's long-term competitive strategy without any reference to ethical commitment. Nonetheless, since value can be derived from long-term competitive advantages, sustainable competitive advantage can be regarded as a central part of SVC which particularly respects the economic component of the corporate social responsibility *triple bottom-line* known as the simultaneous existence of economic, social, and environmental benefits (Hart and Milstein 2003; Markman et al. 2016). Similarly, in the study on small-medium enterprises, Ciasullo and Troisi (2013) claimed that firms' value creation originates from a system of embedded ownership values and beliefs, addressed to entrepreneurial development, environmental safeguarding and social value creation for the territory.

The focus on the importance of creating a strategy to implement sustainability has led to the definition of *strategic corporate social responsibility* (SCSR) as proposed in Chandler and Werther's work (2014). In particular, SCSR refers to the incorporation of a holistic sustainability perspective within a firm's strategic planning and core operations, allowing the firm to be managed in the interest of multiple stakeholders in order to achieve maximum economic and social value over the medium to long term. A concept close to SCSR is Emerson's (2003) *blended value proposition*, which also emphasises the integration and affirmation of the greatest maximisation of social, environmental, and economic value.

Some researchers argue that it is doubtful that companies can leap into SVC without first managing and optimising their internal operations and sustainability practices (Eccles, Perkins, and Serafeim 2012; Stankevičienė and Čepulytė 2014). Nonetheless, according to Figge and Hahn (2004), in the widest sense, value is created whenever benefits exceed costs and it is not just in economic terms. Moreover, in order to increase value, the focus must be put on companies' internal efficiency.

For this reason, this work values the strategic relevance that SC plays in boosting financial performance (Hess and Ricart 2003; Porter 1985). SC is functional in this research as a construct indicating the process of change occurring with the implementation of sustainable activity, allowing for the recognition of which SPs stimulate (or penalise) SVC. Appendix 1 provides a summary of the core literature guiding this research in the process of mapping SEs. Due to the hindrances that SC can create in an organisation, it is important to detect and assess them to strategically reduce their impact on the decision-making process involving the adoption of new initiatives or technologies (Porter 1980). An important note to remark is that the above considerations provide a different and complementary perspective from a large part of the academic literature which identifies SC in relation to consumer reactions such as loyalty strategies or to the broader context of competitive advantages (external environment) (Burnham, Frels, and Mahajan 2003; Chebat, Davidow, and Borges 2011; Yang and Peterson 2004). In fact, while the importance of both strategic perspectives have been discussed in Porter (1980), the later literature has largely focussed on the external environment as highlighted in Porter (1985).

Preliminary conceptual structure

To explain the causal mechanisms among multiple objectives through SC analysis, we have developed a literature-based conceptual structure. Specifically, SVC is composed of two needful elements, CFP and sustainability (here operationalised through SPs).

The second important element is the relationship between CFP and SPs (Delgado-Caballeros et al. 2023). In this regard, it is commonly accepted through the theory of slack resources that the more a firm's CFP is, the higher its investments in sustainability are (Orlitzky, Schmidt, and Rynes 2003; Surroca, Tribo, and Waddock 2010). Nevertheless, the effect of sustainability practices on CFP is uncertain, as academic studies on the topic have shown mixed results when looking for empirical evidence (Haffar and Searcy 2017). This is due to multiple factors, such as differences in firms and context characteristics as well as in means and produced effects, which play in both the internal and external environment (Grewatsch and Kleindienst 2017). However, without denying the importance of the external environment, companies aiming to leap into SVC need to first manage and optimise their internal operations and sustainability practices (Eccles, Perkins, and Serafeim 2012; Figge and Hahn 2004; Stankevičienė and Čepulytė 2014).

For this reason, the third element considered in our conceptual structure is the internal effects (changes) generated by SPs on CFP, which can be identified through SC analysis as proposed in Guandalini, Sun, and Zhou (2019). Based on the well-established principle that value is created whenever benefits exceed costs and not just in economic terms (Coase 1937; Michael Porter 1980; Williamson 1981), we postulate that the higher the SC faced by the firm, the lower SVC. This

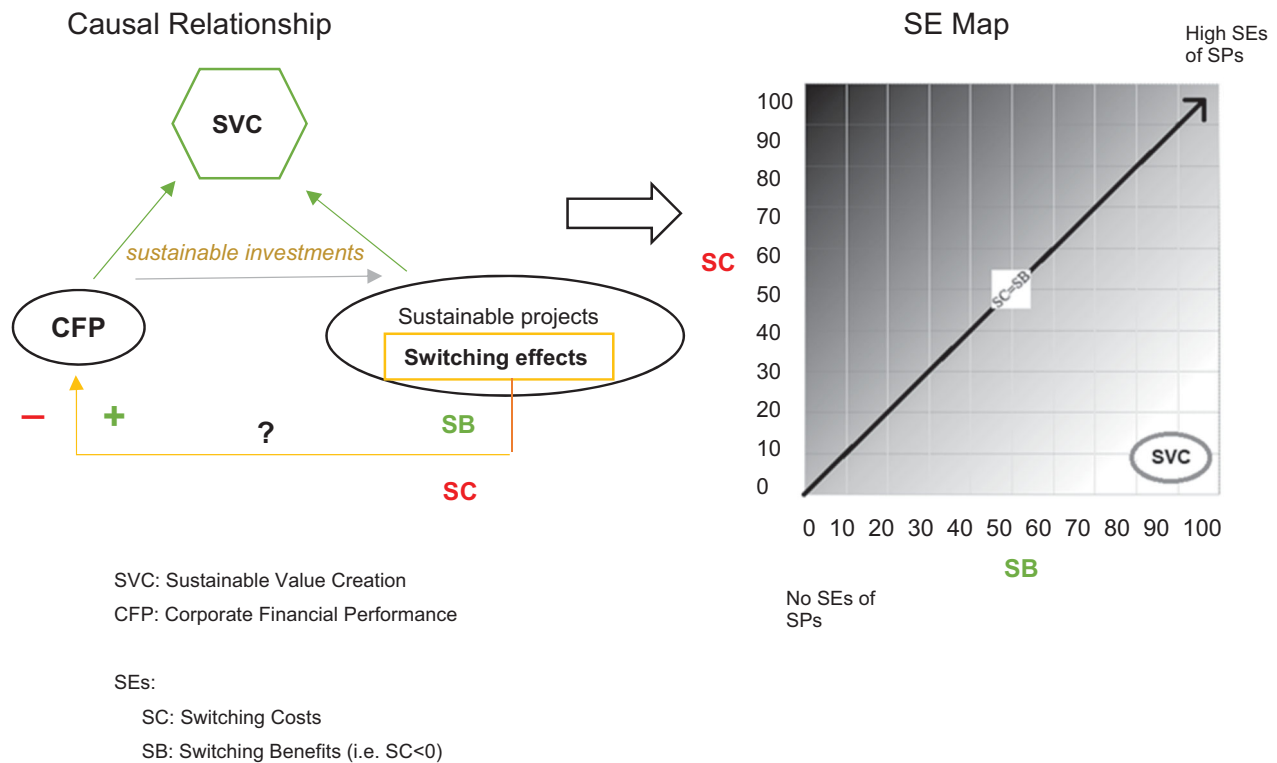


Figure 1. SVC Strategy improvement and SE map. Causal relationship SE map.

is because, as with any other type of cost, SC has negative effects on CFP, hindering the achievement of SVC.

Finally, a fourth element to consider is Switching Benefits (SB), defined as the opposite of switching costs or, using Hellmer's words (2010), 'negative switching costs'. This reflects the fact that any change introduced to the organisation (including those created by sustainability) generates positive or negative effects, both of which need to be considered in assessing the created value (Doganoglu 2010; Salla, Satu, and Jussi 2013).

The SEs Map on the right of Figure 1 summarises our discussions on the effects of SC and SB on SVC. Specifically, SVC is achieved with high SB and/or low SC, *ceteris paribus*. The dark/black part of the map shows that the firm is not achieving SVC when SC are high and/or SB are low. The oblique arrow indicates that the firm experiences equal levels of SC and SB. Figure 1 also shows that not all changes have the same effects. If changes introduced to the organisation by the implementation of SPs are low (close to the axis origins), it means that SC and SB are not significant enough to be considered strategically. The following step in our research process is to find out if this conceptual structure reflects reality and under which conditions.

Methodology

Case-study research

This study uses case study research for its ability to build knowledge and understand dynamics in complex fields (Pan and Tan 2011; Swanborn 2010; Yin 2018). Considering the still embryonic research on SC in relation to the

sustainability-financial performance, a case study methodology allows a deeper understanding of the decision-making processes by analysing the effects of switching costs of SPs in different organisations. Nonetheless, case study research is a well-accepted methodology for the development of practice-oriented sustainability business models (Roome and Louche 2016; Stubbs and Cocklin 2008; among the others).

We adopted multiple case studies as it allows for comparison and contrast analysis (Mayring 2014; Yin 2018). Four case studies were selected through purposive sampling as per Eisenhardt (1989, 545). The case studies were 'embedded', i.e. contain multiple units of analysis (in this case, projects) to allow for a satisfactory degree of depth for each case study, providing data which can be discussed through both qualitative and quantitative analysis.

With the direct involvement of practitioners, more specifically firms (Farooq and O'Brien 2015; Pinnington and Ayoub 2019; Vlachos 2015), we analysed past and recurrent projects that, according to the firms, were the most representative for the purpose of our research. For this reason, our research is classified as case research but not action research, the latter of which instead aims to influence the course of action or have researchers playing a role as participants in the project (Avison et al. 1999; Farooq and O'Brien 2015). Instead, like Maon, Lindgreen, and Swaen (2009), we used a mixed approach leading to an integrative framework grounded in both theory and practice. Similar to Sauer, Orzes, and Culot (2022), the empirical evidence was triangulated through different sources and multiple respondents to ensure construct validity. We used cross-case pattern matching of the codes to achieve internal validity, while we ensured reliability through the content analysis of the overarching material

(interviews, shared documentation by participants, and open access sources). The approach is iterative and abductive which means that it moves back and forward between data and existing knowledge or theories, making comparisons and interpretations while searching for patterns and best possible explanations (Danemark et al. 2019; Goldkuhl, Cronholm, and Lind 2020; Lavikka, Smeds, and Jaatinen 2009). As mentioned by Secchi and Camuffo (2021), this approach is widely considered to be the best way to build a theory.

Selection of case-studies

According to Pan and Tan (2011), case studies can be represented by internationally-renowned organisations, extreme cases or difficult to access phenomena (165). As different sampling strategies lead to different implications, the most appropriate depends on the research purpose (Auerbach and Silverstein 2003). Therefore, according to the research question, SVC is the most appropriate criterion here for the selection of cases as it embeds both sustainability and financial performance. Thus, companies achieving SVC are characterised here by high Environmental, Social and Governance (ESG) scores and high CFP figures. To strengthen the relationship between the two variables, CFP data are lagged following previous literature examples (McGuire, Sundgren, and Schneeweis 1988; Moneva and Ortas 2010; Waddock and Graves 1997).

Contrary to random sampling, which typically characterises inferential studies (Auerbach and Silverstein 2003; Lavrakas 2008), the chosen case studies are part of a purposive sampling strategy based on a judgement about a specific population in terms of ESG scores and CFP, for the purpose of generation theory by comparative analysis.

Following selection criteria of SVC (combined financial and sustainability performance) as described in the Notes of Table 1, a list of 130 'best-in-class' companies was produced according to the qualifying criteria. After the initial survey (e.g. Zangiacomi et al. 2020), four companies belonging to different SC scenarios agreed to participate and bring the investigation forward: ING, Anonymous, Rockwool, and Walmart Mexico and Central America (Table 1).

Companies are randomly indicated as Case Study 1, 2, 3, and 4, being the focus of this research on the purposive criteria and not on the identification of specific companies in the positive or negative scenarios outlined in the analysis. More information about the companies is available in Appendix 2.

Research protocol

The data collection and analysis followed a reiterative research process with there being three stages in the firms' involvement: a preliminary case study in 2018, the case selection in 2019, and the full data collection completed in 2021. The preliminary study consisting of a single case study (Case Study 1) that was conducted as a prelude and explorative device. Given the importance of keeping case study design flexible at this stage, the preliminary study not only aimed to provide the first case results of the research, but also to reveal inadequacies in the initial design (Yin 2018).

The semi-structured interview method used in the preliminary study was originally chosen with the aim of exploring SC as an assessment method, by collecting the first set of in-depth information to help build a streamlined SC list, to uncover possible methodology pitfalls and help to improve the following data collection process (Saunders, Lewis, and Thornhill 2015). Following Bogner, Littig, and Menz (2009), the interviews involved six managers or heads of departments dealing with six societal objectives, for a total of 34 projects (of which 2 are cross-departmental programmes). Conversations were then audio-recorded and transcribed verbatim as per McCracken (1986).

Literature-driven SC codes, as per Guandalini, Sun, and Zhou (2019), were applied to the collected text. A literature review of 93 SJR Q1 and Q2 journals and books from 1937 to 2018 guided the identification and understanding of the SC terminologies and dimensions. By applying codes to the text of the collected interviews in the preliminary study, the SCs have been grouped to avoid the overlapping of similar concepts and to allow for operational data collection (Appendix 1).

However, it was noted by the firm that the text coding applied by the researcher may produce unexpected valuations from the firm's point of view. Aiming to build a

Table 1. Sustainability and CFP criteria of selected SVC achievers.

Company name	ESG Score (Average) 2015–2017	ESG Score (Average) 2017	ESG Score % Change (Average) 2015–2017 (%)	ROA (Average) 2017 (%)	ROE (Average) 2017 (%)	Total Return (Average) 2015–2017 (%)
ING	81.20	81.85	0.8	0.6	9.9	46.0
Anonymous	53.96	63.36	17.4	7.4	42.2	30.2
Rockwool	55.85	56.87	1.8	8.3	11.5	34.2
Walmart Mex & Central Am	77.32	79.86	3.3	10.5	17.9	22.2

Source. Thompson reuters, Eikon.

Notes. The companies were selected following a number of studies by considering both accounting and market indicators to capture all benefits to do with sustainable activity while gauging CFP (Dam and Scholtens 2015; Stankevičienė and Cepulytė 2014). ROA as account-based data and Total Returns as market measure were retrieved from the Thomson Reuters Eikon database. Sustainability performance is represented by the Thomson Reuters Eikon's ESG Score which allowed for the interpretation of how companies perform relative to their peers, showing where the company's ESG weaknesses and strengths lie. The selected companies were characterised by an ESG score of over 50 (grade A and B) to highlight the relatively low probability of negative financial impact due to poor sustainability performance. It is important to acknowledge that implying a causal relationship between the environmental, social, and governance criteria and the financial outcomes presents important biases such as focussing on ESG monetisation rather than value. Still, ESG is considered to be an important metric when looking to make impacts gaugeable, valuable, and achievable (Arjaliès and Bansal 2018; Howard-Grenville 2021).

framework which has firms as ultimate users, self-assessed SC scoring was suggested for the second stage, before complementing the information through semi-structured interviews.

The codes revealed in Stage 1 were included in a questionnaire circulated in Stage 2 for the case-study selection (see previous section), and explained in the first part of the form, as per the Questionnaire Template presented in [Appendix 3](#). The questionnaire regarded key projects aiming to six societal objectives. The company participating in the preliminary study defined them as their key objectives and they were maintained for consistency in the following case studies. The respondents were then asked to provide a score for their perceptions of the impact of SEs using a 5-point Likert scale. This is an established method used in academic research and here for the collection of perceived switching costs (Nielson 1996; Jones, Mothersbaugh, and Beatty 2002; Burnham, Frels, and Mahajan 2003, among the others). The questionnaire assessed the perceptions of SC and also their opposite, i.e. switching benefits (SB). The scores reflecting the positive or negative perception of a change (SB and SC) induced by the sustainable activity were directly quantifiable and the charts were built using the Excel software. The questionnaire was circulated among the Heads of Sustainability Departments or Sustainability Managers of the 'SVC achievers' listed through Eikon. However, the composition of SC and SB resulting from the respondents to the questionnaire (25 in total) was so fragmented that it was not possible to draw any conclusion in terms of trends or paths to claim validity or generalisation of results. After receiving the first set of results, which were highly shattered, we purposely chose four companies belonging to four contrasting scenarios (high SC, high SB; low SC, low SB; high SC, low SB; low SC, high SB), which also agreed to continue the research process through Stage 3.

This led to our Stage 3 of the data collection process which consisted of transcribing interviews (about one hour each) and integrating them with the information received from the emails and shared documentation. In this stage, we also asked firms to explain the nature of the projects considered in the survey in relation to the targeted societal objectives and stakeholders involved ([Appendix 4](#)). This was to explore the possibility of applying the analysis of switching costs and benefits to assess societal impact too. Finally, to validate our research, our framework was shared and discussed with the participating firms.

Findings

Relevance of SEs in strategic decision making

A consistent result among all four case studies was that the firms confirmed their awareness of the existence of SEs in sustainable projects and the fact that they may have an impact on the business, whether that means things are able to go on as usual or their ultimate business purpose is affected. However, SEs have never been considered during decision-making. Case Studies 1 and 4 specified that this is because KPIs are often decided at a project level, if not higher in the

firm's decision-making hierarchy (e.g. corporate, regional, or departmental level). In addition, no firm had established ways to classify SEs which they considered to be the first step in being able to measure and track such effects. For this reason, firms welcomed the project and stated their interest in SEs frameworks for SVC strategy improvement to complement the existing ones. Case Study 3 referred to SEs as a possibility to better manage risks and said that having visibility of such effects would influence their decisions on sustainable projects development and the overall SVC strategy.

Variety of SE structures in SVC achievers

The following SC/SB Effects Web ([Figure 2](#)) summarises the total score result by SC and SB for each firm participating to Stage 3.

From the analysed data, it appears evident that Case Study 1 is particularly affected by Setup and Execution SC, which is an outlier respect to the other SC and SB in the same case study. Case Study 2 shows a minor variation among the different variables and an overall major relevance referring to both SC and SB. It can be noted that the effects of switching on Case Study 2 are in general much higher than Case Studies 3 and 4. On the other hand, Case Study 4 is less affected by the switches occurring due to the SPs. [Figure 3](#) shows how the difference among the cases is to do with the relevance of SC or SB, measured as the net effect for each switching category.

This means that it is not possible to develop parameters based on the SC structure of SVC achievers for benchmarking other organisations in their path towards SVC. Because of this, no unique SVC strategy can be designed and applied to any firm, while it is rather possible to develop case-specific roadmaps.

Contribution of SEs to SVC achievement

[Figure 4](#) compares the positions of the case studies with respects to their average SC and SB scores in the strategy improvement conceptual structure map.

If the causal mechanism ('low SC and high SB favour SVC') presented in the conceptual structure held for every SVC achiever, all case studies would be in the light/white area. This is confirmed for Case Studies 2 and 3. However, the figure clearly shows that Case Studies 1 and 4 are positioned in the dark/black area. We call this the 'SE-SVC paradox'. However, the fact that the original causal mechanism does not always hold does not necessarily mean that firms should not aim to lower their SC or increase their SB to further improve their SVC. In fact, this is supported by a vast literature stating that SC costs affect a business strategy and its CFP (Fornell 1992; Hess and Ricart 2003; Klemperer 1987; Porter 1980; among the others).

Impact of SPs on SVC

In reference to the second finding, [Figure 4](#) suggests another interesting observation with respect of the effects caused by

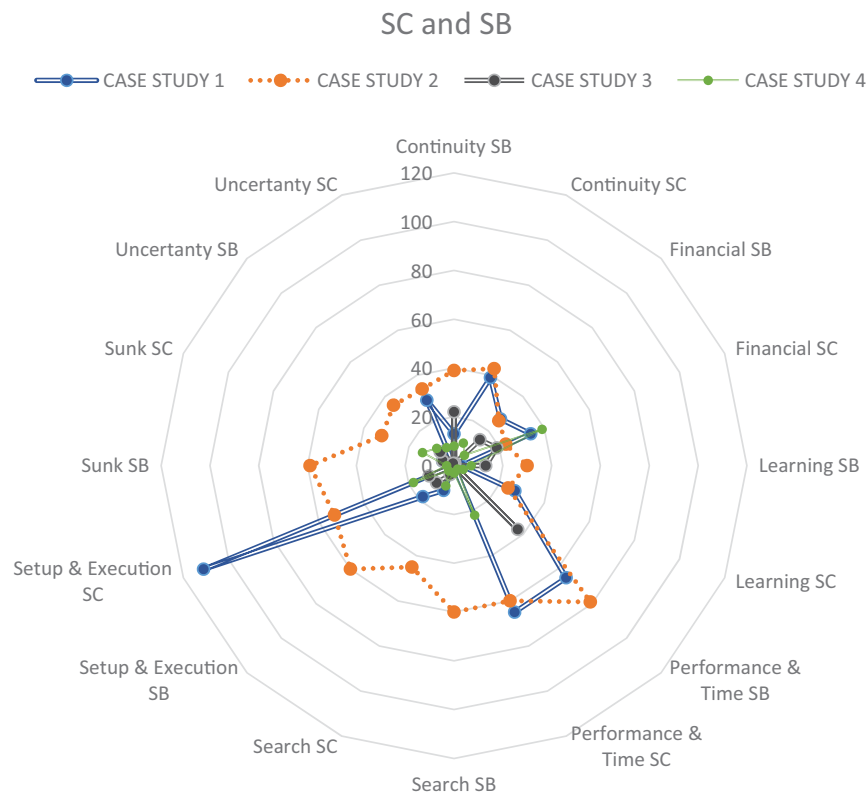


Figure 2. SC/SB effects web, case studies comparison.

the SPs. While Case Studies 3 and 4 are close to the origin of the axis, showing relatively low values for both SC and SB, Case Studies 1 and 2 are far apart. This means that Case Study 1 and 2 are more affected by the changes introduced by the SPs with the difference that Case Study 2 perceives there to be more benefits than Case Study 1, which is much more affected by SC. This indicates that the implementation of SPs is perceived as more impactful in certain firms compared to others.

Discussion

Solving the SE-SVC paradox

While we explicitly focussed on the firms' perceptions, we have also previously acknowledged that sustainability and CFP are also influenced by the external environment. Following our third finding, as part of the theory-driven reiterative process (Belfrage and Hauf 2017; Strauss and Corbin 1998), we reintroduced in this research the concept of external factors, indicating elements such as Porter's competitive advantages (1985), which influence a company's strategy from an environment that is external to the firm. In fact, the most plausible theoretical explanation for the contradictory scenarios can be found in competitive forces such as new market entrants, product or service substitutes, customer and supplier power, as well as competitive rivalry, whose effect may overcome SC and explain the achievement of SVC. Among these are the positive effects of the SC faced by customers which is an important component of a firm's defence strategy against competitive forces (e.g. de Ruyter,

Wetzels, and Bloemer 1998; Fornell 1992; Hess and Ricart 2003; Jones, Mothersbaugh, and Beatty 2002; Nilssen 1992; Yang and Peterson 2004). According to Porter (1980), a market defence strategy is the range of possible moves that a firm can undertake in order to boost its resilience against competitive forces.

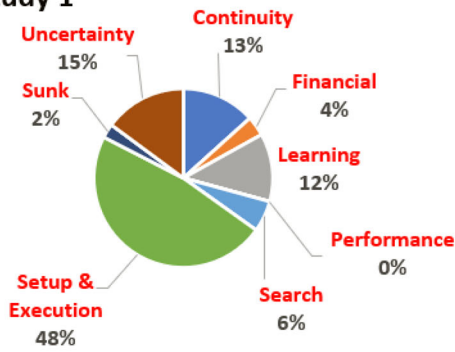
The external environment is not totally out of control of a firm's strategy (Severo et al. 2020). Any implemented sustainable project not only creates SC for the firm - which has a negative effect on the firm's CFP - but it also creates SC external to the firm, which is faced by customers and whose existence has a positive effect on the firm's CFP (Porter 1980). In other words, the customers' SC is controllable by the firm through the implementation of projects. Reintroducing the effects of the external environment into the conceptual structure at this point allowed us to further advance our findings, thus understanding the actual extent of the firm's SC in terms of impacting sustainability and CFP in contrast with the influence of (and dependence from) the external environment.

SE-based SVC framework

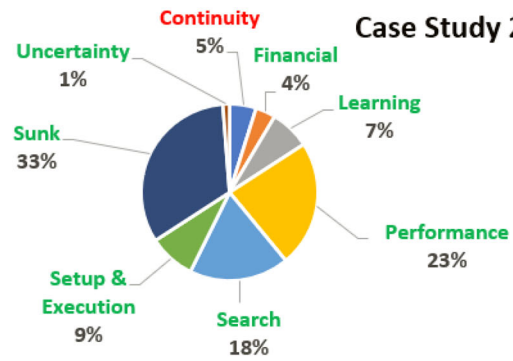
Founded on the outcomes of the SC analysis conducted in this research, we developed a SE-based framework as per Figure 5.

According to the framework, the SC assessment of a firm's current sustainability strategy allows detecting if the undertaken sustainable activity contributes or penalises CFP, by highlighting the existence of Net Switching Costs (NSC) or

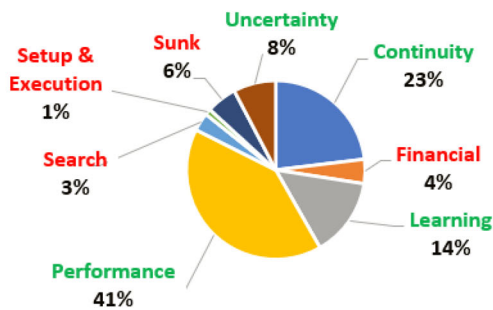
Case Study 1



Case Study 2



Case Study 3



Prevalence of SC Prevalence of SB

Case Study 4

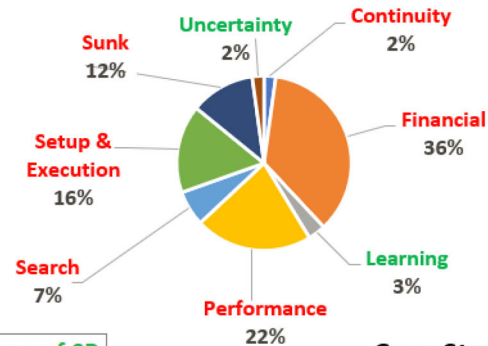


Figure 3. Total relevance of Net SC/SB effects by case study (adapted from Guandalini, Sun, and Zhou 2019).

Net Switching Benefits (NSB). Following this distinction, a second outcome of the assessment is the valuation of the impact that NSC or NSB have on the organisation. This information determines the steps to improve the firm's sustainability strategy.

If the company experiences NSB with a highly positive impact on CFP, this means that the firm is not depending on external factors for the achievement of SVC and the current strategy is successful. Thus, the firm should pay attention in maintaining this equilibrium through both assessing and monitoring activities.

If the company experiences NSB, but low impact on CFP, its current strategy is overall fragile, as shifts in market forces can prejudice the positive effect of the current strategy on CFP. Therefore, major effort needs to be put in guaranteeing a market defence strategy (e.g. building customers' SC), while continuing monitoring the internal SC.

In the case of the company having NSC but a low impact on CFP, the strategy is particularly sensitive to variations in both the firm's SC and external factors. The company can choose to focus its strategy on reducing the firm's SC, increasing its defence against external factors, or engage in a combination of both. A successful strategy is achieved by the combined effect of reducing the internal SC and increasing the control over the external factors to overcome NSC.

In a company that is characterised by NSC highly impacts CFP, the achievement of SVC is totally dependent on the external factors. The company needs to prioritise combined interventions aimed at decreasing its SC and increasing its market defence to overcome NSC.

Strategy improvement roadmap

A roadmap can be designed involving four different improvement strategies according to the firms' SC structures and the different impacts of the SEs as revealed by the SVC achievers analysed in this work (Figure 6).

The first distinction is in terms of the SEs created by the implementation of the SPs, which varies from firm to firm, as per the second finding. It is important to understand whether if the current strategy creates a prevalence of SC or SB, calculated as Net Switching Costs (NSC) in Scenario A if $[SC > SB]$ or Net Switching Benefits (NSB) as in Scenario B if $[SB > SC]$.

The second distinction is in terms of impact as implementing SPs may cause different 'degrees' of switching to the organisation (fourth finding). The worst case scenario (Scenario A1) occurs when the SPs cause big negative effects (i.e. high SC and low SB). Vice-versa, the best scenario (Scenario B2) is when the SPs produce positive effects (i.e. high SB and low SC). The intermediate cases (Scenario A2 and B1) corresponds to the firms close to the origins in the SVC Map (Figure 4), meaning that the SPs introduce only little SEs to the organisation.

Priorities can be identified through the SC/SB Effects Web in Figure 2, starting with lowering the high impact SC as in Scenarios A1, A2, or B2 or increasing the high impact SB in the case where SC has little impact (Scenario B1). At this point, the strategy improvement requires different initiatives, be it an 'intervention' as in Scenarios A1 and A2, which are currently contradictory, or 'assessment/monitoring' as in Scenario B1 and B2, where there is no paradox in the current strategy. Initiatives need to consider the different degrees of

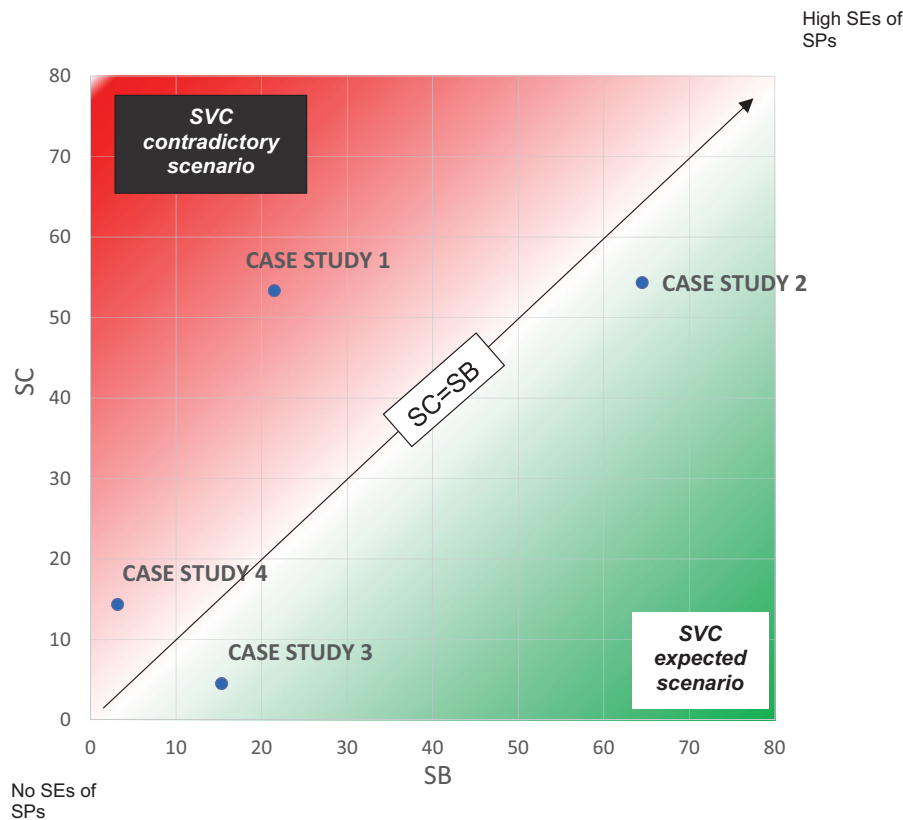


Figure 4. SEs map: position of the case studies.

dependence from the external factors as suggested by the SE-based framework in Figure 5.

Implications

From a theoretical point of view, this research highlights the importance of revising a firm's strategy while considering the effects caused by the implementation of SPs. This work also offers a new definition of switching costs (and benefits), contributing to rebalancing the SC literature in favour of an internal perspective of the concept (about the firm) rather than the more commonly accepted external perspective (about consumers). In doing so, this research challenges the prevailing external-centric view and offers a novel theoretical lens, allowing for a deeper exploration of how switching effects influence a firm's strategic decision-making. This shift in view also opens avenues for investigating the interaction of SC with other strategic elements within the firm, such as innovation, organisational culture, and strategic alliances. By focussing on the broader dimension of SC, researchers can gain a more comprehensive understanding of the complexities and dynamics of competitive firms. This provides a foundation for further research in operations, production planning, and overarching strategic management.

From a practical standpoint, this study offers valuable strategic support to firms engaging in sustainable projects (SPs), by showing how the internal effects of SPs can be analysed separately from the competitive factors. This allows firms to better understand the dynamics and implications of SP implementation, facilitating informed strategic improvement.

Moreover, the proposed SC/SB analysis offers an alternative approach to the evaluation and ranking of SPs. By considering the effects associated with the implementation of sustainability practices, firms can make more comprehensive assessments to guide their strategy development effectively.

The conceptual framework remarks the active role of the firm in managing switching effects to benefit both CFP and SVC. The suggested roadmap shows diverse paths based on the different SEs experienced by a firm, thus representing a guideline to managers to improve their sustainability strategy more in line with societal objectives and their overall business objectives. This is achieved by identifying their internal SC structure (and weakness) and their exposure and dependence to external market forces, allowing to adjust and improve their strategic choices in their journey to SVC.

Final considerations

This research acknowledges the potential criticisms associated with critical realistic philosophical paradigms. Similarly, the co-creation approach adopted with the firms is subject to various objections concerning the research design. For this reason, while rigour was used when following the different steps of the protocol adopted in this study, we do not claim empirical findings.

It is also important to note that the explanation of the causal mechanism in our framework originates from theory-driven concepts. By focussing on firms' SEs, we gained a better understanding of the financial, relational, and procedural changes resulting from the implementation of SPs.

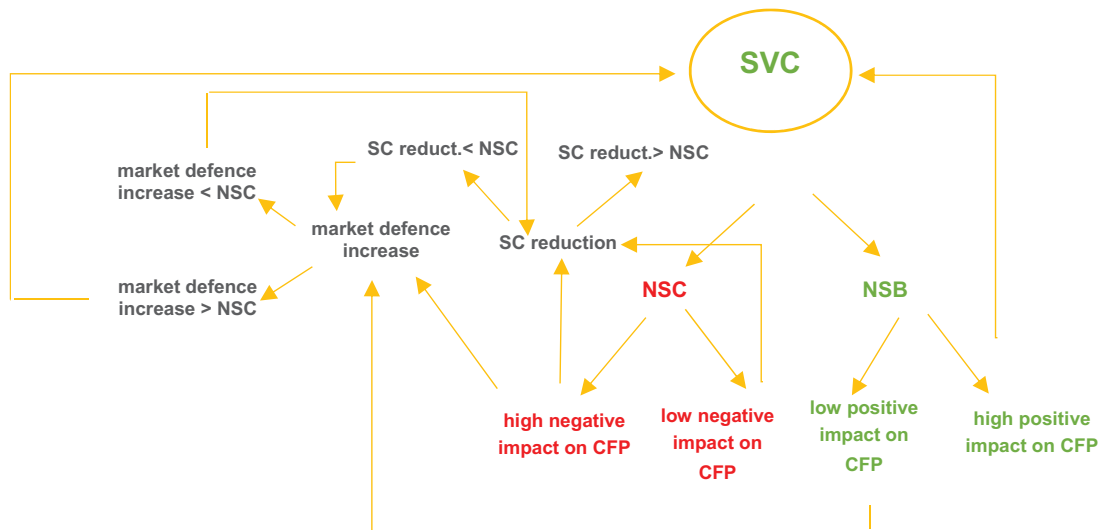


Figure 5. SE-based framework for strategy improvement through SPs.

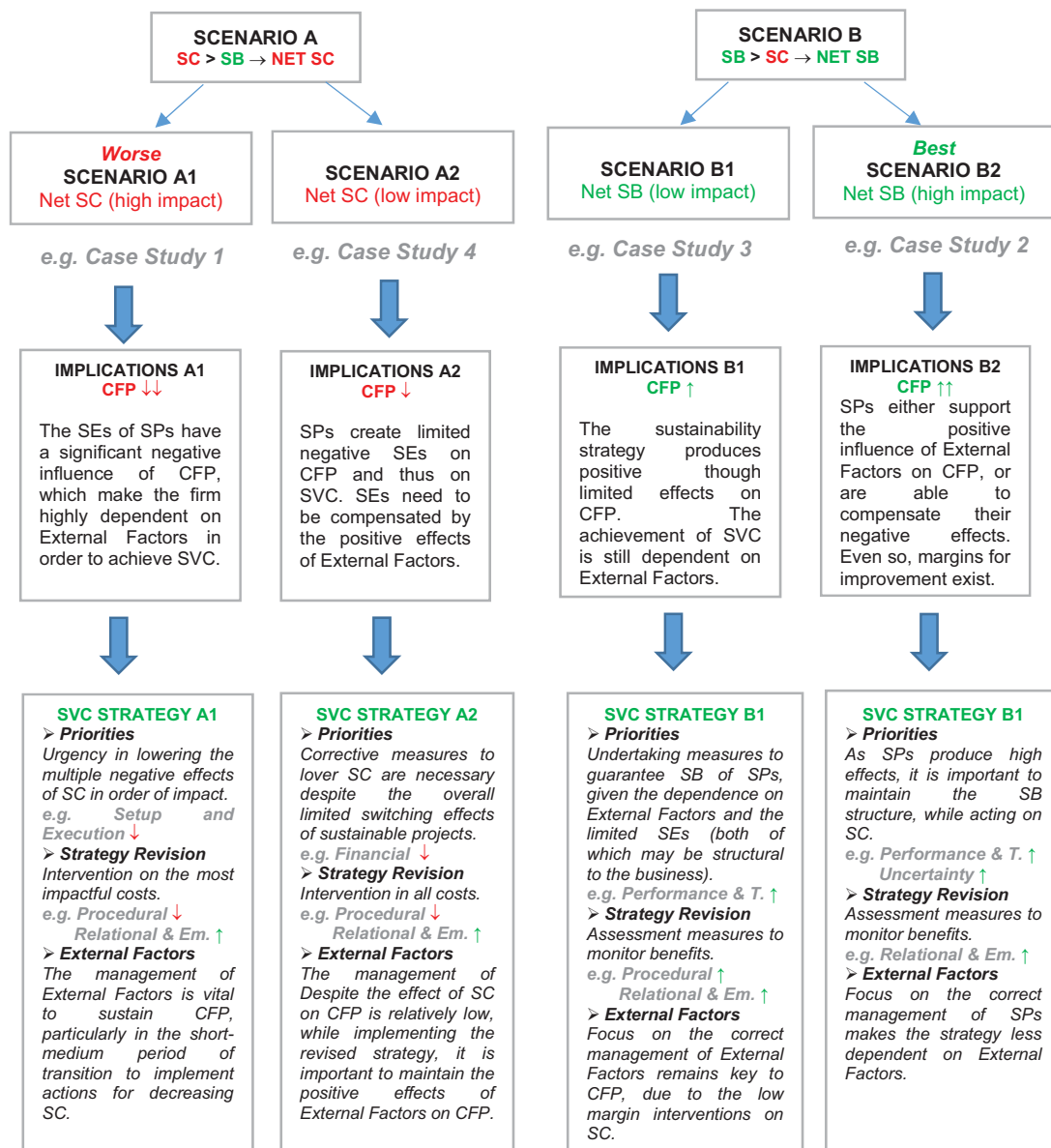


Figure 6. Strategy improvement roadmap through SE analysis.

This work builds upon Guandalini et al.'s assessment methodology (2019) which provides a new perspective for identifying strengths and weaknesses in an existing strategy through SC and SB analysis. Yet, as posited by Hansen and Schaltegger (2018), there are several sustainability management tools, each of which has its limitations. Among them, the nature of qualitative data such as perceptions implies biases due to the human component.

We encourage future research on the theoretical developments suggested in this study. Understanding and gauging the combined effects of the undertaken SPs in both the internal and external environment can be achieved by operationalising the latter. Based on the experience gained through this work, further surveys could be developed to collect a larger amount of data, allowing inferential studies through factor analysis, for instance exploring strategy implementation at different organisational levels through the major verticalisation of the data collection. Further academic research developments could also focus on specific stages of the application of the SC analysis, be it strategy definition, modification, implementation, or assessment.

Finally, we welcome the firms' suggestion to extend the collection and evaluation of SC and SB perceptions to the external stakeholders of the discussed projects. This would facilitate a major inclusion of this part of civil society as per Ergene, Banerjee, and Hoffman (2021) and a shift in research focus from value creation to value capture as suggested by Pitelis (2009).

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Appendix 1. SC/SB applied codes (adapted from Guandalini, Sun, and Zhou 2019)

SC	Definition	Main Literature	Examples of Referenced Texts
<i>Economic & Financial Uncertainty costs</i>	<ul style="list-style-type: none"> SC which are financially quantifiable Reduced performance and limitations due to potential risks of uncertainty 	<ul style="list-style-type: none"> Burnham, Frels, and Mahajan (2003) Klemperer (1995); Jones, Mothersbaugh, and Beatty (2002); Whitten and Wakefield (2006) 	<p>'Being a 'non-recurrent' project, we faced unexpected costs due to the complexity of the project itself. Expenses are to be divided among different actors, but I still do not have the figures.' Case Study 1</p>
<i>Contractual costs</i>	<ul style="list-style-type: none"> Costs of breaking existing contracts or relationships 	<ul style="list-style-type: none"> Klemperer (1987); Chebat, Davidow, and Borges (2011) 	<p>'Responsible sourcing has required changes of terms and conditions, but we considered it an investment'. Case Study 2</p>
<i>Search costs</i>	<ul style="list-style-type: none"> Perception of the time and effort of gathering information prior to the switching 	<ul style="list-style-type: none"> Fornell (1992); Patterson and Smith (2003); Chebat, Davidow, and Borges (2011) 	<p>'We bought [name] market intelligence software to conduct our pilot preliminary research'. Case Study 4</p>
<i>Setup and execution costs</i>	<ul style="list-style-type: none"> Cost of implementing changes (facilities, technical support, etc), including product differentiation costs, information/communication costs 	<ul style="list-style-type: none"> Jones, Mothersbaugh, and Beatty (2002); Patterson and Smith (2003); Whitten and Wakefield (2006); Chebat, Davidow, and Borges (2011) 	<p>'There is no charge to locate the containers in the stores. This cost is also not charged by the real state area in charge of trading the available spots in the stores'. Case Study 1</p>
<i>Sunk costs</i>	<ul style="list-style-type: none"> Perception of investments and costs already incurred in establishing and maintaining infrastructures or relationships 	<ul style="list-style-type: none"> Jones, Mothersbaugh, and Beatty (2002); Whitten and Wakefield (2006); Chebat, Davidow, and Borges (2011) 	<p>'Of course the initial costs for introducing new recycling processes and services across the country were significant [...]. Case Study 4</p>
<i>Performance and time costs</i>	<ul style="list-style-type: none"> Perception of the performance benefits or privileges lost by switching 	<ul style="list-style-type: none"> De Ruyter et al. (1998); Jones, Mothersbaugh, and Beatty (2002) 	<p>Developing employees is an investment for the long run. There is a short term trade off, if thought in terms of time away from work, which in certain roles, have direct cost consequences'. Case Study 2</p>
<i>Procedural Learning costs</i>	<ul style="list-style-type: none"> SC which involves or affects procedures or processes Perception of the time and effort to learn a new service routine 	<ul style="list-style-type: none"> Burnham at al. (2003) Klemperer (1987); Nilssen (1992); Fornell (1992); Chebat, Davidow, and Borges (2011); 	<p>'In the voluntary work project, employees use their knowledge, talent, and expertise at the service of society. This minimise the cost of preparing workforce for field action'. Case Study 1</p>
<i>Uncertainty costs</i>	<ul style="list-style-type: none"> Reduced performance and limitations due to potential risks of uncertainty 	<ul style="list-style-type: none"> Klemperer (1995); Jones, Mothersbaugh, and Beatty (2002); Whitten and Wakefield (2006) 	<p>'We could rely on the wide experience of our partners, and we largely benefitted of it.' Case Study 2</p>
<i>Continuity costs</i>	<ul style="list-style-type: none"> Perception of costs of changing an existing habit/relation (including transaction costs) 	<ul style="list-style-type: none"> Chebat, Davidow, and Borges (2011) 	<p>'In order to better integrate disabled employees, we had to change some of the procedures in place, for instance with regards to security and access.' Case Study 1</p>
<i>Search costs</i>	<ul style="list-style-type: none"> Perception of the time and effort of gathering information prior to the switching 	<ul style="list-style-type: none"> Fornell (1992); Patterson and Smith (2003); Chebat, Davidow, and Borges (2011) 	<p>'To develop the website, we had to collect information from the other departments' Case Study 4</p>
<i>Setup and execution costs</i>	<ul style="list-style-type: none"> cost of implementing changes (facilities, technical support, etc), including product differentiation costs, information/communication costs 	<ul style="list-style-type: none"> Jones, Mothersbaugh, and Beatty (2002); Patterson and Smith (2003); Wakefield (2006); Chebat, Davidow, and Borges (2011) 	<p>'It was the first time we run this initiative [Paper Cup Recycle], apposite bins were bought and positioned in each room to encouraging employees' participation'. Case Study 3</p>
<i>Performance and time costs</i>	<ul style="list-style-type: none"> Perception of the benefits or privileges lost by switching 	<ul style="list-style-type: none"> De Ruyter et al. (1998); Jones, Mothersbaugh, and Beatty (2002) 	<p>'The digital learning portal changes the way employees access sources for their personal and professional development. This is particularly time effective, considering that they can involve in training at any time and from any place convenient to them'. Case Study 4</p>
<i>Relational & Emotional Continuity costs</i>	<ul style="list-style-type: none"> SC which concern relationships and affect emotionally Perception of costs of changing an existing habit/relation (including personal relationship loss and emotional costs) 	<ul style="list-style-type: none"> Burnham, Frels, and Mahajan (2003) Chebat, Davidow, and Borges (2011) 	<p>'Producing the Sustainability Report requires constant updates, for example in relation to policy developments and sustainability trends, as well as a certain degree of political considerations due to different sensitivity in different countries'. Case Study 2</p>
<i>Sunk costs</i>	<ul style="list-style-type: none"> Perception of investments and costs already incurred in establishing and maintaining relationships 	<ul style="list-style-type: none"> Jones, Mothersbaugh, and Beatty (2002); Whitten and Wakefield (2006); Chebat, Davidow, and Borges (2011) 	<p>'Changing supplier can be a painful experience we have to go through, it is like starting again from sketch, with all the costs and risks that this involves'. Case Study 3</p>
<i>Performance and time costs</i>	<ul style="list-style-type: none"> Perception of the benefits or privileges lost by switching 	<ul style="list-style-type: none"> De Ruyter et al. (1998); Jones, Mothersbaugh, and Beatty (2002) 	<p>'As the bonus is affected there are some associates that are not completely agree with the programme'. Case Study 1</p>

Appendix 2. Information on the participating companies

Walmart Mexico & Central America

Headquartered in Mexico City, the Walmart Mexico and Central America is the biggest retailer in Central America, with 2756 stores operating in Mexico, and 864 store in Central America (Walmart Financial Report, Q4 2021).

Walmart's first store outside the United States opened in Mexico in 1991, a Sam's Club in Mexico City. In 2000, the name changed to Walmart de México (WALMEX) and started operating as a separate business. Nowadays, the firm is publicly traded on the Mexican Stock Exchange (Bolsa Mexicana de Valores) and its business operates under different banners including Walmart Supercenter, Sam's Club, Superama, Bodega Aurrerá, Mi Bodega Aurrera, Bodega Aurrera Express, and Farmacia de Walmart. In addition, Walmart is also one of the largest employing companies in Mexico. According to the company's mission statement, its objective is to improve the life quality of families in Mexico and Central America.

Walmart Mexico and Central America achieved MXN 569,367 million (USD \$28,850 million) in net revenue as well as MXN 43,838 million (USD \$2,221 million) in operating profits in 2017 (Walmart Financial Annual Report, 2017).

Regarding its achievements in Sustainability, the firm is included in Sustainable Investment Indexes such as the FTSE4 Good Emerging Index, the DOW JONES Sustainability Emerging Markets Index, and the Sustainability Index of the Mexican Stock Exchange. In addition, the company has a number of Sustainability Awards (Cemefi, FUNDAHRSE, TAMEME) and Recognitions (Blood Bank of Nicaragua, Nicaragua Telethon Foundation, Costa Rica Chamber of Commerce for Sustainable Business, Estrategia y Negocio). In terms of Rankings, the company is 11th in the 45 Top companies with the Greatest Environmental Commitment according to Forbes (2017), and 10th in National Study of Factors of Impact Performance of Companies in Mexico according to FTI Consulting (2017). The interviews took place with the Head of Corporate Responsibility and the Key Project Managers/Head of Departments of the discussed projects. The information was then integrated with the secondary sources provided directly by the company or that were publicly available on www.walmartmexico.com.

Anonymous

The chosen company is a major African retail company, which explicitly requested to keeping its identity anonymous in this study while also giving the permission for the use of its data for the research purposes. Established more than 60 years ago, the major part of the firm's business was developed in South Africa, although the company is also present in other South-East African countries. The company declares that its business is based on three core principles, namely consumer sovereignty, doing a good business, and maximising business efficiency.

The firm is traded on the Johannesburg Stock Exchange and has had over USD \$5 billion in turnover in 2018. The same as the other case studies, the firm is included in a number of sustainability indexes including the Dow Jones ones. Along with Walmart Mexico and Central America, the firm was also one of the 18 retail companies worldwide to qualify as an SVC achiever for this research.

The ESG Score is over 17% in the 3-year period to 2017, shifting the risk rating from B- to B. The financial performance indicators show positive growth, with a ROE (2017) of 42.2% and Total Return (2015-2017) of 30.2%.

ING

ING is one of the main European banks based in the Netherlands. The bank originated as an insurance business, which created ING Group in 1991 following its fusion with the Dutch National Bank. In 2017, the bank was present in 40 countries worldwide with over 38 million clients and 54,000 employees (www.ing.com). This firm is a publicly listed company, specifically quoted on the NYSE and Euronex.

ING is a recognised successful company performing well both financially and in terms of sustainability performance. The firm made EUR 4,905 million (USD \$5,885 million) in net profit in 2017.

The company committed EUR 14.6 billion to Climate Finance, EUR 467.8 million to Social Impact Finance, EUR 5,497 million to Lending to Industry ESG firms and EUR 4,752 million to Sustainable Assets under Management in 2018. ING is also included in the Dow Jones Sustainability Indexes (both World and Europe) and is rated as a 'leader' by ESG research and the rating firm Sustainalytics.

The company has achieved a very high ESG Score (over 81), positioning itself among the first quartile of companies meeting the SVC criteria in Stage 2 of our research with an A risk rating. In addition, the 3-years to 2017 experienced 46% total returns.

The Head of Sustainability in ING authorised the firm to participate in the research and recommended a representative within the Sustainability department to fill in the interview questions. The company website (www.ing.com) was used to verify and complement the collected information.

Rockwool International

Rockwool International is a leading manufacturer of mineral wool that was founded in 1909, is headquartered in Denmark, and is listed on the NASDAQ.

Nowadays, the company operates in 39 countries and has 28 factories worldwide, employing about 8,500 employees. The company's products are traded through the brands Rockwool, Rockfon, Grodan, Rockpanel, and Lapinus.

Despite being the smallest company in our research in terms of both business volume and employees, Rockwool achieved EUR 2374 million (USD \$2,848 million) in revenue and a net profits of EUR 258 million (USD \$310 million) in 2017. The SVC criteria met by the firm are reported in Table 1. The firm has a partnership with SandP Dow Jones' Trucost for its Sustainability Development Goals Evaluation tool and is rated as 'Prime' by the Sustainability Investment rating agency Oekom Research.

Appendix 3. Questionnaire template

Questionnaire

COMPANY NAME

REGION OF HEADQUARTER

PARTICIPANT ROLE

DEPARTMENT

GUIDELINES

- **Discuss 6 Sustainability Projects in the following organisational units or departments:**
- **Environment & Reverse Economy** (e.g. Recycling Waste/Bottles/Paper projects)
- **Marketing** (e.g. Sustainability Communication or Events projects)
- **Suppliers Development/Procurement** (e.g. Small Suppliers, Local Sourcing, projects)
- **Corporate Governance** (e.g. CSR Annual Report, CSR Research & Analysis, Sustainable Investors Relation projects)
- **HR** (e.g. Diversity, Inclusion, Team Building, Benefits projects)
- **Community** (e.g. Learning, Infrastructure Building, Donations projects)
- **Effects to consider in filling the questionnaire**

EFFECTS	ACCEPTATIONS
Economic & Financial	<i>SC which are financially quantifiable</i>
Uncertainty	<ul style="list-style-type: none"> • Reduced performance and limitations due to potential risks of uncertainty
Contractual	<ul style="list-style-type: none"> • Costs of breaking existing contracts or relationships
Search	<ul style="list-style-type: none"> • Perception of the time and effort of gathering information prior to the switching
Setup	<ul style="list-style-type: none"> • Cost of implementing changes (facilities, technical support, etc), including product differentiation costs, information/communication costs
Sunk	<ul style="list-style-type: none"> • Perception of investments and costs already incurred in establishing and maintaining infrastructures or relationships
Performance & Time	<ul style="list-style-type: none"> • Perception of the benefits or privileges lost by switching affecting performance & time
Procedural	<i>SC which involve or affect procedures or processes</i>
Learning	<ul style="list-style-type: none"> • Perception of the time and effort to learn a new service routine
Uncertainty	<ul style="list-style-type: none"> • Reduced performance and limitations due to potential risks of uncertainty
Continuity	<ul style="list-style-type: none"> • Perception of costs of changing an existing habit/relation (including transaction costs)
Search	<ul style="list-style-type: none"> • Perception of the time and effort of gathering information prior to the switching
Setup	<ul style="list-style-type: none"> • Cost of implementing changes (facilities, technical support, etc), including product differentiation costs, information/communication costs
Performance & Time	<ul style="list-style-type: none"> • Perception of the benefits or privileges lost by switching
Relational & Emotional	<i>SC which concern relationships and may affect emotionally</i>
Continuity	<ul style="list-style-type: none"> • Perception of costs of changing an existing habit/relation (including personal relationship loss and emotional costs)
Sunk	<ul style="list-style-type: none"> • Perception of investments and costs already incurred in establishing and maintaining relationships
Performance & Time	<ul style="list-style-type: none"> • Perception of the benefits or privileges lost by switching affecting performance & time

- **Project**

Sustainability Project name

Aim

Departments involved

Other people/organisations involved

(✓)

[illegible]

Appendix 4. Societal objectives, areas of responsibilities, and key sustainability projects

Societal objectives	Areas/departments of responsibility in the company	Key sustainability projects delivered by the company	Project description
CASE STUDY 1			
• Environment oriented	Reverse Economy	1.1 Recycling PET Bottles and Aluminium	This was a recycling initiative in partnership with a large bottled drinks company to encourage customers to bring back their used PET bottles to the stores. Through inverse logistics, the bottles were collected in the stores and transported to a recycling place where they were transformed into new products. The money from reselling the recycled products was then invested in benches, school desks, and chairs which were then donated to the local community. The initiative started in April 2017 with donations accomplished by June 2017. The project targeted 392 stores under the different firm's banners.
		1.2 Recycling Cans	This recycling project was in partnership with a shelf-stable food supplier and one of the main players in the ice cream category in the region. Reverse logistics was also applied to this initiative and the collected money from the recycling was used to donate heating systems to the local community. Customers were invited to leave cans in a dedicated box and in exchange they received vouchers to claim towards a number of providers (e-commerce, services, etc). The project, started in April 2017, had a duration of three months and was applied in 20 stores.
• Customers oriented	Marketing	2.1 Food Bank	Run from the marketing department, this project aimed to expand the customers' awareness of the company's food donation programme running a campaign once a year. The company gathered food close to the expiry date which couldn't be sold in store anymore by law to donate it to the poor people in the local community. In addition to its own donation, the company encouraged food collection directly from customers, offering gathering points in the store under different banners.
		2.2 Small Supplier	The marketing department managed a project to make customers and potential suppliers aware of the small and medium enterprise support programme. The aim was to encourage long-term partnerships between small local suppliers and the company. This included shared advertisement and specific sell points reserved in store. The programme, which is permanently run through 12-month projects, is personalised to each small supplier with the aim of favouring the joint growth of the businesses.
		2.3 Sustainability Information	This project regarded the organisation of an event run in April every year by the marketing department with the aim of connecting sustainable providers, customers, and charities for a more environmentally friendly planet. In particular, the aim of the project was boosting the in-store communication about the company's targets and achievements in the sustainability field as well as promoting the sustainable goods and services available in or through the company.
• Suppliers oriented	Suppliers Development	3.1 Small Supplier	The Supplier Development department managed a project to encourage relationships with its local suppliers that were part of the small and medium enterprise support programme. The project lasted 12 months and the aim was to help 130 local suppliers grow their business and remain competitive while monitoring their progress according to the company charitable trust's directives. Aiming for a long-term collaboration between the selected suppliers with the company, the department was also in charge of assessing the participation and results achieved through the educational section which was set to develop the small suppliers' entrepreneurship skills and knowledge.
		3.2 Global Women Empowering	Part of a larger programme conducted by the company globally, the aim of this project was to encourage the development of women entrepreneurs who operate as suppliers. The objective was to help them increase their business through activities aimed at skills empowerment, inclusion, and the development of new sales channels on a 12-month basis. Directives were set by the US parent company and the department of Supplier Development is responsible for implementing the programme in the region through this project.
• Governance oriented	Corporate Governance	4.1 CSR Annual Report	The project, run once a year by the department of Corporate Governance, involves collecting and reporting all information about the Corporate Social Responsibility activities undertaken by the firm and creating a report to discuss the firm's sustainability performance. Different from the Financial Annual Report, which is required by law, the CSR Annual Report was voluntary adopted by the company globally with the aim of increasing the transparency of information with all stakeholders, particularly customers, suppliers, and investors.
		4.2 CSR Analysis	Run by the Department of Corporate Governance, the 12-month project consisted of coordinating and conducting several bespoke sustainability-focussed research projects, including market studies, in support of other internal departments such as marketing, sales, and product development. The content of the studies varied depending on the purpose. Nevertheless, this project had the core function of helping monitor, communicate, and forecast the firm's sustainability performance through its sustainable activity and the customers' responses to the new product launches and initiatives.
		4.3 Sustainable Investors Relations	This 12-month project involved providing investors or potential investors with information about the sustainability activity of the firm. The purpose was to increase its exposure to sustainable financial markets, reinforcing relationships with existing

(continued)

Appendix 4. Continued.

Appendix 11 Continued			
Societal objectives	Areas/departments of responsibility in the company	Key sustainability projects delivered by the company	Project description
<ul style="list-style-type: none">Employees orientedCommunity oriented	HR (Diversity and Inclusion)	5.1 Cultural Promotion and Integration	investors as well as expanding the investors' range. To further develop the sustainability activity and the firm's impact on sustainability targets, thanks to the capital collected through this channel, the activities included research studies, report generation, and updating the information on the company website. The project was run by Corporate Governance. The Department of Human Resources was responsible for a 12-month cultural project which involved a series of activities aimed at recognising and promoting the local culture, as well as encouraging integration of different cultural backgrounds. The initiatives included the advertisement of the company's values, both printed and digital, cultural events for employees such as art or food initiatives, as well as dedicated in-store points where employees speaking different languages could help customers.
		5.2 Gender Equality	As part of a continuous programme and run on a 12-month span, the project aimed to implement gender equality among the firm's employees, avoiding differences in employee salaries and duties, promoting a gender equality culture, and banning gender-related misbehaviour within the organisation to favour a non-discriminant workplace. As a result of the project, the company obtained a certification from the National Institution of Women.
		5.3 Disability	The Department of Human Resources was also in charge of a 12-month project encouraging the integration of disabled employees as well as guaranteeing infrastructures that can help them more easily access the workplace while making sure that they are supported in the execution of their duties. Through the project, the firm attained a certification from the National Council against Discrimination.
	Foundation	6.1 Food Bank	The firm's charity trust ran a project consisting of guiding and coordinating the departments involved in the food bank programme for hunger reduction in the local communities. The project included activities such as defining the scale, targets, logistics, and participants to the programme. Food was donated daily to 130 food banks in the region.
		6.2 Voluntary Work	The project, run on a 12-month basis by the firm's charitable trust, consisted of engaging employees in voluntary work. This was part of the volunteerism programme which provides the chance to actively participate in community support activities, whereby the employees' talent and time can contribute towards improving the community and the environment. The activities were suggested by employees or NGOs and the charitable trust provides the necessary resources. Employees can choose from a series of activities involving their passion for a specific sustainability topic or their professional skills. Depending on the activity, the employees could also use some of their working hours to participate in the project. In 2017, the project involved 75,558 voluntary participants, of which 720 executives and 17 vice presidents were involved in 1,713 initiatives.
		6.3 Small Supplier	This charitable trust's project consisted of coordinating the business needs with potential small suppliers and running the operative part of the wider small and medium enterprise support programme. Among the various activities, there were the choice and organisation of training courses such as business, finance, marketing, and economics aimed at the development of small local business entities.
CASE STUDY 2			
<ul style="list-style-type: none">Environment oriented	Reverse Economy	1 Improving Energy Efficiency and Reducing Carbon Emission	The project involved several activities including the installation of solar panels on every store and providing employees with smarter equipment, aiming to reduce energy usage by 50% in 10 years time. The project also involved the streamlining of the supply chain to reduce carbon emission. The targets were –20% CO2 per square metre and –10% absolute emissions in 5 years time up to 2020.
<ul style="list-style-type: none">Customers oriented	Marketing	2 Sustainability Communication	Run by the Communication department, the project ran each year with the purpose of coordinating, assisting and monitoring the relationship with communication agencies in order to increase the awareness of the sustainability activity among customers and staff with the aim of getting them more involved in the different initiatives.
<ul style="list-style-type: none">Suppliers oriented	Suppliers Development	3 Sustainable Seafood, Sow Crate Friendly	The dual project, which was part of a wider procurement strategy, aimed to support environmentally responsible fisheries and farms. The project target was to source 100% of the retailer's branded processed pork products from sow crate-friendly farms and over 80% of seafood by 2017. The products sold in store comply with multiple sustainability criteria certified by the several environmental and animal rights associations.
<ul style="list-style-type: none">Governance oriented	Corporate Governance	4 Sustainability Report	Run by the Governance department, the project involved a yearly commitment aimed at the generation of a report that was used to spread awareness of the firm's sustainable activity, particularly its targets and achievements in the field of sustainability, to investors, customers, and suppliers.
<ul style="list-style-type: none">Employees oriented	HR (Diversity and Inclusion)	5 Skill Development Programme	As a part of a continuous programme, the 1-year project ran over 330 training initiatives for employees, ranging from basic literacy and numeracy through to computer-based training on management and leadership. The aim was to invest in the personal and professional development of the employees, sustained by the idea that a happier, healthier, and trained employee can better contribute to the firm and overall economy. Activities were organised with partners such as local technicians, experts and nurses and involved educational and training opportunities, vaccinations, etc.

(continued)

Appendix 4. Continued.

Societal objectives	Areas/departments of responsibility in the company	Key sustainability projects delivered by the company	Project description
<ul style="list-style-type: none"> Community oriented 	Foundation	6 School Clubs	As part of a project operating for 14 years, the 12-month project ran in 2017 and consisted of supporting educators from 3,025 schools in achieving classroom objectives on the themes of promoting imagination and creativity, healthy bodies, and a healthy world. The points collected by customers shopping in the store were also used to assist schools with feeding schemes and to develop food gardens. The project included a pilot initiative for an in-store early learning intervention.
CASE STUDY 3			
<ul style="list-style-type: none"> Environment oriented 	Reverse Economy	1 Office Sustainability – Paper Cup Recycle Project	Run by the Global Sustainability office yearly in collaboration with the Procurement department, the project consisted of organising and implementing the recycling of paper cups used within the offices through the use of bins. The project had the purpose of increasing recycling while keeping as little residual waste as possible ('recycle, reduce, reuse'). As an example, the coffee cups from the office were used to produce toilet paper and towels for the office. This was part of a larger programme conducted at the country level which involved the recycling of different raw materials including plastic and organics.
<ul style="list-style-type: none"> Customers oriented 	Marketing	2 Sustainability Direction Communication	The project involved all communication activities concerning the delivery of a 5-year sustainability plan for customers. It was conducted by the Global Sustainability Department along with the Communication department.
<ul style="list-style-type: none"> Suppliers oriented 	Suppliers Development	3 Supplier Sustainability Revamp	Conducted by both the Global Sustainability and the Procurement departments with the aim of improving the suppliers' sustainability assessment framework, the 1-year project was the second of three phases in the firm's Sustainable Procurement Programme which also included establishing the minimum requirements for suppliers as a gatekeeper and implementing Product/Service-specific criteria. To accomplish the project, the firm partnered with a sustainability institute in March 2018 to heighten the level of transparency in its supplier base. The sustainability institute was an independent third party with expertise in sustainable supply chain management.
<ul style="list-style-type: none"> Governance oriented 	Corporate Governance	4 Integrated Annual Reporting Tool	Run jointly by the Finance, Communication, Legal, Risk and Sustainability departments, the project consisted of implementing a tool allowing the collection and organisation of the information needed for integrated reporting. This project included the creation of the sustainability annual report and other personalised documentation to monitor the sustainability strategy, its governance, and performance.
<ul style="list-style-type: none"> Employees oriented 	HR (Diversity and Inclusion)	5 Unconscious Bias Training Programme	The Human Resources and the Global Sustainability departments managed a project with the purpose to uncover discrimination episodes within the firm. Managers were trained on how the mind works to become aware of and learn how to intervene when other employees are discriminated against in the workplace. This was based on the recognition of unconscious behaviours.
<ul style="list-style-type: none"> Community oriented 	Foundation	6 UNICEF Partnership	The Global Sustainability and Procurement departments ran a project in partnership with UNICEF with the collaboration of all of the firm's employees and customers, aiming to provide 1 million children with better quality education and safer and healthier living conditions. The project had two phases. The first decade since 2005 consisted of improving children's access to education in communities in Brazil, Ethiopia, India, Madagascar, Nepal, Turkey, Romania, Ukraine, and Zambia. The second decade, currently under execution, focuses on children's empowerment with the aim of helping the new generations to achieve their personal goals.
CASE STUDY 4			
<ul style="list-style-type: none"> Environment oriented 	Reverse Economy	1 Reclaimed Waste	The aim of the project was to expand the firm's reclaimed waste programme from 5 to 30 of the 38 countries of operations by 2030. Run by the group's sustainability department, the project involved introducing new recycling processes and services at the country level. The project also required establishing and managing the communication and coordination with the production department and its stakeholders to develop the initiative.
<ul style="list-style-type: none"> Customers oriented 	Marketing	2 Website Content on Product Sustainability	Run by the Marketing Department in close collaboration with the Department of Sustainability, the project was part of a larger programme with the purpose of improving communication with customers and increasing their awareness about the firm's sustainable products by providing detailed information on the available range on the company's website. The project involved developing the content as well as the design and display of the website.
<ul style="list-style-type: none"> Suppliers oriented 	Suppliers Development	3 Store Supplier Collaboration Pilot	This pilot project was run by the Department of Sustainability in collaboration with a sustainability research and rating firm which also provided assessments through scorecards. The project consisted of evaluating 100 suppliers in light of their sustainability performance, product range, and other sustainability related KPIs. The aim was to establish the suitability of such suppliers to collaborate with the firm in the long-term by contributing to the firm's product development in line with its sustainability targets.
<ul style="list-style-type: none"> Governance oriented 	Corporate Governance	4 Sustainability Committee Work	Under the direction of the Group Management in close collaboration with the Department of Sustainability, the purpose of the 12-month project was to organise the activity and related schedule of the Sustainability Committee. This organisation was formed by a group of employees with or without the support of external advisors who were responsible for the improvement of the company's governance. More specifically, their activity consisted of overseeing the development and implementation of sustainable activities as well as integrating the firm's strategy into daily business processes with an impact across the overall network.

(continued)

Appendix 4. Continued.

<i>Societal objectives</i>	<i>Areas/departments of responsibility in the company</i>	<i>Key sustainability projects delivered by the company</i>	<i>Project description</i>
<ul style="list-style-type: none"> • <i>Employees oriented</i> 	<i>HR (Diversity and Inclusion)</i>	<i>5 Digital Learning Portal</i>	<i>The Department of Human Resources was in charge of a project launched in 2017 aiming to help employees progress in their careers by learning new skills through a digital Cloud-based learning platform. Using this educational methodology, employees could pursue their career development at their own convenience and in a personalised way by having free access to the platform, which also allowed constant remote support.</i>
<ul style="list-style-type: none"> • <i>Community oriented</i> 	<i>Foundation</i>	<i>1. Innovation Community Partnership</i>	<i>The project was run by the Public Affairs Department and consisted of conducting neighbourhood regeneration research with the aim of creating integrated and sustainable urban improvements. This was achieved in partnership with a European knowledge and innovation community whose work aimed to accelerate the transition to a zero-carbon economy to create positive externalities in terms of health, energy security, facilities development, etc.</i>

NB. In Case Study 1, projects that are part of a programme are reported in bold. Programmes are shared by multiple departments, aiming to different societal objectives.