Politecnico di Bari

Department of Mechanics, Mathematics and Management
MECHANICAL AND MANAGEMENT ENGINEERING
Ph.D. Program
SSD: ING-IND/35–Management Engineering

Final Dissertation

Green and social process patterns for sustainable businesses: lessons learned from Italian Benefit Corporations

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Angela Nuzzi

Supervisor:

Prof.ssa Barbara Scozzi

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Prof. Giuseppe Pompeo Demelio

Course XXXV, Luglio 2020-Ottobre 2023

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Referees:

Prof. Matteo Mura

Prof.ssa Stefania Testa

Supervisor:

Prof.ssa Barbara Scozzi

Coordinator of Ph.D. Program:
Prof. Giuseppe Pompeo Demelio

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Summary

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Abstract

In the last decades the attention of citizens and companies on sustainability issues has increasingly grown. Today companies are asked to consider economic, social and environmental dimensions of sustainability to operate in ways that secure long-term economic performance by avoiding detrimental social and environmental behaviour.

Such a growing attention towards sustainability has led to the introduction of new methods, approaches, and organizational models to consider sustainability within business. As to methods and approaches, in the present work, those offered by Sustainable Business Process Management are examined. As to the new organizational models, the attention is focused on Benefit Corporations.

Sustainable Business Process Management (S-BPM) – the managerial discipline that provides organizations with methods, approaches, and techniques to embed sustainability in the management of business processes – has recently emerged as a research stream of Business Process Management. In addition to traditional performance (i.e. time, quality, cost, and flexibility), in the case of S-BPM, the environmental and social performance are considered to properly manage business processes along their entire life cycle.

Benefit Corporations – innovative hybrid form of businesses that purse both profits and common benefit objectives – have also been established to mitigate negative externalities attributed to the enterprises' narrow focus on profit maximization that has characterized the capitalism model. Such a model has generated prosperity and improved the quality of life, but not without undesirable, in many cases harmful, social and environmental consequences.

The dissertation aims to identify sustainable (green and social) process patterns that companies may adopt to undertake a sustainable transformation of their business processes. A sustainable process pattern provides reusable and practice-based solutions to environmentally and socially analyse, design and redesign a business process. By adopting the theoretical lens of process theory and a pragmatist qualitative research design, a qualitative content analysis of Benefit Corporations' sustainability reporting documents has been conducted to systematically and objectively identify sustainable practices that Benefit Corporations implement to achieve their sustainability goals. Such sustainable practices have constituted the practical basis for the derivation of a set of thirty sustainable process patterns.

The dissertation has theoretical and practical implications. By analysing sustainable practices adopted by Benefit Corporations to achieve sustainability goals, it contributes to advance academic knowledge on Benefit Corporations and address some literature gaps. By providing a set of sustainable process patterns, it contributes to advance academic knowledge in the field of Sustainable Business Process Management. As to practical implications, the dissertation provides a handbook of sustainable practices (in the form of sustainable process patterns) that companies and process analysts may adopt to analyse, design, and redesign business processes, and make them more environmentally and socially sustainable.

Introduction

Sustainability – commonly declined through the well-known Triple Bottom Line approach (Elkington, 1997) – envisages three dimensions, namely the economic, environmental and social one. Companies that intend to achieve sustainability and succeed in the long run should focus on all three dimensions of sustainability which should be always considered and addressed in an integrated and not opposed way (Savitz, 2013).

The increasing companies' attention towards sustainability has led to the development of new methods and approaches to embed sustainability in the management of business processes. Sustainable Business Process Management (S-BPM) emerged as a research stream of Business Process Management, the discipline that supports organizations in the analysis, redesign, implementation, and monitoring of business processes (Dumas et al., 2013; Weske, 2007). S-BPM provides organizations with methods, techniques, and approaches to environmentally and socially analyse, design and redesign business processes. Business processes are the way companies accomplish their business goals (Crowston, 2000) and, to achieve sustainability goals, companies should design (and redesign) business processes by considering their environmental and social impacts, in addition to time, cost, flexibility and quality performance.

The dissertation aims to identify sustainable (green and social) process patterns that companies may adopt to environmentally and socially manage their business processes. Sustainable process patterns can be defined as reusable and practice-based solutions to environmentally and socially analyse, design and redesign a business process.

The study began with an investigation of the academic literature on S-BPM to detect methods and approaches to embed sustainability (both environmental and social) in the management of business processes and identify existing knowledge gaps to be solved. Sustainable (green and social) process patterns have already proposed by S-BPM literature (Nowak et al. 2011; Schoormann et al., 2019). However, the proposed patterns do not adequately present the relationships with business processes they intend to (re)redesign, as well as with the stakeholders to whom they refer. They also lack performance indicators to measure the sustainability performance. Additionally, the derivation process of the existing patterns is not clear. This study tries to address such gaps.

To achieve the study goal, Benefit Corporations have been considered to generate practical knowledge useful to derive sustainable process patterns. Benefit Corporations are hybrid business forms (Clark Jr et al., 2012; McDonnell, 2014) that pursue dual purpose in terms of profit and common benefit objectives. A preliminary literature on Benefit Corporations has been conducted with the aim to explore such a new organizational model.

A qualitative content analysis of sustainability reporting documents published by a sample of Italian Benefit Corporations has been carried out to identify sustainable practices through which they environmentally and socially manage their business processes. The identified sustainable practices constituted the practical basis for the derivation of sustainable process patterns.

The study contributes to literature on S-BPM as it extends knowledge on the analysis, design and redesign of business processes from sustainability perspective. By providing knowledge on sustainable practices that Benefit Corporations adopt to achieve their sustainability goals, the study contributes to

shed some light on how Benefit Corporations pursue their dual purpose, so contributing to address a knowledge gap in the Benefit Corporations literature.

The study has managerial implications as it provides companies with a handbook of practices (in the form or sustainable process patterns) to which they may refer to environmentally and socially improve their business processes.

The thesis includes four chapters, namely an introductive chapter and three more chapters presented in form of papers, and is structured as follows:

- Chapter 1: Research background and design. The chapter presents the context of the research, the theoretical and philosophical assumptions, the research objectives, and the methodologies adopted to address them.
- Chapter 2: Sustainable Business Process Management: a systematic review. In the chapter, the results of systematic literature review conducted on the topic of sustainable business process management are reported and discussed.
- Chapter 3: Benefit Corporation: a systematic literature review. The chapter reports the results of a systematic literature review conducted on the topic of benefit corporations with the aim to analyse how existing literature has addressed the peculiar aspects of the new form of business and detect literature gaps.
- Chapter 4: Sustainable process patterns: a content analysis of Benefit Corporations' sustainability reporting documents. The chapter presents the sustainable (green, social, hybrid and governance) process patterns that companies can use to sustainable design and redesign their business processes; the patterns have been derived through the content analysis of benefit corporations' sustainability reporting documents, whose phases and results are reported in this chapter.

1. Research background and design

1.1 Research context and background

Since the second half of the twentieth century, sustainability has been affirmed ant it is increasingly affecting the behaviours of citizens and businesses. Common and widely accepted definition of sustainability refers to the triple bottom line framework articulated by Elkington (Elkington, 1997) in the three keywords "people, planet and profit" which summarize the three interconnected goals of a sustainable behaviour. The Triple Bottom Line captures the essence of sustainability by referring to the impact of an organization's activities on the world, both in terms of its profitability and in terms of social, human and environmental effects (Savitz, 2013). A sustainable business should incorporate this triple bottom line approach and operate in ways that secure long-term economic performance by avoiding behaviour that is socially detrimental or environmentally wasteful in the society in which it operates (Porter et al., 2006). The attention to economic, social, and environmental issues - from which businesses cannot leave aside to compete in the market - reflects a reconfiguration of the relationship between businesses and society that has occurred in the past decades that is also the results of an evolution in corporate theories.

Shareholder theory, advanced by the economist Milton Friedman, represents the first step of a wide and still ongoing debate on corporate responsibility and its relationship with the society. Friedman (1962) asserted that "few trends could so thoroughly undermine the very foundations of our free society as the acceptance by corporate officials of a social responsibility other than to make as much money for their stockholders as possible". This theory implies that the only company's responsibility is to provide a maximum financial return to shareholders; business contributes to society by making profit, which support wages, employment, investments, and taxes and all the social and community issues fall outside its own scope. For long time such a perspective dominated and permeated the management thinking (Porter et al., 2011). However, the shareholder wealth maximization as the only obligation of corporate decision making collapsed over the course of the twentieth century when other theories – primarily Corporate Social Responsibility (CSR) – affirmed. Corporate Social Responsibility addresses the entire spectrum of obligation and responsibility that business has towards society (Carroll, 1979). The four-part definition of CSR provided by Carrol (1991) explains the idea that business has not only economic obligation, but also legal obligations, ethical and discretionary responsibilities (philanthropy). The pyramidal representation of the four-part definition of CSR intends to portray that the responsibility of a business comprises distinct components with the economic dimension (the business's responsibility to make profit for the shareholders) at the basis; at the same time, business is expected to obey to the law and comply with government and local regulations; also, business has a responsibility to be ethical, namely it is obliged to do right, just and fair and to avoid or minimize harms to stakeholders and society; finally, the last component is the philanthropic responsibility, i.e. the responsibility to be a good

corporate citizen, to contribute financially and with human resources to the community development and to improve the quality of life. In summary, CSR entails the simultaneous fulfilment of the company's economic, legal, ethical and philanthropic responsibilities (Carroll, 1991).

Stakeholder theory – that argues that a company has to create value not only for the shareholders but for all its stakeholder (Freeman, 1984) – contributed to CSR debate. Essentially, stakeholder theory allowed CSR scholars to identify and specify social obligations of business (Parmar et al., 2010), as the term social in the CSR definition remained vague (Carroll, 1991); the concept of stakeholders indeed delineated the specific groups that business should consider in its CSR orientation. Stakeholder theory advocates were the first to move critiques to CSR: they criticized the dichotomy between business and ethics and between profit and social interest created by CSR approach. Although they agreed with the concepts at the basis of CSR, i.e. ethical and social concerns as important as the profit, they argued that these concerns had not to be separated from the business model (Freeman et al., 2013). According to stakeholder theory, business has a purpose that is creating value for customers, suppliers, employees, and communities as well as for financiers. On the contrary, value creation does not fall in the scope of CSR: this implies that CSR programs implemented by companies are not aimed to create value for stakeholders. According to stakeholder theory, as long as CSR is considered only as a social compensation and a way to improve company's reputation, separated from the company's core business, the old profit-driven conception of business is implicitly approved (Freeman et al., 2013). This view was widely supported and advanced by Porter and Kramer, two leading business scholars, who introduced the concept of Shared Value. Porter and Kramer (2006) observed that endeavours already done from many companies to consider and mitigate the social and environmental consequences of their activity had not been as productive as they expected. According to them, that occurred because companies were stuck in the CSR mindset. First, despite their obviously interdependence, in CSR business and society are set against; second, the prevailing approaches to CSR are fragmented, and often disconnected from business strategy; in other words, Porter and Kramer criticized CSR as the initiatives implemented by companies are often uncoordinated, rely on voluntary philanthropic activities perceived as a cost and not connected with the core company's business and strategy. So, CSR initiatives neither make any meaningful social impact nor strengthen the firm's long-term competitiveness (Porter et al., 2006). A shift towards a strategic CSR that implies a renewed way to conceive the relationship between business and society was therefore theorized. Porter and Kramer (2006) pointed out that business and society are interdependent and impact on each other: a company impinges upon society through its operations in the normal course of business, but external social conditions also influence corporations. Strategically approaching to CSR means anchoring CSR in the strategy and activities of each company. Strategic CSR occurs when a company adds social dimension to its value proposition, making social issues integral to its overall strategy (Porter et al., 2006). Obviously, corporations are not responsible for all the world's problems, nor do they have the resources to solve them all; each company has to select only those societal issues that intersect with its particular business and that represent an opportunity to gain competitive advantage as well as to make real difference to society. In other words, company should address social needs in a way to create shared value, a benefit for society that is also valuable for the business.

Porter and Kramer (2011) defined shared value as policies and operating practices that enhance the competitiveness of a company while simultaneously advancing the economic and social conditions of

the community in which it operates. Creating shared value means creating economic value in a way that also creates value for society by addressing its needs and challenges. If companies pursue shared value, society's overall interests and needs would be served (Porter 2011). As assumed by CSR, creating shared value presumes compliance with the law and ethical standards and mitigating any harm caused by business's activities. However, as explained, it also means to go beyond CSR approaches; differently form CSR approach that focus mostly on voluntary and reputational practices with a limited connection to business value proposition, creating shared value is integral to company's profitability and competitive position.

Porter and Kramer (2011) argue that redefining corporation purpose as creating shared value will conduct to a new, more sophisticated form of capitalism and unlock a wave of innovation and growth in the global economy.

It is in this setting that, stating from the first decade of the twenty first century, new forms of organizations - which are blurring the boundary between for-profit and no-profit organizations - emerged, demonstrating that shared value concept is actually applicable (Porter et al., 2011). They may be labelled as hybrid organizations, blended value enterprises, social enterprise, for-benefit enterprises, benefit corporations. According to some scholars they constitute the fourth sector that refers to an additional sector - which complements the traditional three sectors, namely the business/for-profit sector, the government/public sector, and the no-profit sector - and recognises the blurring of boundaries that is occurring in the business context, where blended value proposition of making profits while simultaneously serving a social and environmental purpose is increasingly emerging (Sabeti et al., 2015; Waddock et al., 2011). To pursue the blended value is considered a way to mitigate negative externalities attributed to the enterprises' narrow focus on maximizing profit and financial value (Kanig, 2013; Mcmullen et al., 2016) that characterized the capitalism model that has generated prosperity and improved the quality of life, but not without undesirable social and environmental consequences (Sabeti et al., 2015).

The new conception of business and its role in the society was effectively summarized in the open letter that Larry Fink[1] (2018) wrote to the CEOs in which he pointed out that to prosper over the time, every company must not only deliver financial performance, but also make a positive contribution to the society.

The increasing and by now inevitable companies' attention towards sustainability implies to consider sustainability as a crucial emergent dimension in the management of a company. To achieve their business goals, companies execute a set of business processes that take an input, add value to it and transform it into an output to an internal or external customer (Harrington, 1991). Business processes are indeed the way organizations accomplish desired goals (Crowston, 2000). If companies declare sustainability as one of their desired business goals, sustainability becomes a new emergent dimension in the management of business processes.

Sustainable Business Process management (S-BPM) emerged in the last few years as a new stream of Business Process Management (BPM), the discipline that provides companies with methods and approaches for designing, implementing, executing, and monitoring business processes (Dumas et al., 2013; Weske, 2007). Traditional approach to BPM focuses on the improvement of business processes in

[1]Larry Fink is the CEO of BlackRock an American multi-national investment company. For more details see: https://www.blackrock.com/corporate/investor-relations/2018-larry-fink-ceo-letter

terms of time, cost, quality and flexibility (Couckuyt, 2018), so neglecting any impact in terms of environmental and social sustainability. S-BPM advances the field of BPM by adding a new dimension to the management of business processes, with the aim to consider and balance environmental, social and economic impact of business processes (Couckuyt, 2018; Couckuyt et al., 2020; Magdaleno et al., 2017).

1.2 Research objectives

The objective of this research is to identify sustainable process patterns to which companies may refer to implement a sustainable transformation; the study intends to investigate what green and social process patterns companies may adopt to design and redesign sustainable business processes. Also, this study intends to investigate whether and how these process patterns are adopted over time.

Pattern approach supports organizations and process analysts in the analysis, redesign and improvement of business processes by providing practical solutions to address problems; sustainable (green and social) process patterns, indeed, describe practical solutions to embed environmental and social sustainability in the management of business processes in order to make them more environmentally and socially sustainable.

To achieve the study goal, the analysis will be focused on Benefit Corporations that are business forms whose objective is to combine profits and societal benefits. In particular, the analysis will investigate what business practices benefit corporations adopt to pursue and achieve their sustainability goals; it is also intended to investigate whether and how these sustainable practices evolve over time and how these companies measure their impact, in terms of social and environmental performance. To address the research goal, a qualitative content analysis of benefit corporations' sustainability reporting documents will be conducted to identify sustainable practices that constitute the practical basis for the derivation of sustainable process patterns. The results are discussed in Chapter 4.

By dealing with this research objective, this study intends to contribute to solve some gaps that emerged in the academic literature. Indeed, a preliminary analysis of the existing literature on Benefit Corporations and Sustainable Business Process Management (S-BPM) has been conducted. The purpose of the analysis of existing literature on S-BPM is to investigate how and in what extent the sustainability has affected the managerial discipline. Particularly, the literature review on S-BPM intends to detect the suggested methods, techniques, and approaches to embed sustainability in the management of business processes to which companies and analysts may refer to design, monitor and redesign environmentally and socially sustainable business processes. Additionally, a literature review on Benefit Corporations has been carried out. Benefit corporations are receiving growing global attention as organizational form which combines profits and sustainability goals. To date, this organizational model has been introduced in many countries in the world (e.g., USA, Colombia, Porto Rico, Ecuador, Canada-British Columbia, Perù, France) including Italy where, since the 2016, the growth in the adoption of this model has been considerable. Although the rapidly worldwide growing in the adoption of this model, academic research on Benefit Corporations is still limited; the objective of the literature review is therefore to investigate how and to what extent extant academic literature has investigated the implications of such a model in the way of conceiving economy and interpreting corporate social responsibility, the peculiar aspects of benefit corporation organizational model, the business processes and practices they

implement to achieve their dual purpose, as well as the motivations and main challenges associated to the adoption of such a model.

Both these literature analyses were addressed by adopting the systematic literature review (SLR) methodology. The results of the systematic literature reviews are presented in the following two Chapters.

To the best of the author's knowledge, extant literature on benefit corporation model did not address benefit corporations from the perspectives of business processes and practices; extant literature did not extensively examine sustainability practices that benefit corporations adopt to achieve their common benefit objectives and how and if these practices evolve over time. At the same time, this research aims to contribute to S-BPM, by extending the existing research, still limited, on green and social business process patterns, a method that S-BPM proposes to support the design and redesign of sustainable business processes.

Table 1.1 summarized the objectives of the three main part of this thesis.

Table 1.1. Thesis research objectives

Research Objective	Research Methodology	Chapter
investigate the extant academic literature on Sustainable Business Process Management	Systematic Literature Review	2
investigate the extant academic literature on benefit corporation		3
detect green and social process patterns that companies may adopt to design and redesign their sustainable business processes	Qualitative content analysis	4

1.3 Process Theory

The theoretical lens adopted to accomplish the research goal is process theory.

Process Theory focuses on how and why things emerge, develop, grow, or terminate over time (Langley et al., 2013) and explains how and why a process unfold over time (van de Ven, 1992). Process Theory explains how an outcome develops through a sequence of events and activities (Markus et al., 1988; Mohr, 1982).

To better understand the process theory conceptualization, scholars distinguish process theory from variance theory (Mohr, 1982). While process theory refers to conceptual constructions that focus on the way in which phenomena emerge and evolve trough activities and events, variance theory provides explanation of relationships between dependent and independent variables. These two theories, although presented as opposite, are complementary: variance theory allows to generate knowledge of "what works", usually based on comparison of performance in large samples or on controlled lab experiments; however, knowledge generated through variance theory misses to explain how the changes that the evidence suggest occurring, and such a knowledge is fundamental and desirable to make the knowledge generated through variance theory truly actionable. As pointed out by Langley et al. (2010), knowing that a firm that adopts an organizational practice B perform better that a firm that adopts a practice A reveals almost nothing on how to move from A to B; in other words, if variance theorizing generates *know-that* type of knowledge, process theorizing produces *know-how* knowledge. Process theory, by representing reality as a set of activities and events, addresses the question of how something happens (Mackenzie, 2000), so explaining how organizations really work (Langley, 1999), so generating knowledge that is highly relevant to practice (Langley et al., 2010). Process research, being

particular prone to offering insightful answer to how questions (Abdallah et al., 2019), is useful to develop theoretical based and practical tools to support managers. Most process research involves a combination of observations, documents and archival data, and interviews as data sources to examine different dimensions of processes and to address processes from temporal perspective (i.e., observations are embedded in the present, documents are embedded in the past, and interviews are temporally versatile (Langley, 2009)).

Two dominant approaches – labelled evolutionary and performative process stories – to conduct process research was identified by Abdallah et al.(2019) through an analysis of published process research. These approaches to process research reflect the traditional distinction between weak and strong process view that relies to different conceptions of the nature of the world (Langley, 2009; Langley et al., 2013). When adopting a weak process view the emphasis is placed on the change and development of existing entities or things; a strong process view enacts the ontology of becoming, according to which the world is made and constituted by processes (activities, events, experiences). Process research adhering to weak process view looks at organizational changes in terms of movement from one state to another (and this view is consistent with the evolutionary process story approach); process research adhering to strong process view concerns with understanding how stable entities of an organizations (such as structure, culture, and strategy) are constituted of ongoing micro-processes (Langley, 2009); this view is consistent with the performative process story approach to process research that, according to Abdallah et al.(2019), is more focused on patterns in practices and activities rather than on long-term evolution.

1.4 Research Design

In this Section, the assumptions and choices underpinned to turn the research objective into a research project are discussed. To address the objective of this research a pragmatist qualitative research design was developed. As to philosophical standpoint, the research adopts a pragmatist research philosophy. The choice to adopt the pragmatist paradigm relies in the lack of alignment of the research objectives with the traditional philosophical dichotomy between positivism and interpretivism characterized by strong ontological (the nature of reality) and epistemological (the nature of knowledge) positions. Indeed, when the research question does not suggest unambiguously a particular philosophy to be adopted, the pragmatist's view is the most appropriate philosophical choice (Kaushik et al., 2019; Saunders et al., 2012; Wilson, 2014). The pragmatist research philosophy poses the practical nature of being, reality or a phenomenon at the centre (Sefotho, 2015) and orients the research toward solving practical problem in the real world (Kaushik et al., 2019); pragmatist researchers focus on the what and how of a research problem and place the research problem and question at the centre of research (Wilson, 2014). Pragmatists recognise that there are many ways of interpreting the world and undertaking research and that multiple realities exists. The choice of a version of the reality over the others is based on how well that choice allows the researcher to achieve his/her purposes (Kaushik et al., 2019; Tashakkori et al., 2008).

The research has an exploratory nature as it intends to investigate how companies pursue the sustainability objectives with a focus on benefit corporations. The explorative nature of the research is justified by the absence of wide academic knowledge on the topic, especially in terms of the exploration of benefit corporations from process perspective.

As already mentioned, the theoretical lens adopted to accomplish the study goal is process theory. In particular, the study roots in the strong process view as it intends to understand how companies really works by considering them as entities constituted by ongoing micro-processes.

To address the research questions, the inductive/abductive research approach and a qualitative research strategy was adopted. Explorative studies based on qualitative research strategy are generally associated with an inductive approach that starts from data to generate knowledge so abstracting from specific to general (Saunders et al., 2012). In this study, the collection and analysis of data, the identification of emerging theme and patterns to generate knowledge and extend extant literature on the topic of interest is in line with the inductive approach. However, the approach adopted is not purely inductive as an in-depth literature review has been conducted to detect existing knowledge and determine knowledge gaps to fill and define the research questions to address. According to Saunders et al. (2012), such an approach is rather in line with the deductive research approach. By adopting both the deductive and inductive approach, the research approach adopted in this study is in line with the "abductive reasoning" that, according to Morgan (2014), characterizes the pragmatist research philosophy and which implies to move back and forth between induction and deduction; when adopting abductive reasoning the research process moves between theory and data and never operates in a single direction.

To deal with the research objective, a cross-sectional study was conducted as the study involves the collection of data from a certain number of cases (benefit corporations) and these data are collected at a single point in time; however, a part of this study also adopts a longitudinal research design as a sub sample of cases (benefit corporations) is studied over an extended period of time.

As to data collection, the study is bases on secondary data, i.e., data that has been published for some other purposes. The study, indeed, is based on sustainability reporting documents published by Italian benefit corporations which are required to annually publish such a documentation to account for the sustainability performance and explain stakeholders how they pursued the dual purpose. These documents are made publicly available on companies' websites by most benefit corporations, and they constitute a suitable source of data to address the research questions posed in this study. The choice to use only secondary data allows to consider a large number of cases (e.g., benefit corporations) that could not be considered with the collection of primary data by reducing the time and costs of data collection; additionally, secondary data collection allows to widen the research focus in both longitudinal and geographical span; also, the collection of secondary data, especially when data are publicly accessible, allows researcher to overcome ethical and legal implications that can be encountered in the collection of primary data (Cheong et al., 2023). For instance, in this study, the collection of secondary data allows the consideration of a large number of companies located in many different geographical areas that the candidate, for time and cost constraints, would never be able to involve in the study. Also, no legal obstacles (e.g., related to data privacy) have been met as all data collected is made publicly accessible by the companies. Address research question only on the basis of secondary data may have some limitations that refer to the consistency of data source and quality of materials collected, as well as to the clarity of the implemented data collection procedure (Cheong et al., 2023). In this study, such aspects have been addressed by defining, in first instance, criteria for the eligibility of data included in the dataset; also, criteria for the assessment of the quality of the collected documents were defined and

applied. The sampling procedure has been conducted by adopting reasoning sampling criteria and punctually described to make it as clear and transparent as possible.

A data collection of sustainability reporting documents published by benefit corporations on their website was indeed undertaken and the collected documents were then analysed by adopting a qualitative content analysis method.

The components and key assumptions discussed above are visually represented in the research methodology honeycomb developed by Wilson (2014), a diagram that includes the research elements that make up the research methodology, i.e. the approach and strategy used to conduct the research; the model was chosen because, unlike other linear or layer-based diagram of research (such as the research onion provided by Saunders et al. (2012)), it emphasises the not linear thought process and the fact that not necessarily research elements have to be considered in a predefined order but they can arise from the other elements. For instance, in the case on hand, the research strategy (qualitative) clearly come out from the choice of qualitative materials (sustainability reporting documents) on which the study is based as well as from the choice of qualitative research approach for data analysis.

Figure 1.1 depicts the research methodology honeycomb and summarizes the considerations discussed above. The phases followed in the research process are schematically illustrated in Figure 1.2.

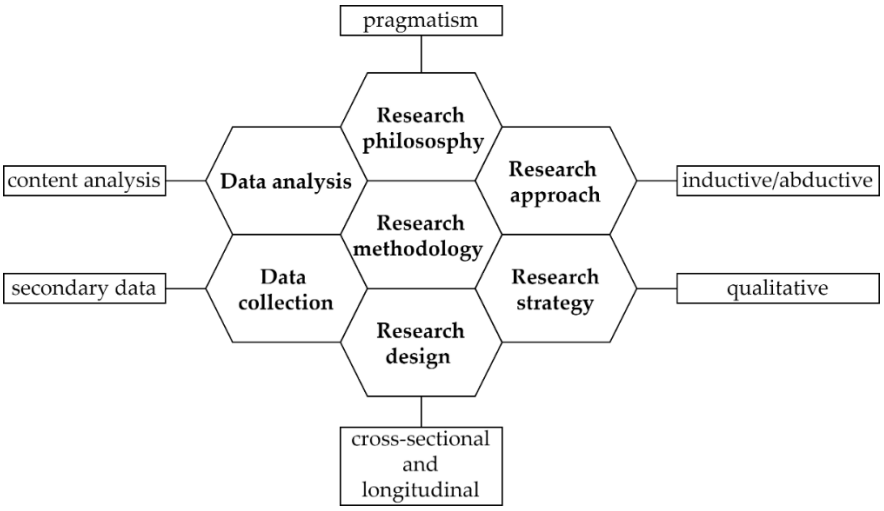

Figure 1.1. The Honeycomb of research [adapted from: (Wilson, 2014)*]*

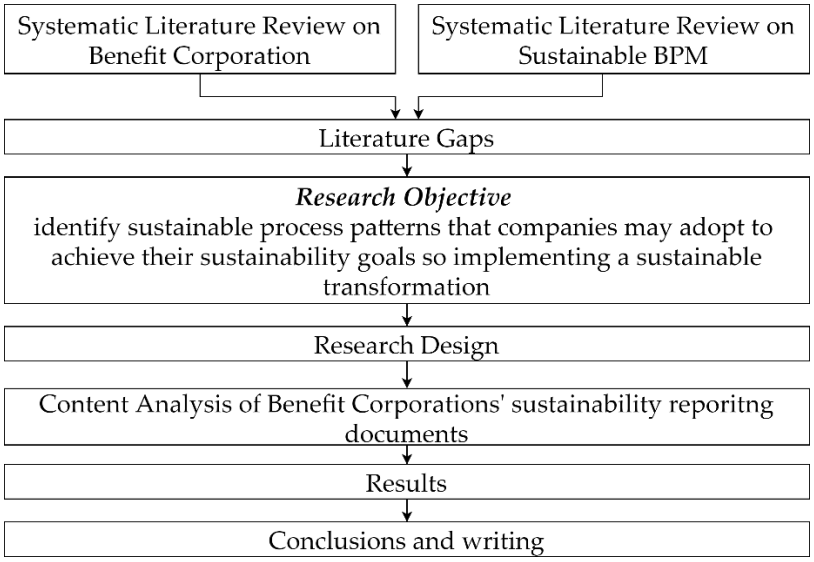

Figure 1.2. Schematic representation of the research phases

1.5 Methodology

In this section, the methodological approaches adopted in each phase of the research are described. First, the rationale for systematically reviewing the existing literature on a topic as well as the phases to conduct the review are discussed; then, the theoretical foundation of content analysis, the research method adopted to analyse the sustainability reporting documents published by benefit corporations, is presented; finally, the pattern approach applied to systematize the results of content analysis and derive green and socially responsible process patterns is described.

1.5.1 Systematic Literature Review

The review of the literature is considered a fundamental research activity (Mulrow, 1994) and it is recognised as the first step of any academic research (Xiao et al., 2019), including the research in the management and organizational field (Denyer et al., 2009). Any knowledge advancement must be built on previous knowledge: to advance knowledge, a researcher should know where the knowledge frontier is. Through a literature review, the researcher understands the breadth and depth of existing body of knowledge and identifies knowledge gap to explore and fill. A literature review is the foundation of academic empirical research as it is commonly used to provide theoretical context of a research, to identify knowledge gap to address in the research and to justify for decisions made in the research design (Xiao et al., 2019).

The Systematic Literature Review (SLR) is a methodology originally developed and adopted in medical science, that, according to Tranfield and Denyer (2003), also produces reliable knowledge in the management field. Like scientific research, literature review should be valid, replicable and reliable. The Systematic Literature Review, by adopting a systematic review process, allows to achieve those features (Denyer et al., 2009; Xiao et al., 2019).

Denyer and Tranfiled (2009) define the Systematic Literature Review as "a methodology that locates existing studies, selects and evaluates contributions, analyse and synthetize data and reports the evidence in such a way that allows reasonably clear conclusions about what is or is not known".

SLR is a replicable, scientific, and transparent research approach that seeks to minimize bias and allows the summarizing of existing information on a phenomenon (the object of the study) in a thoroughly and unbiased manner. In a systematic review, a researcher is required to set specific relevance and quality criteria for the selection and inclusion of studies and to make these criteria transparent to readers. Also, all the steps undertaken to conduct the review have to be recorded in order to allow replicability and make the research process transparent. In regard to findings, SLR provides a dependable and solid evidence of existing knowledge in a field; additionally, if the review identifies knowledge gaps or incongruent findings, these have to be stressed as future research questions (Denyer et al., 2009).

Many scholars have described the systematic literature review process (Jesson et al., 2011; Petticrew et al., 2008; Xiao et al., 2019); in the present dissertation the candidate refers to the systematic literature review process proposed by Tranfield et al. (2003) who, by addressing the methodological challenges related to the application of systematic approach to literature review in management research, developed a guideline for conducting SLR that encompasses five steps (Denyer et al., 2009):

1. Question formulation. As with any research, systematic review starts with the definition of its focus. That means formulating a clear review question that guides the subsequent phases of the review process. In first instance, the review question may be free form, written in natural

language, then it can be structured into an answerable question. This first phase of the systematic review process may be an iterative process of definition, clarification and refinement, as the review question may be modified through the course of the review (and the researcher needs to explicitly state what changes have been made and the rationale for doing so); additionally, Denyer et al. (2009) argue that in management studies, a scoping study could be produced before the systematic review in order to assess the relevance and the size of literature and to delimit the subject area or the topic; a preliminary scoping study should also help to define concepts and determine the review question to be addressed.

2. Studies search. To locate studies to answer the review question, first keywords and search terms need to be identified based on the review question and discussed within the review team. The search string (a combination of keywords with appropriate Boolean operators and conventions) is then defined; at first, the research string is applied to electronic citation database (for instance Scopus). Additionally, other search methods, including hand searching of scientific journals, cross-referencing or even recommendations from experts can be adopted to locate all relevant studies to answer the review question. In addition to academic papers, books, conference papers, also "grey literature" – including technical reports, industrial report, white papers, seminar reports, discussion papers – can be considered. The search strategy (namely the electronic database as well as all the other consulted sources, plus the research keywords and string) adopted to locate studies needs to be reported in detail to ensure the replicability of the search. The output of such a phase is a list of contributions on which the review will be based and on which the review question will be addressed.
3. Study selection and evaluation. To ensure transparency of the review process, a set of inclusion and exclusion criteria have to be identified to assess the relevance and quality of studies found and determine if those studies actually address the review question. Only studies that meet all the inclusion criteria will be incorporated into the review. The selection of study can involve several stages: the reviewer initially applies inclusion and exclusion criteria to abstract and title field of academic papers; then relevant studies will be retrieved for a more detailed evaluation of the full text. The number of studies included and excluded at each stage of the study selection need to be recorded and documented. Also, decisions and reasons justifying the exclusion or inclusion of a study have to be documented. Systematic review exposes studies to a rigorous scrutiny. Whitin the management field, the quality assessment of studies can be conducted by evaluating the fit between each study and research question; furthermore, inclusion or exclusion of studies may also rely on a quality rating of a particular journal, rather than applying any quality assessment criteria to retrieved studies.
4. Analysis and synthesis. The collection of relevant studies obtained in the previous phase is analysed and then synthetized to develop knowledge that is not apparent from reading individual studies. To conduct the analysis of the retrieved studies in an unbiased manner, systematic review employs a data extraction form that includes some general information on each study (title, authors, date of publication and others publication information) and information related to specific features of the studies as the context of the study, the study population if applicable, the methodological approach adopted, the type of study (conceptual,

case study, experimental, review), the broad aim of the study and the research questions it tries to address, the study's key findings.

5. Reporting and use of the results. A two stage reports should be produced to disseminate the results of the systematic review. A first part provides descriptive analysis of the field. This means provide information about authors contributing to the explored field, the age profile of the retrieved studies and so on. The report should also include a thematic analysis of the contributions, that identifies main emerging themes and research gap, as well as open research questions.

1.5.2 Content analysis

Definitions

The following are some of the best known and most popular definitions of Content Analysis (CA):

> *Content analysis is a research technique for the objective, systematic and quantitative description of the manifest content of communication (Berelson, 1952)*
>
> *Content analysis is any technique for making inferences by objectively and systematically identifying specific characteristics of messages (Holsti, 1969)*

Such definitions remark the two fundamental characteristic of content analysis, the systematic and objectivity. First, content analysis must be conducted in a systematic manner, namely applying a defined procedure in a consistent manner so that to minimize bias; the objectivity means that the process of content analysis must be more transparent as possible in order to provide results that are not affected by researcher's subjectivity (Bell et al., 2018).

Content analysis is applicable to any type of communication, not only to written text; indeed, the definitions above do not limit the applicability of CA only to text but all type of communication (i.e., videos, interviews, images, films, picture) can be analysed. Generally, content analysis definitions refer to text as object of the analysis; for instance, Krippendorf (2004) explicitly refers to text by defining CA as "a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use"; however, the phrase "other meaningful matter" included in parentheses indicates that content analysis is intended to be not restricted to written materials, but it includes all data if they speak to someone about a phenomenon.

Content analysis, as a systematic, rigorous approach to analyzing documents obtained or generated in the course of a research, serves the purposes of both quantitative research and qualitative research (White et al., 2006). According to Weber (1990) content analysis goes beyond merely counting words to examining communication as it classifies large amounts of text into an efficient number of categories that represent similar meanings (this approach to content analysis is more in line with a qualitative approach to content analysis).

There is no sharp line dividing qualitative and quantitative content analysis as the goal of content analysis is "to provide knowledge and understanding of the phenomenon under study" (Downe-Wamboldt, 1992); essentially, the main difference between the two approaches is that quantitative content analysis focuses on the manifest, literal meaning of the messages, while the focus of qualitative

content analysis is on the latent meaning of the communication, namely the meaning that is not immediately obvious (Kracauer, 1952).

Content analysis represents one of the most important approaches for the analysis of qualitative material (Smith, 2000) and it is widely used as qualitative research technique (Hsieh et al., 2005).

Regardless of the approach (quantitative or qualitative), all content analysis techniques consist in the decomposition of the communication unit into simpler elements and in the classification of these elements into categorial variables (Rositi, 1988). Content analysis is a research technique used to extract desired information from a body of material (usually verbal and written material) by systematically and objectively identifying characteristic of that material; by means of content analysis a large body of qualitative material can be reduced to a smaller and more manageable form or representation (Smith 2000). The central idea of content analysis methodology is the distillation of words into fewer content-related categories (Cavanagh, 1997); it is assumed that words, phrases and other units or text that are classified into the same category share the same meaning (Cavanagh, 1997; Weber, 1990).

Historical notes

Historically, examples of systematic analysis of texts were found a long time before that content analysis was formally developed as a research method. As argued by Krippendorf (1983), probably the first well-documented quantitative analysis of printed material dates back to the eighteen century. It was developed in Sweden, where the Church was worried that non-religious or unorthodox material might be distributed in the name of the Church. So, analyses of religious texts were commissioned; for instance, a collection of hymns was analysed to determine the frequency of certain words or symbols that could be considered not in line with the teaching of the Church. Content analysis techniques developed at the beginning of 20th century when the diffusion of newspapers as mass medium lead to an increasing interest in the content distributed by those media; journalism schools (born in the same period) were interested in exploring whether newspapers' content was objective, ethical, and edifying. In such a context, quantitative descriptions of the newspapers' content became the focus of early content analysis studies. A second phase in the growth of content analysis took place in between the 1930s and 1940s when social science disciplines such as sociology and psychology gained in importance. Researchers started to analyse mass media content to identify attitudes and social stereotypes. Also, during the Word War II the practical utility of content analysis was demonstrated in studies of propaganda devoted to study the effect of content of mass media on the recipients; in this context, Harold Lasswell began to refine content analysis methods as to sampling, building of categories, assessment of agreement between coders. Since 1940s, content analysis is used in many different disciplines such as political science, psychology, anthropology, educational and literary studies; the adoption of content analysis in different disciplines was accompanied by an increasing criticism towards the mere quantitative approach adopted until then. Scholars like Kracauer (1952) and George (1959) criticized the focus of content analysis on the simple frequency count. As meaning is often complex and context-dependent, some important aspects may be mentioned only once could be more important than those mentioned with higher frequencies. These considerations favoured the development of more qualitative content analysis techniques, i.e., approaches that did not limit to the manifest content and to frequency count, so establishing a dichotomy between quantitative and qualitative variants of the method.

Content analysis process

According to Schreier (2012) qualitative content analysis is systematic, flexible and reduce data. Systematic because it involves a procedure, a sequence of step, to be followed during the analysis; it is also a flexible method as the coding frame must be adapted and tailored so as to fit the material analysed and the research objectives to make the analysis valid, namely able to capture what it sets to capture (Krippendorff, 2004; Neuendorf, 2002); content analysis reduces data as it takes into the account not all the material (be it a document or an interview transcript) but allows to focus the analysis only to those parts of material that are relevant to address the research question.

The definition of research question, the selection and collection of materials to be analysed (unit of analysis) as well as the analysis of the results and the reporting of findings are important parts of all the research, regardless of the research method used. As reported in blue colour Figure 1.3, the process for conducting content analysis includes the following steps (Krippendorff, 2004; Neuendorf, 2002; Schreier, 2012; Smith, 2000; Weber, 1990):

- Building the coding frame or coding schema
- Defining unit of coding
- Testing the coding schema / trying out the coding frame
- Coding the material

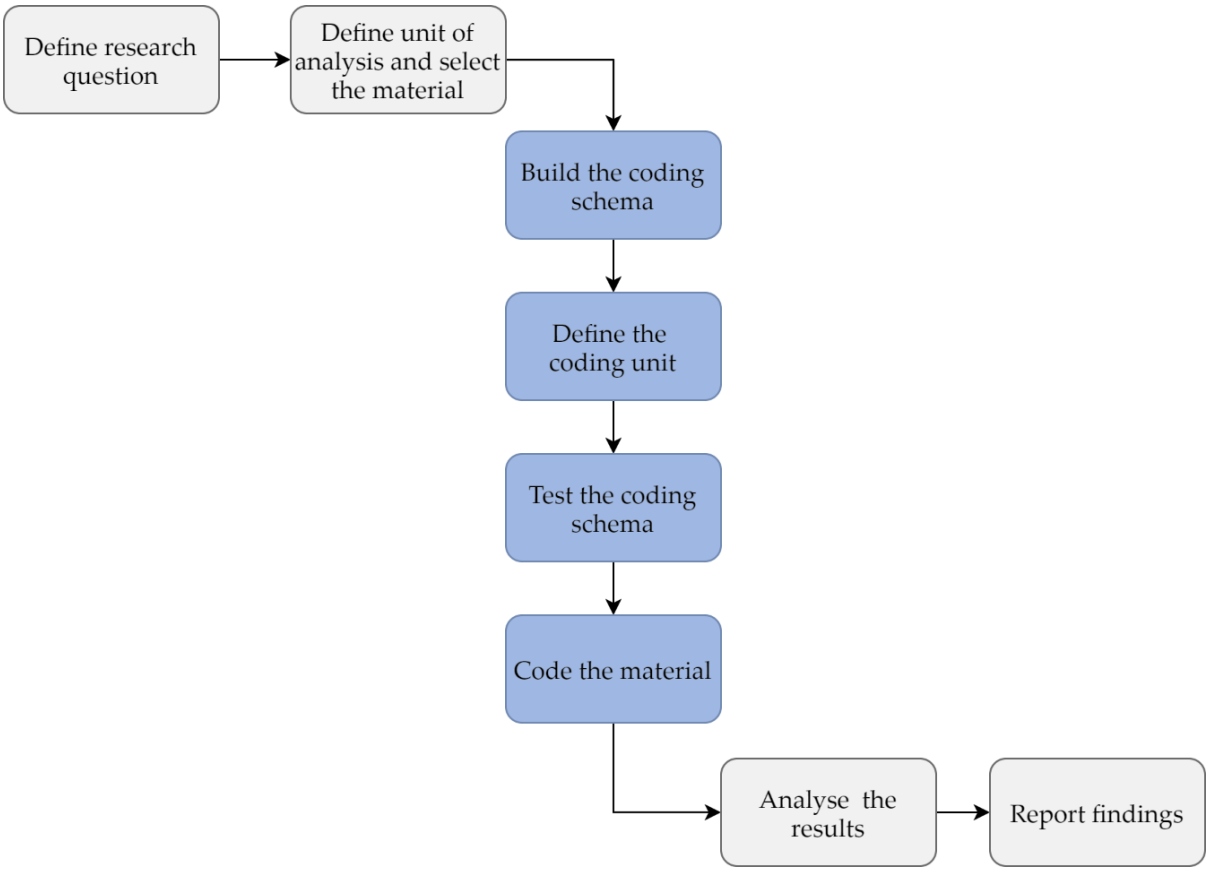

Figure 1.3. Content analysis process

The construction of coding frame (also called coding schema) is at the hearth of the method (Cavanagh, 1997; Schreier, 2012); basically, the coding schema includes the categories or dimensions that specify the information sought by the researcher, the variables to be assessed and the aspects on which the researcher wants to focus. A coding frame is a way of structuring the material and it consists in

categories through which knowledge on the phenomenon under investigation is generated (Cavanagh, 1997). The structure of a coding frame may vary in complexity; the complexity – that is related to the complexity of the research question – depends on the number of dimensions and hierarchical levels considered (Schreier, 2012). Categories are to be mutually exclusive and exhaustive (Krippendorff, 2004; Weber, 1990). Mutual exclusiveness refers to the possibility of a unit of coding, i.e., a segment of text, to be assigned only to one dimension. Categories are exhaustive if each unit of coding of the material is able to be assigned to at least one category of the coding frame. Categories that are the centre of the analysis (Mayring, 2000) can be generated by adopting an inductive or deductive approach. Inductive approach is useful when the knowledge about the phenomenon under investigation is scarce (Elo et al., 2008); in that case, categories are formulated by following a data-driven strategy, namely by working with the material and letting the categories emerge from the material (Mayring, 2000; Schreier, 2012). When adopting deductive category development, the coding frame is derived from theory, prior research, logic or experience; such concept-driven strategy (Schreier, 2012) is applied when the theoretical based definition of the aspects of the analysis already exists (Mayring, 2000). In the qualitative content analysis, the mix of these two approaches (inductive/data-driven strategy and deductive/concept-driven) is frequently used.

Before starting to test the defined coding schema, a phase of unit of analysis definition has to be carried out. In content analysis three type of units are defined: unit of analysis, unit of coding, and context unit. Unit of analysis refers to the largest body of material subjected to the analysis (Smith, 2000); for example, when interviews are the object of content analysis, the unit of analysis is the single interview; in qualitative content analysis, the unit of analysis is typically discussed in the phase of data collection and sampling, so the selection of unit of analysis is often conducted in the early stage of the research and it is a separate step of the research (Schreier, 2012). The unit of coding (or coding unit) refers to part of the material to which the categories or dimensions are applicable (Smith, 2000). Units of coding are those parts of the unit of analysis that can be interpreted in a meaningful way with respect to the categories identified and that fit within one subcategory of the coding frame. In the case of texts and written material, unit of coding, i.e. the basic unit of text to be classified (Weber, 1990) can be a word, a sentence, a paragraph, the entire text, a newspaper column, a response to an interview question (Smith, 2000); the unit of coding can be also defined also by adopting a thematic criterion (Schreier, 2012); in this case, a unit of coding ends and another begins when a topic changes. The division of the material up into smaller units which then will be coded using the coding frame is an important step of content analysis; it helps in the analysis and allows to compare the coding activity conducted by two different coders (Schreier, 2012, p. 128). The context unit is the portion of the surrounding material needed to understand the meaning of a given unit of coding (Schreier, 2012; Smith, 2000); for example, to interpret an answer to an interview question, it may be necessary consider responses to preceding questions (Smith, 2000).

Once the coding schema and the coding units have been defined, the researcher must try out the coding frame on a small sample of the material; this pilot phase or pre-test of the coding schema allows coders to familiarize with the coding schema; it also serves to detect ambiguity problems in the coding frame definition, to identify shortcomings of the coding frame at early stage (Schreier, 2012, p. 147) such as low exhaustiveness or overlapping among the categories of coding schema in order to adjust the coding schema before coding material at large scale. During such pilot phase, the researcher should also assess reliability and validity as characteristic of quality of the content analysis. Reliability is a criterion used

to evaluate the quality of a research method such as a survey, a test, or a coding frame in the case of content analysis. When assessing the reliability of a coding schema, two different forms of reliability can be assessed: stability and reproducibility (Krippendorff, 2004; Weber, 1990). Stability refers to the extent that coding results remain stable over the time when the same coder repeats the analysis in the same conditions. Reproducibility refers to the extent to which two or more coders classify the material in the same manner working independently (also called inter-coder reliability). Such a type of reliability, considered stronger than the stability, is assessed by measuring the coefficient of agreement or other more complex coefficients (such as Scott's pi, Cohen's kappa and Krippendorff's alpha) described in literature (Krippendorff, 2004; Neuendorf, 2002).

Another aspect that characterizes the quality of the coding frame is related to the validity. A coding frame is considered as valid to the extent that the categories adequately represent the concepts that the researcher intends to investigate. In qualitative content analysis face validity and content validity have to be considered (Schreier, 2012). Face validity refers to the extent to which the coding frame gives the impression of measuring what it is supposed to measure; Neuendorf (2002, p. 115) describes such a concept with the acronym WYSIWYG (What You See Is What You Get). Content validity refers to the extent that a coding schema covers all dimensions of a concept. To assess content validity of the coding schema, an expert of the domain of investigation who is familiar with the concepts addressed by the coding frame should assess it to verify that the chosen categories adequately represent the concepts.

1.5.3 Pattern-based approach

Definitions

The results of content analysis will be analysed and synthetized by adopting the pattern-based approach with the aim to derive green and social process patterns.

In general, a pattern is "an abstraction from a concrete form which keeps recurring in specific non-arbitrary contexts" (Riehle et al., 1995). The concept of pattern was introduced by Alexander (1977) in the architectural domain; Alexander (1977) observed that when people design buildings, they use predefined design blocks (the patterns) and argued that "each pattern describes a problem which occurs over and over again in an environment, and then describes the core of the solution to that problem, in such a way that you can use this solution a million times over, without ever doing it the same twice". The pattern is indeed defined as "a three-part rule, which expresses the relation between a certain context, a problem and a solution" (Alexander, 1979).

The pattern approach has also been widely adopted in the software engineering field. It gained momentum with the publication of design patterns by Gamma et al. (1994) whose aim was to capture the experience in designing object-oriented software and develop design patterns to provide reliable solutions for recurring problems when designing software.

A fundamental characteristic of patterns is that they are practice-oriented (Winter, 2009); this means that patterns are obtained by a careful examination of the practices carried out by organizations and are based on proven, successful practices; only practical experiences that have an acknowledged usefulness turn into a pattern (Fowler, 1996). In other words, a pattern is an approach to solve problems that is proven to work in practice as it captures knowledge and best practices (Stephenson et al., 2007). The practice-oriented features of patterns and their practical relevance should be documented with concrete and verifiable application examples (Winter, 2009).

The advantage of patterns is that they provide operational guidelines which are flexible enough to be applied in different contexts (Forster, 2006). If properly described, patterns provide reusable components and solutions that, being useful in a context, may be helpful in another similar circumstance (e.g., to solve a similar problem in another context).

Besides reusability and practice-oriented, another fundamental features of patterns is that they are generally formulated in natural language (Winter, 2009) and are textual description of best practices collected by domain experts (Monteiro et al., 2012).

As to pattern format, it is common opinion that the pattern template has three essential parts: a statement of the context in which the pattern is useful, the problem that the pattern addresses or mitigates, and the solution that describes how the pattern could solve or mitigate the problem (the solution can also be explained through a simple graphical representation) (Fowler, 1996; Missaoui et al., 2020). In addition to these core attributes, the pattern notation format includes other attributes: name, examples, and effect (Table 1.2). The attribute name clearly and uniquely identifies a pattern and should meaningfully and concisely characterize the pattern; the name of pattern also facilitates its dissemination and usage. An essential part of an adequate pattern description is the examples which document the practical application of the pattern solution in the real context. The attribute effect expresses the results and the impact of pattern implementation in real context, e.g., in a business process. Such effect could be represented by a purely informal description of the improved context; if applicable, performance indicators measuring the resulting change of pattern implementation could be included.

Table 1.2. The attributes for describing a process pattern [form: (Becker et al., 2014; Falk et al., 2013; Forster, 2006)]

Attribute	**Description**
Name	A clear, concise, and unique identification of pattern
Problem	A detailed formulation of the issue that is addressed by the pattern
Context	A description of the characteristics and conditions that should be manifested to successfully use the pattern
Solution	A list of steps and activities which must be executed to implement the pattern; it is the core element of the pattern; a simple graphical representation could be included to explain the solution
Examples	One or more illustrative applications of the pattern in real contexts
Effect	An illustration of the impact deriving from applying the pattern as well as performance indicators to assess it

Patterns and business processes

In the field of Business Process Management, the pattern approach has been applied in several areas. Initially, the pattern approach was adopted to describe the logic behind the workflow management systems. The Workflow Pattern Initiative, a well-known initiative, was undertaken by Eindhoven University of Technology and Queensland University of Technology with the aim to provide conceptual basis for process technology, by examining different perspectives (control flow, data, resource, and exception handling) that need to be supported by a workflow language or a business process modelling language. Pattern-based approach was adopted by van der Aalst et al. (2000) to address the control-flow perspective at basis of the workflow functionality which describes activities and their execution through different constructors, e.g., sequence, split, parallelism and joint synchronization. A series of basic control flow patterns (sequence, parallel split, simple merge, synchronization, exclusive choice) as well as more advanced control flow patterns (e.g., advanced branching, multiple instance pattern, state-based pattern) were described[2]. Russel et al. (2005) dealt with data perspectives at the basis of workflow

[2] For more details, please refer to http://www.workflowpatterns.com/patterns/control/

systems by providing workflow data patterns that aim to capture the various ways in which data is represented and utilised in workflows. Additionally, workflow resource patterns, that aim to capture the various ways in which resources are represented and utilized in workflows, were derived by Russel et al. (2005). In both cases, pattern-based approach was adopted as it allowed to illustrate data and resource-related concept in the workflow systems in a language independent format to ensure that the identified patterns might support a variety of workflow management systems.

The pattern-based approach is gaining momentum in Business Process Management as an approach for improving business processes; the "act of improvement" i.e., the transformation from the as-is process model to a desired to-be process, is a crucial and a value-adding phase in a BPM project (Dumas et al., 2013; Forster, 2006). However, the existing body of knowledge on BPM agrees that the process improvement phase lacks sufficient supporting approaches as academic research mainly focuses only on the description of the process before and after the improvement and redesign (as-is process and to-be process) overlooking the description of how the business process is improved (Forster, 2006). To close this gap, the pattern-approach is proposed as suitable and promising approach to support process redesign and improvement that practitioners and business process analysts may adopt to effectively design and redesign business processes (Falk et al., 2013; Missaoui et al., 2018) and deploy BPM solutions (Medicke et al., 2004).

Forster (2006) argues that advantage of pattern-based approach in the business process improvement is that such an approach allows process analysts to adopt practical solutions and operational guidelines provided by pattern instead of working on a solution for each instance of a problem.

Rosemann (2020) suggests pattern-based approach as a suitable method to for the exploration of opportunity points in the explorative BPM approach. The author points out that exploitative BPM, i.e., the reactive approach that identifies process weaknesses and try to improve them, is a mature discipline. According to Rosemann (2020), several well-defined methods and techniques are indeed available: approaches as lean management, six sigma help address processes' weaknesses and improve process performance (time, costs, and quality). In contrast, explorative BPM, i.e., the approach that explores opportunity points and translate them into process improvements, is still in infancy. Methods to explore opportunity points are still absent in the practice and academic studies. As suggested by Rosemann (2020), pattern-based approach may support explorative BPM. For example, Roseman (2020) analyses organizations with expanding revenue models (e.g., Amazon, Uber) and derives seven explorative process design patterns (process generalization, process expansion, process differentiation, process initiation, process commercialization, process integration, and process attention) that help to create new sources of revenue for existing business processes.

Pattern-based approach has also been adopted in the emergent field of Sustainable Business Process Management. In particular, pattern-based approach is used to describe appropriate solutions for the environmental improvement of business processes (Nowak et al., 2011) as well as to embed social sustainability in business processes (Schoormann et al., 2019)

The attention towards pattern-based approach in BPM field is demonstrated by two different studies which attempted to review and categorize the existing studies on patterns. First, Becker et al.,(2014) conducted a systematic review on business process patterns and developed a criteria catalogue for comparing different business process pattern approaches; the criteria catalogue has three classes of criteria: general criteria (regarding the type of pattern, its origin, its scope), representational criteria

(regarding the notation and formalization of the pattern) and feature criteria (addressing the adaptability of the pattern, the existence of guidelines and tools to make it usable in the practice). Fellmann et al. (2019) categorized existing business process pattern literature and developed an online repository of process pattern literature to facilitate the work of analysts in search of appropriate patterns.

2. *Sustainable Business Process Management: a systematic literature review*

Abstract

Sustainable Business Process Management (S-BPM) recently emerged as a research stream of Business Process management (BPM), a discipline that supports organizations in the design, monitoring, improvement and redesign of business processes. In addition to traditional performance (i.e. time, quality, cost and flexibility), in the case of S-BPM the environmental and social performance are considered to properly manage business processes along the entire life cycle. The study systematically reviews extant academic literature on S-BPM with the aim to critically examine methods and approaches that can be adopted to embed sustainability in the analysis, design, and redesign of business processes.

Keywords: S*ustainable Business Process Management, systematic literature review, environmental and social sustainability*

2.1 Introduction

Sustainability – commonly declined through the so-called Triple Bottom Line approach (Elkington, 1997) – envisages three dimensions of sustainability: economic sustainability (profit), environmental sustainability (planet) and social sustainability (person). Organizations that intend to pursue sustainability and succeed in the long run should focus on all these three dimensions of sustainability which should be always considered and addressed in an integrated way (Savitz, 2013). The growing and by now inevitable companies' attention towards sustainability implies to consider sustainability as a crucial emergent dimension in the management of business processes. Sustainable Business Process management (S-BPM) emerged in the last few years as a new stream of Business Process Management – the managerial discipline that supports organizations in the analysis, redesign, implementation, and monitoring of business processes (Dumas et al., 2013; Weske, 2007) – to take into consideration the environmental and social sustainability performance of business processes, in addition to traditional performance, namely time, costs, quality, and flexibility (Magdaleno et al., 2017; Seidel et al., 2012; Couckuyt, 2018).

The addition of sustainability as an important emergent dimension in the management of business processes has implications for researchers in the field of BPM as well as for managers and practitioners that adopt BPM methods, frameworks and approaches to design and redesign business processes.

In this paper, a systematic literature review aimed to understand how and to what extent the sustainability has affected Business Process Management discipline has been carried out.

The literature review, conducted by adopting the systematic approach proposed by Tranfield and Denyer (2003), intends to critically examine methods and approaches proposed in the field of S-BPM as well as possible gaps and open research questions. From a managerial standpoint, the paper provides managers and businesses with an overview of methods, approaches and techniques, that should be adopted to successfully embed environmental and social issues in the management of business processes.

After a presentation of the concept of business process and an overview on the BPM discipline, the paper discusses the phases and the results of the systematic literature review. Finally, conclusions and future research avenues are drawn.

2.2 Background: Business Process Management

A business process is defined as any activity or group of activities that take an input, add value to it, and provide an output to an external or internal customer (Harrington, 1991). To provide outputs, a business process uses organization's resources and multiple capabilities that belong to different organizational units. Also, business processes repeat over time: a single execution of all the activities of a process is defined as a process instance.

Business processes can be viewed as the way organizations accomplish their goals. Indeed, a business process refers to a set of interdependent activities that, by adopting organizations' resources, transform an input in an output. In particular, the process' output represents the goal that an organization accomplishes when implementing a specific input-output transformation. Such a conceptualization stresses a connection between business processes and the organizational outcomes (Crowston, 2000).

Business processes are at the basis of the management of all organizations: they govern the life of any organization and represent the way organizations accomplish desired goals (Crowston, 2000).

To succeed in the more and more competitive market, businesses have to continuously improve their business processes (Raynus, 2016). This is the objective of BPM that affirmed as a synthesis and an evolution of two antecedent movements: (i) the quality movement (Deming, 1953) and (ii) Business Process Reengineering (Dumas et al., 2013; Hammer, 2015). The quality movement (Deming, 1953) focused on the continuously improvement of quality of operations in terms of variation of the performance and looked at isolate problems and not to overall business processes; Business Process Reengineering (BPR) (Davenport et al., 1990; Hammer, 1990; Hammer et al., 1993) looked at the redesign of business processes, addressing large scale end-to-end processes; however, BPR lacked the continuous dimension of quality improvement as it focused on sporadic and episodic process redesign; also, BPR adopted a radical approach to process redesign in the sense that a new design for a business process had to overhaul the way the process was initially organized (Hammer, 1990).

BPM envisages some phases that are cyclically executed and that are effectively summarized in the BPM lifecycle (Dumas et al., 2013):

- *Process identification and discovery.* In this phase the business problem is posed and the business processes relevant to the problem are identified. The current state (as-is) of the process is analytically studied; to that end, data and information on the process are collected through documentation analysis, interviews with the actors of the process and direct observation. The as-is process is then documented, typically through appropriate process modelling techniques. As to the process modelling techniques, the Business Process Model and Notation (BPMN) which allows the hierarchical structuring of the process and its description at different levels of decomposition, is widely used and considered a de-facto standard.
- *Process analysis.* Critical issues and inefficiencies associated to the as-is process are detected; output of this phase is a collection of criticalities to be addressed.
- *Process redesign*. In this phase, different redesign strategies aimed to solve and overcome the process's inefficiencies are proposed, discussed and finally implemented; they may include the

definition of a new alternative process workflow, the introduction of new roles and responsibilities and the reassignment of process' activities to other actors of the process, the introduction of new coordination mechanisms allowing to manage the interdependence between process' activities (Malone et al., 1994), and the introduction of digital technologies to innovatively and more effectively manage the process. The redesign strategies may be combined, and multiple to-be alternatives proposed; these alternatives are then simulated on some process pilot instances and the most promising one, i.e., that better meets the performance objectives, becomes the to-be process.

— *Process implementation.* The to-be process is thus configured (this implies organizational changes as well as the deployment of IT systems or the reconfiguration of the existing ones) and executed.

— *Process monitoring and control.* Once the redesigned process is running, relevant data are collected and analysed to determine how well the process is performing. Bottlenecks, non-compliance, recurrent errors or deviations with respect to the intended behaviour are identified and corrective actions are undertaken. New issues may arise, requiring the cycle to be repeated on a continuous basis.

BPM methods and techniques allow an analytic and incremental approach to process redesign: analytic because changes introduced in the to-be process are the results of an in-depth analysis of the as-is process; incremental because the changes introduced in the to-be process do not radically modify the way process' actors operate, rather modify and improve only those parts of the process that emerged as critical in the process analysis. Process redesign is a crucial part of BPM discipline and a wide range of methods and approaches supporting it exists. As to the process redesign approach, the ambidextrous BPM (Rosemann, 2014) is an innovative approach to process redesign which combines process exploitation and process exploration: the former is the traditional reactive and problem-driven BPM approach that focuses on the process, often represented by a process model, identifies problems and, reactively and incrementally, tries to improve it overcoming the identified problems; the latter (process exploration) is the proactive and opportunity-driven BPM approach that looks outside the organization to identify trends such as emerging technologies that are able to improve the process and translates those opportunities into new processes.

Existing process redesign methods (i.e., problem-based process redesign methods like six sigma and lean management, the process model canvas, the process benchmark) generally only describe the situation before and after the process improvement and redesign, while the act of improvement seem to remain a black box (Forster, 2006; Zellner, 2011) as it lacks procedural and ontological guidance on how derive to-be process alternatives and create the new redesigned to-be process (Gross et al., 2021). Pattern-based approach (Falk et al., 2013; Missaoui et al., 2018) and business process design space (Gross et al., 2021) have been suggested as methods to systematically support the business process redesign, by overcoming the aforementioned limitations and challenges associated with the to-be process creation.

Basically, BPM focuses on the design and redesign of business processes that are effective and efficient in terms of costs, time, quality and flexibility (Reijers et al., 2005). Recently, sustainability was added as an important dimension in the management of business processes and a new stream – Sustainable

Business Process Management (S-BPM) – emerged (Magdaleno et al., 2017; Seidel et al., 2012; Couckuyt, 2018).

Organizations have to be aware of the business processes they execute to realize their outcomes and achieve their goals. To that end, Business Process Reference Models (BPRM), namely standardized descriptions of processes developed on the basis of best practices and universally applicable, have been developed. Among them, the APQC Process Classification Framework (PCF) is one of the most widely used BPRM. The framework was developed in 1992 by the American Productivity and Quality Centre (APQC), a foremost authority in benchmarking, best practices, process and performance improvement, and it is now update to the version 7.3.0 (APQC, 2022). The PCF is a taxonomy of business processes that allows organizations to objectively track and compare their performance internally and externally with organizations from any industry. The framework is designed as a general standard to be customized for use in any organization; this means that the PCF does not list all processes within a specific organization, and every process listed in the framework could not exist in all organizations. In addition to the more general cross-industry PCF, some industry-specific PCFs tailored to the need of specific industries (such as aerospace and defence, airline, automotive, banking, city government among others) have also been developed.

The PCF includes a description of 13 categories of business processes, classified as operating or management and support service processes. Figure 2.1 reports the cross-industry PCF and lists the business processes' category.

Figure 2.1. Cross-industry Process Classification Framework [source: (APQC, 2022)*]*

2.3 Research Methodology

In this section the steps of SLR, as they were conducted to analyse the existing literature on S-BPM, are detailed. As mentioned, the methodological approach suggested by Tranfield and Denyer (2003) was adopted (for a presentation of the approach please refer to Section 1.5.1).

Question formulation

The aim of the systematic review is to investigate how and to what extent sustainability, with respect to both the social and environmental dimension, is considered within the literature on Business Process Management. In particular, the goal of the review is to critically analyze methods, approaches, and frameworks developed to incorporate sustainability in the management of business processes.
The review question has been formulated as follows:

> *How and to what extent is sustainability (i.e. environmental and social issues) considered in Business Process Management? Which are methods, approaches, technologies, and capabilities that allow to incorporate environmental and social sustainability in the management of business processes?*

Studies search

To address the review question, a list of keywords was identified and combined with appropriate Boolean operators; three different research stings were obtained. All the research strings include the term Business Process Management (and the relative acronym BPM) to cover the specific domain of investigation. The first research string combines the concept of BPM with the generic concept of sustainability, whereas the other two research strings combine the concept of BPM with more specific concepts, respectively related to environmental and social dimension of sustainability. The identified research strings constitute the search queries to be applied in the multidisciplinary citational database Scopus. The search queries were searched into the Abstract/Keyword/Title section of the database. The research was limited to documents written in English and published up to July 2022.
Table 2.1 shows the complete search queries applied to the Scopus database and the number of retrieved studies for each query.

Table 2.1. Sustainable business process management – search queries

Scopus search query	Research string	Retrieved documents
#1	((TITLE-ABS-KEY ("sustainable Business Process Management" OR "sustainable BPM") OR TITLE-ABS-KEY (sustainab* AND "Business Process Management"))) AND (LIMIT-TO (LANGUAGE, "English"))	191
#2	((TITLE-ABS-KEY ("green Business Process Management" OR "green BPM") OR TITLE-ABS-KEY ("environmental sustainability" AND "Business Process Management")) AND (LIMIT-TO (LANGUAGE, "English"))	45
#3	((TITLE-ABS-KEY ("social Business Process Management" OR "social BPM") OR TITLE-ABS-KEY ("social sustainability" AND "Business Process Management")) AND (LIMIT-TO (LANGUAGE, "English"))	67

Study selection and evaluation

All the collected documents were recorded into an Excel database. A data-cleaning operation was carried out to identify overlaps between results retrieved from the queries: 24 duplicated documents were identified between the first and the second query, and only one overlapped document was identified between the first and third query. A total number of 25 documents were discarded after the data cleaning phase. A screening of the remaining documents was conducted by reading the abstracts

so as to evaluate the relevance of retrieved studies. To this end, some selection criteria were identified and applied. Exclusion criteria allowed to eliminate those studies that did not focus on BPM and sustainability (N=168) as well as those studies in which the social attribute is related to the adoption of social software in BPM (N=66). The remaining 44 documents were all retrieved in full-text; also, two contributions were discarded after reading the full-text, as they did not actually deal with sustainability and BPM; snowball searching (a procedure consisting in look back through the article's references) was also carried out to find additional relevant publications which are in the reference list of the retrieved studies but are not indexed in the Scopus database. In particular, the reference list of recent systematic review on the topic were screened. A total number of five studies were identified through this operation and added to the final database.

Figure 2.2 reports the systematic literature review process and Table 2.2 lists all studies included in the review.

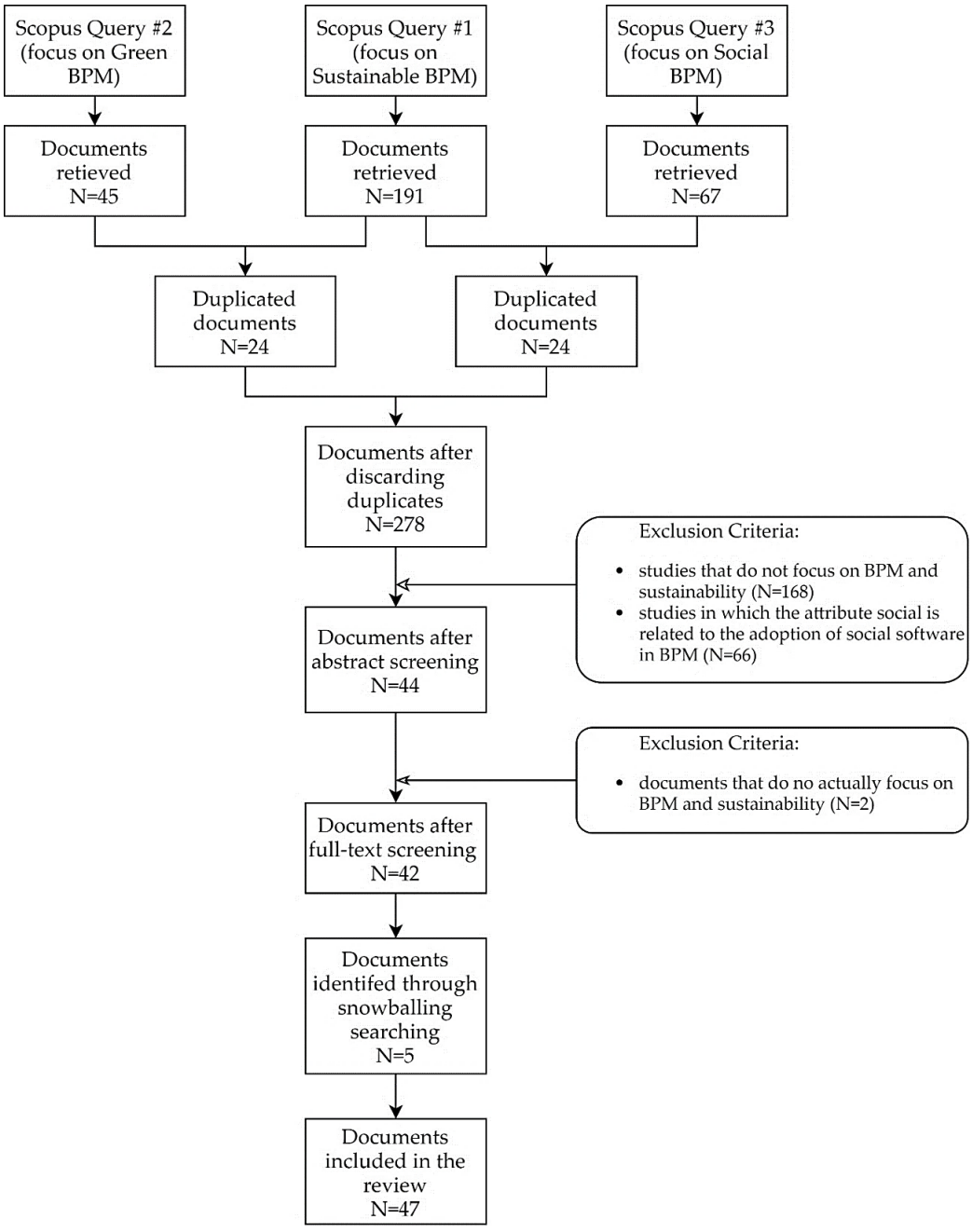

Figure 2.2. Sustainable business process management – systematic literature review process

Table 2.2. Sustainable business process management – final dataset of academic studies

ID	Authors	Title	Year	Source title
1	Klessascheck F.	Towards a Framework for Business Process Sustainability Analysis	2022	CEUR Workshop Proceedings
2	Couckuyt D., Van Looy A.	An exploration of green business process maturity based on ecolabels	2021	Business Process Management Journal
3	Couckuyt D., Van Looy A.	An empirical study on Green BPM adoption: Contextual factors and performance	2021	Journal of Software: Evolution and Process
4	Fritsch A.	Towards a Modeling Method for Business Process Oriented Organizational Life Cycle Assessment	2020	ACM International Conference Proceeding Series
5	Couckuyt D., Van Looy A.	A systematic review of Green Business Process Management	2020	Business Process Management Journal
6	Gohar S.R., Indulska M.	Environmental Sustainability through Green Business Process Management	2020	Australasian Journal of Information Systems
7	Couckuyt D., Looy A.V.	Green BPM as a business-oriented discipline: A systematic mapping study and research agenda	2019	Sustainability (Switzerland)
8	Hernández González A., Calero C., Pérez Parra D., Mancebo J.	Approaching Green BPM characterisation	2019	Journal of Software: Evolution and Process
9	Schoormann T., Kutzner K., Pape S., Knackstedt R.	Elevating social sustainability in business processes: A pattern-based approach	2019	40th International Conference on Information Systems, ICIS 2019
10	Lübbecke P., Goswami A., Fettke P.	A method for ecological process optimization based on compliance checking	2018	Proceeding - 2018 20th IEEE International Conference on Business Informatics, CBI 2018
11	Schoormann T., Behrens D., Knackstedt R.	Sustainability in Business Process Models: A Taxonomy-Driven Approach to Synthesize Knowledge and Structure the Field	2018	ICIS 2017: Transforming Society with Digital Innovation
12	Couckuyt D.	An overview of challenges and research avenues for green business process management: Exploring the concept of a circular economy	2018	Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)
13	Couckuyt D., Van Looy A., De Backer M.	Sustainability performance measurement: A preliminary classification framework of models and indicators	2018	Lecture Notes in Business Information Processing
14	Lübbecke P., Fettke P., Loos P.	Towards guidelines of modeling for ecology-aware process design	2018	Lecture Notes in Business Information Processing
15	Mancebo J., Garcia F., Pedreira O., Moraga M.A.	BPMS-Game: Tool for business process gamification	2017	Lecture Notes in Business Information Processing
16	Magdaleno A.M., Duboc L., Betz S.	How to incorporate sustainability into business process management lifecycle?	2017	Lecture Notes in Business Information Processing
17	Lübbecke P., Fettke P., Loos P.	Sustainability patterns for the improvement of IT-related business processes with regard to ecological goals	2017	Lecture Notes in Business Information Processing
18	Maciel, João Carlos	The Core Capabilities of Green Business Process Management – A Literature Review	2017	International Conference on Wirtschatsinformatik
19	Lubbecke P., Fettke P., Loos P.	Towards ecological workflow patterns as an instrument to optimize business processes with respect to ecological goals	2016	Proceedings of the Annual Hawaii International Conference on System Sciences
20	Jakobi, T., Castelli, N., Nolte, A., Schönau, N., Stevens, G.	Towards collaborative green business process management as a conceptual framework	2016	Advances and New Trends in Environmental and Energy Informatics
21	Pádua S.I.D., Jabbour C.J.C.	Promotion and evolution of sustainability performance measurement systems from	2015	Business Process Management Journal

ID	Authors	Title	Year	Source title
		a perspective of business process management: From a literature review to a pentagonal proposal		
22	Lubbecke P., Reiter M., Fettke P., Loos P.	Simulation-based decision support for the reduction of the energy consumption of complex business processes	2015	Proceedings of the Annual Hawaii International Conference on System Sciences
23	Gohar S.R., Indulska M.	Business process management: Saving the planet?	2015	ACIS 2015 Proceedings - 26th Australasian Conference on Information Systems
24	Opitz N., Krüp H., Kolbe L.M.	Environmentally sustainable business process management - Developing a green BPM readiness model	2014	Proceedings - Pacific Asia Conference on Information Systems, PACIS 2014
25	Reiter M., Fettke P., Loos P.	Towards green business process management: Concept and implementation of an artifact to reduce the energy consumption of business processes	2014	Proceedings of the Annual Hawaii International Conference on System Sciences
26	Opitz N., Krüp H., Kolbe L.M.	Green business process management - A definition and research framework	2014	Proceedings of the Annual Hawaii International Conference on System Sciences
27	Brocke J.V., Seidel S., Recker J.	Green business process management: Towards the sustainable enterprise	2013	Green Business Process Management: Towards the Sustainable Enterprise
28	Wesumperuma A., Ginige A., Ginige J.A., Hol A.	Green Activity Based Management (ABM) for organisations	2013	Proceedings of the 24th Australasian Conference on Information Systems
29	Nowak A., Leymann F.	Green business process patterns - Part II	2013	Proceedings - IEEE 6th International Conference on Service-Oriented Computing and Applications, SOCA 2013
30	Nowak A., Binz T., Leymann F., Urbach N.	Determining power consumption of business processes and their activities to enable green business process reengineering	2013	Proceedings - IEEE International Enterprise Distributed Object Computing Workshop, EDOC
31	Seidel S., Recker J.	Implementing green business processes: The importance of functional affordances of information systems	2012	ACIS 2012: Proceedings of the 23rd Australasian Conference on Information Systems
32	Opitz N., Erek K., Langkau T.F., Kolbe L.M., Zarnekow R.	Kick-starting green business process management - suitable modeling languages and key processes for green performance measurement	2012	18th Americas Conference on Information Systems 2012, AMCIS 2012
33	Stolze C., Semmler G., Thomas O.	Sustainability in business process management research - a literature review	2012	18th Americas Conference on Information Systems 2012, AMCIS 2012
34	Hoesch-Klohe K., Ghose A.	Environmentally Aware Business Process Improvement in the Enterprise Context	2012	Harnessing Green It: Principles and Practices
35	Recker, Rosemann, Hjalmarsson, and Mikael Lind	Modeling and Analyzing the Carbon Footprint of Business Processes	2012	Green Business Process Management: Towards the Sustainable Enterprise
36	Seidel S., Recker J., Vom Brocke J.	Green business process management	2012	Green Business Process Management: Towards the Sustainable Enterprise
37	Houy C., Reiter M., Fettke P., Loos P., Hoesch-Klohe K., Ghose A.	Advancing business process technology for humanity: Opportunities and challenges of Green BPM for sustainable business activities	2012	Green Business Process Management: Towards the Sustainable Enterprise
38	Nowak A., Binz T., Fehling C., Kopp O., Leymann F., Wagner S.	Pattern-driven green adaptation of process-based applications and their runtime infrastructure	2012	Computing

ID	Authors	Title	Year	Source title
39	Wesumperuma A., Ginige A., Ginige J.A., Hol A.	A Framework for Multi-dimensional Business Process Optimization for GHG Emission Mitigation	2011	Australasian Conference on Information Systems,
40	Nowak A., Leymann F., Schumm D.	The differences and commonalities between green and conventional business process management	2011	Proceedings - IEEE 9th International Conference on Dependable, Autonomic and Secure Computing, DASC 2011
41	Hoesch-Klohe K., Ghose A.	Business process improvement in Abnoba	2011	Lecture Notes in Computer Science
42	Nowak A., Leymann F., Schleicher D., Schumm D., Wagner S.	Green business process patterns	2011	ACM International Conference Proceeding Series
43	Houy C., Reiter M., Fettke P., Loos P.	Towards Green BPM - Sustainability and resource efficiency through business process management	2011	Lecture Notes in Business Information Processing
44	Lan, Yi-Chen	Reengineering a Green Business	2011	International Journal of Green Computing
45	Ghose A., Hoesch-Klohe K., Hinsche L., Le L.-S.	Green business process management: A research agenda	2010	Australasian Journal of Information Systems
46	Hoesch-Klohe K., Ghose A.	Carbon-aware business process design in Abnoba	2010	Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)
47	Hoesch-Klohe K., Ghose A., Lê L.-S.	Towards green business process management	2010	Proceedings - 2010 IEEE 7th International Conference on Services Computing, SCC 2010

Studies analysis and synthesis

A data extraction form was built to analyse the final dataset. It includes bibliographic information, namely authors, title, year of publication, source title (the name of journal or the name of conference proceeding in which the study is published) and the document type (if the study is an article, a conference paper, a book or a book section). It also includes some general dimensions: sustainability dimensions (i.e., the social or environmental dimensions of sustainability dealt with in the paper), the type of study (if the study addresses the topic from a theoretical/conceptual perspective or form a more practical perspective), the aim of the paper, the methodology adopted in each study (e.g., case study, survey, literature review). Additionally, dimensions of analysis related to the six core elements of BPM (Rosemann et al., 2010) were considered:

— *Strategic alignment* refers to the tight linkage of organizational priorities and enterprise processes enabling continual and effective action to improve business performance; this linkage is bidirectional, that is the design and improvement of business processes have to be derived directly from organization's strategy (process improvement plan) and the process performance and capabilities should be incorporated in the organizational strategy. Process outputs and the related key performance indicators represents a valuable source to translate organization's strategic objectives to process-specific goals.

— *Governance* refers to an appropriate and transparent accountability in terms of roles and responsibilities for the adoption of a BPM approach. A core elements of BPM governance is the definition of roles and responsibilities to effectively implement a process approach; also, the decision-making process and the establishment of reward and remuneration mechanisms to facilitate the process approach are encompassed in the governance.

— *Methods* refers to tools and techniques used to support process management in all phases of the BPM lifecycle; the capability areas envisaged for this core element are associated with the BPM lifecycle phases. So, the element includes all techniques and tools used to identify the current (as-is) and develop future (to-be) process, to support process execution and monitoring as well as all methods to facilitate process enhancement and innovation.
— *Information technology* refers to software, hardware, and information systems that enable and support process activities; similarly to the Method dimension, the IT component focuses on the specific needs of each process lifecycle and provides automated or semi-automated tools to support each stage of the BPM lifecycle.
— *People* refers to individuals or group of individuals who apply process management skills and knowledge to improve business performance; the assessment of process management knowledges and skills of people and the impact these have on business process outcomes is a key capability area. The commitment of the organization to implement BPM education programs devoted to developing and maintaining process management skills and knowledge is also included in this element.
— *Culture* refers to collective values, beliefs and attitude on process management of the members of the organization; the element is strictly connected to process thinking within the organization and depends on how and to which extent members of the organization adopt the process view to carry out their work. Also, the level of commitment and attention to process management by leadership, as well as the responsiveness of the organization to process change, namely the capacity of the organization to accept and adapt to process change, are capability areas associated to this element.

All the retrieved academic studies were analysed under the lens of such a framework to figure out to what extent elements were considered when also the sustainability dimension is considered within BPM studies. The adoption of the framework also supported the identification of gaps, namely those aspects that, although fundamental for the successful implementation of BPM, were not yet investigated in the literature. Table A in Appendix reports the classification of the retrieved studies based on the aforementioned dimensions of analysis.

2.4 Findings

In this section, the academic knowledge on Sustainable Business Process management is presented, and main research gaps are discussed.

2.4.1 Bibliometric analysis

The analysis of the dataset shows that studies selected to address the review question are published in between 2010 and 2022. S-BPM is a recent stream in the literature. Figure 2.3 show the distribution of the contributions over the years. Also, the distribution of the contributions according to the document type reveals that only ten contributions are published as journal article (which generally presents more mature results); the majority of studies (about the 70%) are published as conference papers (Figure 2.4). This confirms that the field of S-BPM is still at early stage.

Furthermore, by examining the journals in which the ten contributions are published, it can be seen that they are published in five different journals (Table 2.3) and one third of the articles appears in “Business

Process Management Journal", a top-quality journal in the business, management and accounting subject area.

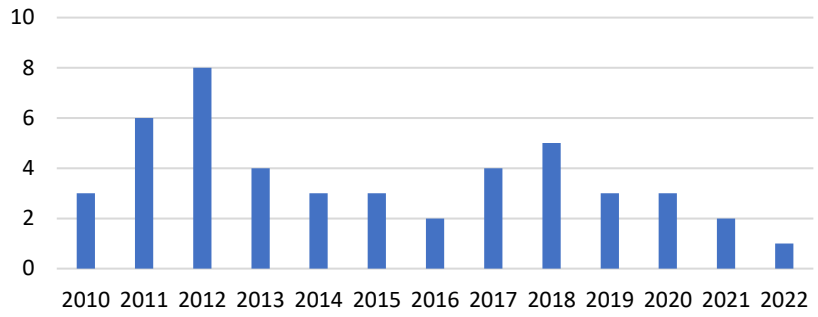

Figure 2.3. Sustainable business process management – distribution of studies over the years

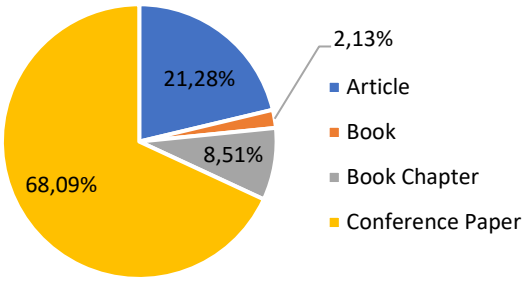

Figure 2.4. Sustainable business process management – distribution of studies per document type

Table 2.3. Sustainable business process management SLR – number of articles per journal

Source title (journals)	Number of articles
Business Process Management Journal	3
Australasian Journal of Information Systems	2
Journal of Software: Evolution and Process	2
International Journal of Green Computing	1
Computing	1
Sustainability (Switzerland)	1

Regarding to scholars contributing to S-BPM, the analysis of dataset reveals that 29 scholars contributed to the research stream with at least two published studies. A map was developed to visualize such scholars by adopting VOSviewer (version 1.6.14), a software tool for visualizing bibliometric networks. The map (Figure 2.5) is based on bibliographic data and considers authors as unit of the analysis; the map is based on co-authorship analysis that means that the relationship between two items (in this case two scholars) is determined by the number of co-authored documents. A thesaurus file was also developed aimed to perform a data cleaning (for instance to reconduct those authors that in the bibliographic data are written in two different manners to a single author) and obtain a more consistent map. All the default parameters set up by the software was adopted to create the map.

In the author map (Figure 2.5) each circle represents a scholar who published at least two studies in the research field. The dimension of the circle is based on the number of documents that each scholar published, and the thickness of links between two items represents the number of studies co-authored by the two scholars (thicker is the line that links two authors, more are the documents to which they

contribute together). Moreover, the map in Figure 2.5 is the overlay visualization provided by VOSViewer, in which the colour of each items represents the average publication year of studies published by each scholar. The map shows which are the scholars who contributed more recently, as well as those that provided contributions in the past. For instance, it can be noted that Van Looy and Nowak are two scholars who contribute to S-BPM with the same number of publications (five studies for both the scholars); however, the first scholar provided more recent contributions. An analysis of scholars' nationality was also carried out. Among the 29 scholars who contributes to S-BPM with at least two studies, 16 are German scholars, followed by Australian scholars. A more limited contribution is instead provided by scholars from Belgium and Liechtenstein (two scholars per country) and Spain represented by only one scholar. Table 2.4 lists the scholars who published at least two studies, their affiliation, and nationality; also, the number of publications for each scholar, institution and country is reported. Note that the number of studies published by each scholar indicated in Table 2.4 determines the dimension of the circle corresponding to each scholar in the scholars' map (Figure 2.5).

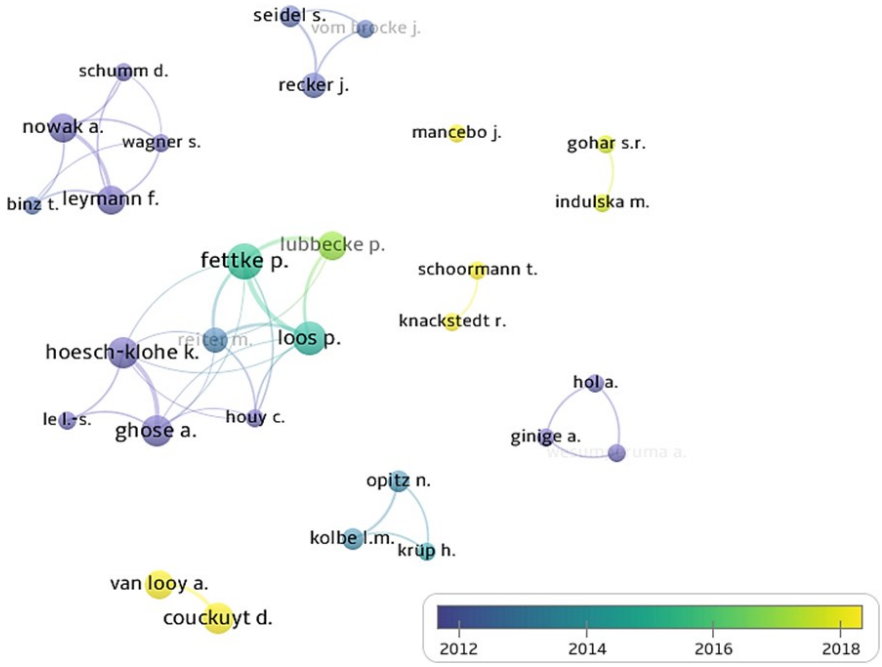

Figure 2.5. Sustainable business process management – scholars' map

Table 2.4. List of scholars contributing to the Sustainable business process management field

Country Affiliation and scholars	Number of published documents
Germany	**58**
Georg-August-Universität Göttingen	*8*
Kolbe, L.M.	3
Krüp, H.	2
Opitz, N.	3
German Research Center for Artificial Intelligence (DFKI)	*8*
Fettke, P.	8
Institute of Architecture of Application Systems	*2*
Wagner, S.	2
TWT GmbH, Stuttgart	*2*
Schumm, D.	2

Country Affiliation and scholars	Number of published documents
Universität des Saarlandes	*18*
Houy, C.	2
Loos, P.	7
Lübbecke, P.	5
Reiter, M.	4
Universität Hamburg	*4*
Recker, J.	4
Universität Hildesheim	*4*
Knackstedt, R.	2
Schoormann, T.	2
Universität Stuttgart	*12*
Binz, T.	2
Leymann, F.	5
Nowak, A.	5
Australia	**24**
The University of Queensland Business School	*4*
Gohar, S.R.	2
Indulska, M.	2
University of Wollongong	*14*
Ghose, A.	6
Hoesch-Klohe, K.	6
Le, L.S.	2
Western Sydney University	*6*
Ginige, A.	2
Hol, A.	2
Wesumperuma, A.	2
Belgium	**11**
Universiteit Gent	*11*
Couckuyt, D.	6
Van Looy, A.	5
Liechtenstein	5
Universität Liechtenstein	*5*
Seidel, S.	3
Vom Brocke, J.	2
Spain	**2**
Universidad de Castilla-La Mancha	*2*
Mancebo, J.	2

2.4.2 Thematic analysis

The 47 publications included in the review were classified as position paper (three studies; the emerging themes are discussed without any experimentation), conceptual papers (13 documents; a theoretical perspective is adopted), practical papers (21 studies; methods, techniques and solutions to embed sustainability in the management of business processes are provided), and review (nine publications;

the state of the art on SBPM is discussed). Only a book was retrieved which includes both theoretical and more practical contributions. The classification of retrieved studies is reported in Table A in Appendix.

Most of retrieved contributions (43) discusses BPM and environmental sustainability, only few studies consider the social dimension of sustainability in addition to environmental one (two studies), and only one contribution deals with social sustainability in Business Process Management.

The terms adopted by scholars to describe their contributions were mapped with the aim to identify the most recurrent and to highlight the main topics addressed in the literature. To do this, the text mining functionality of VOSviewer software was exploited.

In Figure 2.6 the scholars' keywords co-occurrence map is reported. The terms that appear are the most recurrent keywords that scholars adopt to shortly describe the content of their contributions. A minimum number of occurrences of a keyword equal to two was set up, and a thesaurus was applied to merge those terms that have the same meaning, but the software recognizes as different only because often are written as acronym (for instance, in some cases, business process management is reported as BPM). A total number of 22 keywords were included in the map. The dimension of the circle represents the number of times that the terms appear in the publications' keywords and the link between two terms represents the number of documents in which the terms appear together (thicker is the line that links two terms, more are the documents that present those terms).

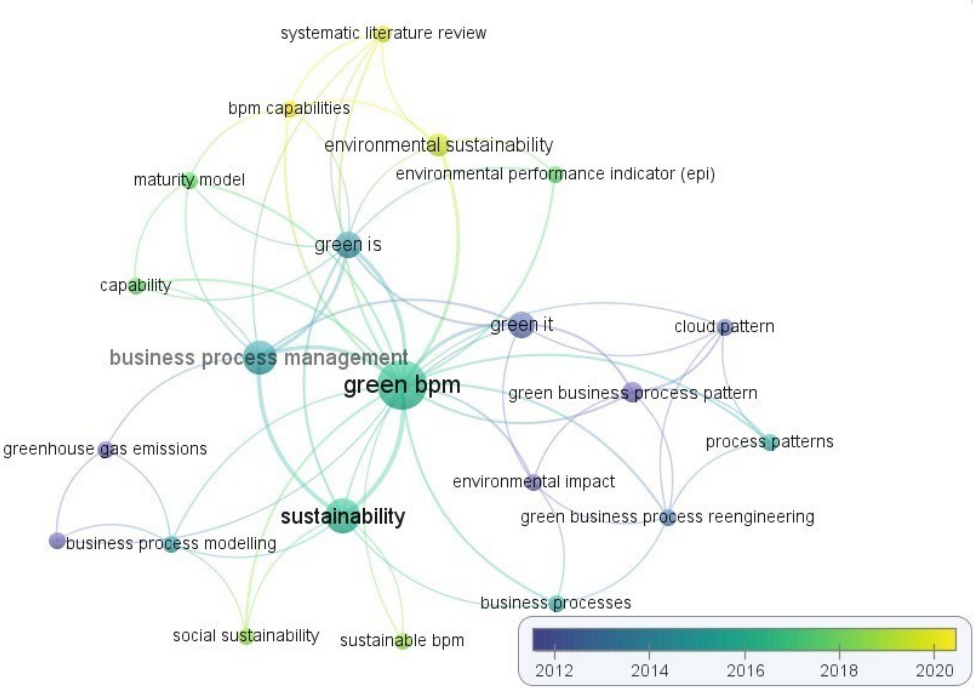

Figure 2.6. Sustainable business process management – scholars' keywords co-occurrence map

The term Green BPM is the most recurrent term in the map. This means that scholars who addressed the embedding of sustainability into BPM paid attention to the environmental dimension of sustainability. A recent and still limited attention to social sustainability can also be observed in the map, as such a dimension of sustainability appears as keyword in few academic contributions.

The addition of sustainability dimension as an important emergent dimension in the management of business processes has been graphically represented with the replacement of the "devil's quadrangle" with the "devil's pentagon" (Figure 2.7). Although scholars in the field of S-BPM agree with the

representation proposed by Seidel et al. (2012), they also stress as the extant literature on S-BPM focuses primarily on the environmental issues of business processes, overlooking the social ones (Couckuyt, 2018; Couckuyt et al., 2019; Magdaleno et al., 2017; Schoormann et al., 2018). Therefore, the devil's pentagon developed by Seidel et al. (2012), although able to conceptually trace the direction to which BPM research field should tend, does not appropriately represent the state of the art of literature as not all the sustainability dimensions have been fully embedded in the BPM discipline yet.

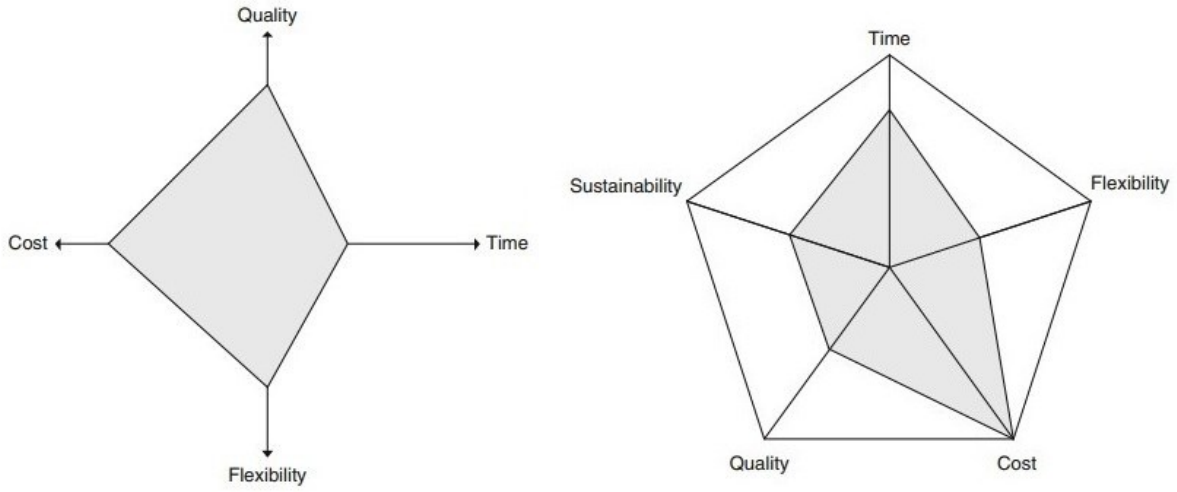

Figure 2.7. The devil's quadrangle [source: (Reijers et al., 2005)] revised into devil's pentagon [source: (Seidel et al., 2012)

Most academic contributions in the field research stream of S-BPM can be subsumed under the umbrella of Green BPM (Couckuyt et al., 2020; Seidel Recker et al., 2012). The close attention paid by scholars to Green BPM is also demonstrated by the considerable number of previous studies reviewing the existing literature on Green BPM that were published over the years (Stolze et al., 2012; Opitz et al., 2014b; Gohar et al., 2015, 2020; Maciel, 2017; Schoormann et al., 2018; Hernández González et al., 2019; Couckuyt et al., 2019, 2020). Little consideration is paid by academic literature to Social BPM, the research stream that should address social issues of business processes. Current literature, in turn, limits to interpret social BPM as the improvement of business process through the adoption of BPM techniques and Web 2.0 social tools (Couckuyt et al., 2019).

In the following, academic contributions in Green and Social BPM research streams are summarized.

Green BPM

Green BPM is the research stream that concerns the analysis, modelling, and optimization of business processes with dedicated consideration paid to their environmental impact and consequences (Couckuyt et al., 2020; Seidel Recker et al., 2012).

Green BPM research stream evolved over time, from the concept of Green IT/Green IS – related to the environmental impact of information systems and technologies (Opitz et al., 2014b) – to the concept of Green BPM, more related to the environmental concerns of business processes. Green IT (Information Technology) research stream exclusively deal with the resource efficiency and reduction of consumption of IT infrastructures in order to improve the environmental sustainability of information processing (Houy et al., 2011; Opitz et al., 2014b). Green IS (Information systems) supports the environmental transformation of business processes through the adoption of information systems (Houy et al., 2012) as a way to reduce the consumption of energy and resources (Seidel Recker, 2012).

Seidel et al. (2012) argued that as it was no more possible to undertake a sustainability change initiative without the introduction of advanced information technologies, similarly it was impossible to exploit the transformative power of IS without considering changes in how employees performed their job and without consider how the technological capabilities change business processes of an organization. BPM, by providing adequate techniques for the analysis, design, execution, and monitoring of business processes, enabled a holistic approach for the management of sustainable business processes. This implied the need for BPM to be adapted to environmental requirements and led to the introduction of the novel concept of Green BPM, conceptually represented by Houy et al. (2011) as an intersection of approaches and ideas from the field of Green IS and BPM (Figure 2.8). Although both research fields are closely related, Green BPM, as opposed to Green IS, has a main focus on process change that goes beyond solely IT application (Couckuyt, 2018).

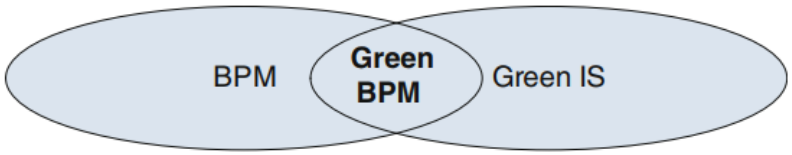

Figure 2.8.Green BPM as intersection of concepts and approaches from BPM and Green IS [source: (Houy et al., 2012)]

The codification of studies included in the review according to the six core elements of BPM shows that most studies in Green BPM research stream mainly focused on methods, namely they provided methods, approaches and techniques to analyse, modelling, monitor and improve business processes from the perspective of environmental sustainability (e.g. by considering environmental issues such as energy consumption, greenhouse emissions and carbon footprint (Gohar et al., 2015, 2020)). Also, the other core elements of BPM have been addressed by Green BPM contributions.

Green BPM – methods for environmentally analyse, modelling and redesign business processes

In this sections, academic contributions providing methods to environmentally analyse, modelling and redesign business processes are summarised.

Modelling techniques

Some scholars focused on the representation and modelling of environmental aspects such as energy consumption, greenhouse emissions and carbon footprint. Two different approaches to model these environmental aspects can be identified: *notation extension* and *model annotation* (Magdaleno et al., 2017). For example, Recker et al. (2012) proposed new constructs to extant Business Process Management Notation (BPMN) with symbols able to represent the resources consumption associated to process' activities (for instance fuel consumption, paper consumption) as well as GHG emission associated to the process. Table 2.5 shows the BPMN notation extension proposed by Recker et al. (2012). With the extension, processes can be documented in light to their contribution to the organization carbon footprint and the information provided can be used to design and redesign business processes so as to make them more compliant with environmental regulations.

Optiz et al. (2012) analysed process modelling languages (such as BPMN, EPC, IDEF and UML) from different perspectives and conclude that the BPMN notation is the most suitable for modelling energy and resources consumption of business processes.

Table 2.5. BPMN notation extension [source: Recker et al. (2012)]

Construct	Notation	Description
Fuel consuming activity		This notation is attached to an activity that produces CO2 by using fuel as main source
Paper consumption activity		This notation is attached to an activity that produces CO2 by using paper
GHG emissions		These constructs can be assigned to each pool or swim lane to indicate the level of GHG (mainly CO2) emission in the relevant part of the process. Colour coding can be used to display the overall level of GHG emission in the process. Else, the precise amount of GHG emission produced can be specified
GHG flow		The GHG flow construct is used to show the flow of GHG in a process and to connect emission producing activities to the GHG emission indicators

Another approach suggested in the literature to take into consideration environmental aspects of a process is the annotation. In this case, the environmental aspects (such as energy consumption, waste production, fuel production or CO_2 emissions) are measured and simply annotated on the process map. (Houy et al., 2012). By summing the annotated values, the total consumption or the total wastes produced in a process can be measured and controlled. Figure 2.9 shows a sale process mapped in EPC language in which the model annotation approach suggested by Houy et al. (2012) is applied and the total consumption of resources (electric power and fuel), as well as CO_2 emissions are shown.

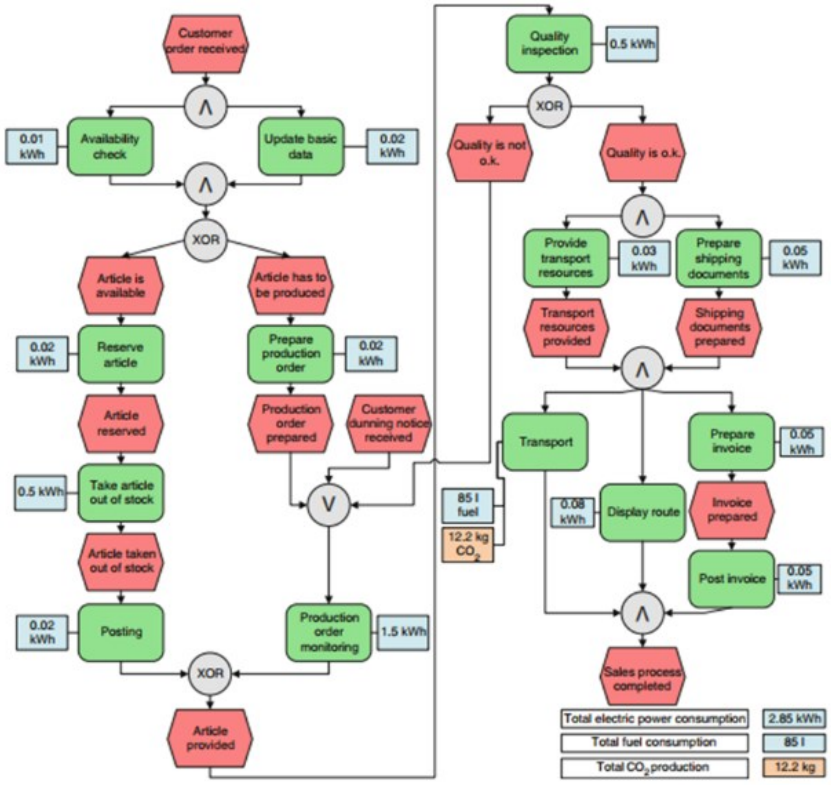

Figure 2.9. Sale process mapped in EPC and annotated with relevant environmentally aspects [(source: Houy et al., 2012)]

Hoesch-Klohe Ghose et al. (2010) suggested informing the process activities represented in BPMN notation with emission annotation; an emission annotation is a textual assertion associated with the activity that states the amount of carbon emission, in terms of equivalent CO_2, that an activity emits when is executed. The semantic and algebraic emission annotation allows to obtain the cumulative emission annotation across process design to compute the carbon emission value of the whole process

(Hoesch-Klohe Ghose, 2010). To this end, a software tool – the ProcessSEER system – was developed; the system implements an extension of BPMN, enabling a semantic cumulative effect annotation of process model; the final cumulative effect annotation in the process design determines the functional requirements to be improved in the process redesign. This carbon-aware process design was applied in a case study conducted in a small Australian tin-smith company to assess its emissions and detect possible costs benefits from the reduction of carbon emissions (Ghose et al., 2010).

Lübbecke et al. (2017) asserted that the traditional objects of BPMN o EPC process model do not sufficiently support the modelling of ecological impact of an activity; they develop the Guidelines of Modeling for Ecological process design (EGoM), a framework that includes a set of principles and rules to identify relevant information that should be present in a process model (e.g., BPMN, EPC or UML activity diagram); these principles help to define what information and what level of granularity is necessary to model processes in Green BPM; if the process model adheres to these principles, automated process optimization can be applied to process model to automatically identify violation of good ecological practices. For instance, the principle of correctness and construction adequacy implies that to assess the environmental impact of any process activity, it should be named so as to put emphasis on the tools used (e.g., "print invoice" is more precise of the generic label "create invoice" because the tools involved as well as the resources consumed by the activity are easily identified). These scholars also designed and implemented an extension of ARIS BPM platform able to automatically implement a compliance checking aimed to identify ecological shortcomings and foster improvement of ecological footprint of business processes (Lübbecke et al., 2018).

Methods for business processes' analysis and redesign

Many scholars suggested frameworks and methods for the analysis and redesign of business processes from the perspective of environmental sustainability.

Recker et al. (2012) adapted the Activity Based Costing (ABC) to the measure the environmental process impact in terms of carbon footprint and improve such a performance. The proposed method, called Activity Based Emissions (ABE) Analysis, envisages the following steps:

- Identify the process to be analysed
- Characterize the process in terms of activities performed, business rules, logical and temporal order in which they are performed, actors and resources involved in the execution of each activity and relevant data and source of data (transportation means, papers, system technology) adopted. The process is modelled by using extended or even traditional BPMN notation.
- Determine the emission drivers that, in analogy to cost drivers in accountability, are all those activities that causes a GHG emission; to this end, the extended BPMN model documenting CO_2 emission drivers is proposed.
- Calculate CO_2 emission for each activity and for the overall process
- Redesign the process by selecting and implementing the process variant that reduce the carbon footprint during the process execution.

The Abnoba framework was developed by Hoesch-Klohe et al. (2011) to redesign business processes and obtain processes that achieve the same functional goals, while minimizing the environmental impact. The framework requires a preliminary annotation of emissions and consists in a semi-automated process improvement as it adopts a library of semantic annotated process fragments. A process fragment is a (sub)process graph with a single entry and exit point. Essentially, the Abnoba

framework replaces fragments of an as-is process with other fragments (drawn from the library) in the manner that ensures that the functional goals of the process are still realized, but the sustainability profile of the redesigned process is improved. The framework includes these phases: (1) the as-is process is disassembled into its process fragments; (2) obsolete fragments are deleted; (3) substitutable fragments are automatically searched through a library; (4) substitutable fragments are replaced with those identified in the library; each substitution represents a potential process redesign option; (5) the process redesign options are ordered according to their (environmental) sustainability performance and the best option is identified. The framework, whose procedure is shown in Figure 2.10 has been applied to environmentally improve the business process of job application handling in a HR department (Houy et al., 2012).

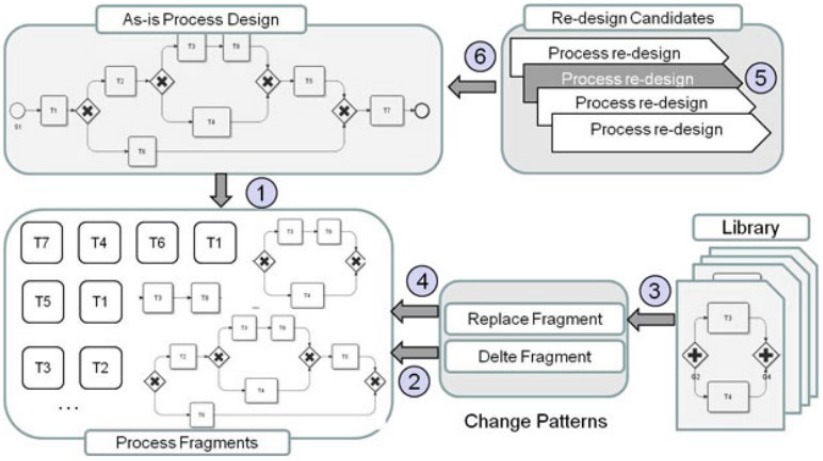

Figure 2.10. Abnoba Framework procedure [source: (Hoesch-Klohe et al., (2011)]

Wesumperuma et al. (2011) developed a framework enabling organizations to optimize and mitigate the GHG emission of their business processes; the framework – derived from the GHG Protocol – includes several phases:

- Identify organizational boundaries and processes: the business processes to be analysed are defined
- Identify emission sources: emission sources are identified according to categories envisaged by GHG protocol
- Identify business objectives: quantitatively set up of GHG emission reduction (for instance, GHG reduction of 10% by a certain year)
- Model the business process: the BPMN notation is suggested to model the process and provide a comprehensive understanding and perception of a business process
- Collect data: data related to GHG emission of each process activity are collected and annotated into the BPMN process model
- Calculate GHG emission at process level: GHG emission at activity, sub-process and process level are determined with special emphasis given to electricity consumption at various process levels
- Re-design the business process: different actions to improve the GHG emissions are identified, for example the switching to green energy sources
- Evaluate the optimal solution: the redesigned process should be simulated based on different scenarios to obtain feedback useful for enhancement.

The same authors extended the method and developed the Green ABM (activity based management) that merges the activity based costing and critical path method to make it easier for organizations to include green objectives (such as the reduction of GHG emissions) among the considered performance metrics (Wesumperuma et al., 2013).

More recently, Klessascheck (2022) in a position paper argued that approaches and methods to analyse and improve sustainability of business processes generally take into consideration few aspects as greenhouse emissions of energy consumption; he argued that a more holistic approach to address environmental sustainability of business processes is needed and proposed to enrich existing methods for sustainability-oriented process redesign with aspects derived from methods such as Life Cycle Assessment. An ongoing research conducted by Fritsch (2020) goes in this direction. This study highlighted that scholars in Green BPM assumed that improving one business process or a single activity of a process will lead to a more sustainable organization or to a better environmental performance. Current approaches do not consider the impact that the improvement of environmental performance of a single process step can have in the supply chain; in other words, Fritsch (2020) argued that the improvement of environmental performance of a single process or a single process step may provoke a degradation of environmental (or social) performance somewhere else in the supply chain. Taking this observation into consideration, the authors suggested the adoption of Organizational Life Cycle Assessment, a multi-impact sustainability assessment approach that evaluates all inputs, outputs and potential environmental impacts of the activities associated with the organization, by adopting a lifecycle perspective. Therefore, a novel research trend in Green BPM research stream - based on the adoption of lifecycle perspective to assess and improve and redesign environmental performance of business processes - is emerging.

Pattern-based approach

Among the approaches and methods devoted to embedding environmental sustainability into business process management, the pattern approach is one of the most adopted. As already mentioned in Section 1.5.3, pattern approach provides practice-oriented and reusable solutions to solve problems (Winter, 2009; Fowler, 1996). Patterns have been proposed by Green BPM scholars to analyse and redesign environmentally sustainable business processes.

Nowak et al. (2011) proposed the pattern approach for describing appropriate solutions for the environmental optimization of business processes. In their contribution, these scholars developed the green process patterns by abstracting them from the analysis of product and service offering as well as from literature on Green IT and Green BPM. The proposed green process patterns are independent from a specific BPM environment or process modelling language in order to provide a broad applicability of the patterns within different scenarios. Through these green patterns organizations can rethink their current behaviour by identifying improvement opportunity to make their processes more environmentally sustainable.

Green process patterns were classified as:

- Basic patterns: such patterns are suggested to rethink the process without the necessity of changing its structure. Green Compensation, Green Variant, Resource Change, and Green Feature are the patterns included in this category.
- Process-centric patterns: such patterns change the structure of business processes as well as the way of performing activities. Common Process Improvement for Environmental Aspects,

Process Automation, and Human Process Performance are the patterns included in this category.

— Sourcing-centric patterns: such patterns focus on how to distribute processes and activities between different partners to improve the overall environmental impact (Insourcing and Outsourcing are the patterns included in this category).

Figure 2.11 shows the green business process patterns classified in the three categories identified by Nowak et al. (2011) with the indication of the graphical notation suggested by the authors; Table 2.6 reports a description of each green process pattern; for each pattern the problem statement describing the problem and challenges that the pattern addresses, the suggested solution, and some examples are described.

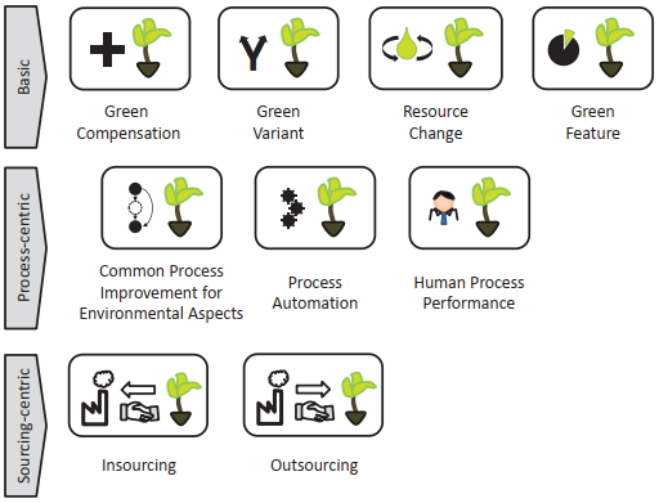

Figure 2.11. The three categories of Green Process Patterns [source: (Nowak et al., 2011)]

Table 2.6. Green Business Process Patterns [adapted from: (Nowak et al., 2011)]

Pattern name	Problem statement	Solution	Examples
Green Compensation	*How can the environmental impact of a process be decreased if the structure, the resources, and the behaviour of the process cannot be changed?*	Whenever a business process within an organization is hard to redesign due to the nature of tasks or internal constraints or regulations, proper solutions, namely a compensation process or activity, have to be introduced to compensate (part of) the environmental impact of the original process without changing its structure. The compensation pattern does not reduce the negative effects of the process, but compensate them with positive effects from global perspective	When wastes produced by machines cannot be reduced without invest in a new and expensive machine, a donation for an environmental organization (e.g., for planting trees and support rainforest) can compensate these negative effects in terms of CO_2 emissions and improve the environmental impact from a global perspective. Oil companies can compensate carbon emissions occurred when burning fuel in the cars by investing a certain monetary amount deriving from each customer's refuel in renewable energy
Green Variant	*How can the environmental impact of a process be decreased while keeping the original outcome?*	Whenever an organization cannot change their business processes with greener ones without making them more expensive or violating internal policies and want to assure the same functional outcome of the process with less environmental impact, it has to be able to offer an alternative green business process variant; the previous existing process remain, but the organization gives to the customers the opportunity to choose between the	A company that offers its product using conventional plastic packaging, using this pattern can offer an alternative packaging method using non plastic and renewable materials and give to customers the opportunity to choose between the traditional packaging and the greener one; in case of alternative packaging, an additional price can be required to customers

Pattern name	Problem statement	Solution	Examples
		conventional process and the green variant process (which uses different steps, resources or partners to perform the activities); the additional costs of green process variant may be in charge to the organization itself, to the customer or by using government grants	
Resource Change	*How can the environmental impact of a process be decreased while keeping the original process structure?*	An organization uses a multitude of resource to perform the activities of the process; these resources are usually chosen by their functional capabilities and costs; the resources need to be selected also by considering the environmental objectives the organization want to achieve; this pattern implies exchange the resource so that the environmental impact of the business process decreases	A company can decide to use green electricity instead of a conventional one; it can also decide to use non-plastic packaging for the products; another example can be the adoption of cloud computing that decrease the number of machines that the company need
Green Feature	*How can the public appearance of an offering be made "greener"?*	To environmentally optimize business process organization can introduce green feature to their business processes; this pattern implies identify all features of the product where a green alternative might be available and replace these features with greener ones. The combination of several different green features may significantly influence the environmental impact of the process. One selection criterion of green feature can be the fact that it is easy to communicate to the customers; trough the introduction of green features, the organization can attract the attention of customers and gain reputation of being sustainable	A company may advertise its production process that contains some green features like specific activities which are executed on environmentally friendly machines. A company producing outdoor clothes can introduce a green feature that implies change the production to make it fluorocarbon free; this green feature allows company to gain competitive advantage compared to production of regular outdoor clothes
Common Process Improvement for Environmental Aspects	*How can the environmental impact of a process be decreased by regular business process optimization techniques?*	The organization identifies potential processes or activities that can be modified to improve the environmental performance. Adding a further dimension to the process optimization increases the complexity of the existing trade-off to be solved. The environmental impact may indeed influence the costs, quality, time, or flexibility in positive as well as negative ways	A company redesign its process in such a way that the workers need to travel less: this entails an optimization of travel costs and a reduction of fuel consumption, so an improvement of environmental impact A company that adopts two separate services to calculate employees' salaries can replace the service with a single more complete service in order to decrease energy costs for processing data
Process Automation	*How can the environmental impact of a process be decreased by automating certain activities?*	Business processes are based on both human activities and IT supported activities: the organization automates part of process or an activity in such a way that the result remains the same or is even improved and the environmental impact is improved	A company that needs to send a monthly invoice to their customers can decide to send it by email, through a fully automated process. In this way the company saves time, cost, and decreases the environmental impact caused by the paper manufacturing, the invoice printing, and the transport of the delivery company
Human Process Performance	*How can the environmental impact of a process be decreased by changing certain activities, so that*	Business processes are based on both human activities and IT supported activities: the organization identifies those activities that are executed by machines that pollute the environment and that can potentially be execute by	A company that realizes a production in small batch series and usually use high tech laser machine to make the quality assurance, can replace the automated control with the human control, so assigning the quality

Pattern name	Problem statement	Solution	Examples
	they are executed by humans?	human and replaces them with human activity obtaining a more environmentally sustainable process	assurance to an employee; in this way the environmental impact is reduced as the laser machine, whose manufacturing and operation has high environmental impact, are no more adopted in the process
Outsourcing	*How can the environmental impact of organizations be decreased by de-centralization and outsourcing?*	Products and services are realized through business processes performed by different partners who collaborate to obtain the outcome in an efficient way. To improve the environmental performance of the overall process, the organization can consider the possibility to swap a business partner to another that is able to offer the same resource or service with less ecological impact; also, the organization can decide to outsource certain activities or part of business process to a specialized partner that is able to provide the same service with a less environmental impact	A company decides to find a more ecological supplier for a specific raw material. A company decides to use a software-as-a-service offering from a partner for the calculation of salaries that was made inhouse before. The partner is specialized in the activity and perform it in more efficient way also from the environmental perspective, so improving the overall environmental impact of the process
Insourcing	*How can the environmental impact of organizations be decreased by centralization?*	Products and services are realized through business processes performed by different partners who collaborate to obtain the outcome in an efficient way. To improve the environmental performance of the overall process, an organization that utilizes services or processes form third parties can decide to integrate them in-house	A company that produces parts of its product at a supplier located in a foreign country can decide to insource the production of these parts in order to reduce the environmental impact of the overall process: by insourcing the production, the parts need not to be transported from the supplier to the assembly plant; so, the environmental impact is reduced

Additionally, Nowak et al. (2011) provided a decision tree supporting the organization in the identification and selection of green business process patterns to be adopted to redesign a business process. In general terms, the choice of a pattern depends on the extent on which the process can be restructured: the more the process can be modified, for example by substituting certain activities, the more patters may fit.

In a second work on the topic of green business process patterns, Nowak et al. (2013) proposed a method to guide organizations through the process of identifying patterns, i.e., suitable solutions, which properly fit to their domain of interest. The method envisages the analysis of existing green business process patterns which explicitly address the environmental impact of business processes and that have been formulated in different domains, the identification of environmental relevant characteristics of these patterns, and the appliance of those characteristics to derive new patterns. The authors applied such a method to derive a set of patterns from the domain of workflow management, application architecture and cloud computing architecture that are applicable for the improvement of environmental impact of other business processes. For instance, Nowak et al. (2013) applied this method to derive a pattern named Green External Choice from the External Choice pattern, one of the workflow patterns (the workflow patterns basically describe solutions on how to design business process to achieve business objective). The Green External Choice pattern essentially implies that the process is extended by introducing external choice that modifies the process path according to the evaluation of information during the process runtime. Differently to the Green Variant pattern described in Table 2.6 (in which the customer decides between the conventional or greener alternative shipping or packaging),

the application of Green External Choice pattern implies that the process automatically checks information about the total carbon footprint and, based on such information, decides which shipping option would be the best to not violate defined business objectives for carbon emissions.
Nowak et al. (2012) also proposed the application of green process patterns to support developers in the creation of more eco-efficient cloud applications and services.
Lübbecke et al. (2016) identified ecological weaknesses of business processes and applied the concept of pattern to formalize these weaknesses. To extract the ecological workflow patterns, the authors analysed the process of proof of identity performed by the bank when the customer apply for a bank account. By empirically measuring the energy consumption of each IT device involved in the process, they derived four ecological workflow patterns from control-flow, operational and data perspective; these patterns are presented as tool for decision support in the domain of Green BPM: through the application of ecological workflow patterns, ecologic-aware and eco-friendly business processes can be created; also, they can be used to optimize existing processes in terms of ecological performance such as the consumption of energy or raw materials. For example, one of the ecological workflow patterns derived from the operational perspective regards the choice of web browser and implies the use of more advantageous web browser in terms of energy consumption in the process design, as well as the substitution of web browser with one characterized by a less energy consumption in the redesign of existing processes. Lübbecke et al. (2017) adopted the concept of pattern in Green BPM as a way for the analysis and improvement of existing processes and for the design of new processes that paid attention to ecological goals such as the reduction of resource consumption during the execution of the process. Their study was strongly focused and limited to the specific domain of public administration. They provided a catalogue of 26 Ecological Process Patterns derived from the field of German public administration: the patterns were identified from the analysis of administrative processes and from the analysis of a catalogue of existing process weakness patterns (in terms of environmental impact) in the field of public administration. For each weakness situation for which the experts were able to provide a more resource-efficient solution, the as-is situation is considered as a weakness pattern, whereas the more advantageous solution is proposed as an Ecological Process Pattern. For example, an ecological process pattern envisages that a check on completeness should be performed prior to document printing so as to improve the common situation in which a form is printed and afterwards it is checked for completeness.

Monitoring approaches

To support organizations in the monitoring and control of business processes from the perspective of environmental performance, methods addressing the detection and reduction of energy consumption of business processes were provided. In particular, Nowak et al. (2013) proposed a methodology to guide and support organizations in determining the power consumption of automated business processes, considering the IT resources and web services used by that processes. Reiter et al. (2014) provided a method for detecting energy consumption of administrative business processes in which the energy consumption of underlying IT devices is a central issue. Lübbecke et al. (2015) suggested the recurs to process simulation for decision making in Green BPM: the simulation approach, enabled by the collection of energy consumption data and indicators of a business process at execution time, allows to find out the impact of process changes prior the implementation in real workflow.

The topic of environmental performance measurement is central in the Green BPM literature as the principal goal of Green BPM is the reduction of environmental impact of business processes.

Couckuyt et al. (2018) provided a classification framework of extant (environmental) sustainability performance measurement models which were distinguished into models focusing on the entire organization (e.g., GRI) and models focusing on a single business process (e.g., green KPIs such as equivalent CO_2). By reviewing existing literature, Pádua et al. (2015) derived a conceptual proposal to guide the promotion and evolution of sustainability performance measurement from the perspective of business process management. They identified some aspects, namely strategy, integration, stakeholder, evolution over time and business process approaches, that are considered relevant for creating a performance measurement system aimed to align sustainability and business processes. This means that, for example, sustainability performance indicators should be associated with the strategic objectives; also, the stakeholder aspect implies that sustainability performance indicators should be associated with stakeholders' needs and that stakeholders should be involved in the definition of the sustainability performance measurement system.

With the aim to identify environmental performance indicators to monitor environmental performance of business processes, Hernández González et al. (2019) systematically reviewed literature on the topic and derived a new characteristic – process greenability – defined as the degree of efficiency with which the process is executed in terms of environmental impact, namely in terms of consumption of energy, use of ecological and/or recycled resources, generation of emissions, and production of waste and its destination. The authors identified some sub characteristics (energy efficiency, resource use, minimization of environmental effects, ecological and recycled resource use, waste minimization, emission minimization) and, for each of these sub characteristics, associated measurable indicators that can be used to monitor each environmental performance.

Green BPM – other core elements

Beside methods and techniques to analyse, modelling and improve business processes from the perspective of environmental sustainability, also the other core elements of BPM (strategic alignment, governance, people, information technology, and culture) were addressed in the Green BPM research.

Strategic alignment and governance

Nowak et al. (2011) investigated the differences and commonalities between conventional BPM and Green BPM from different perspectives (BPM lifecycle, key performance indicators, business process management architecture, business and strategy) to identify aspects that need to be extended, refined or developed in order to achieve a holistic and effective Green BPM approach. Beyond the need of appropriate methods and tools to for the environmental process analysis and redesign, Nowak et al. (2011) argued that the strategic objectives should be adjusted to embed environmental sustainability in business process; also, each strategic decision should consider the impact that has on the environmental performance of the process. Nowak et al. (2011) also addressed Green BPM from the governance perspective and suggested the need to introduce a new role – the Ecological Officer – that, closely collaborating with other stakeholders, finds suitable adaptation strategy to embed environmental sustainability and specifies relevant environmental KPIs correlated with the defined environmental strategic objectives of the organization. Couckuyt et al. (2019) suggested the introduction of the managerial role of Sustainability Board as a new governance body to be implemented at organization level. Optiz et al. (2014a) conducted a structured literature review on Green BPM, by addressing it from

the perspective of capabilities that an organization should have to take advantage from Green BPM. Beside technical capabilities (green process modelling, green process monitoring and optimization), they discussed managerial capabilities as green governance, green strategy and green attitude that, together with the more technical ones, were synthetized in a capability called Green BPM readiness. Optiz et al. (2014a) agreed with Nowak et al. (2011) regarding the need to introduce a specific and clearly defined role to deal with environmental concerns of business processes.

People and Information technology

Lan (2011) addressed the environmental redesign of business processes from people perspective: the author proposed a conceptual framework to guide the green transition in the organizations, by suggesting training programs aimed to provide essential knowledge and skills to people affected by the green redesign of business processes and make them more capable to execute green processes.

Jakobi et al. (2016) and Mancebo et al. (2017) dealt with Green BPM from the people and stakeholders side, by discussing approaches and tools to more effectively involve stakeholders in all the phases of Green BPM and improve their commitment in environmentally sustainable actions. Jakobi et al. (2016) started from the consideration that traditional BPM is typically characterized by a top-down approach in which stakeholders, namely people directly involved in the processes to be redesigned, are only partially involved. They proposed a method - the Collaborative Green BPM (Co-Green BPM) - for supporting the involvement of stakeholders in the environmental design and redesign of processes. Such a method ties together individual energy feedback with collaborative modelling. By adopting energy feedback system stakeholders are able to reflect on energy consumption of processes they perform and are encouraged to identify space for optimization. To support stakeholders in providing these energy feedback, a prototype software tool enabling the accountability of energy consumption was developed: through this tool, each stakeholder (for instance an employee) automatically receives energy feedback data of processes he/she is executing. Collaborative modelling means that all relevant stakeholders are asked to participate in collaborative workshops in which process is analysed and stakeholders are involved in by visualizing processes using process models.

Mancebo et al. (2017) highlighted the prime importance of incentive the company's employees to get more involved in the sustainability initiatives envisaged from Green BPM. To this end, the authors suggested the adoption of gamification, namely the use of game design in non-game context, to motivate employees of an organization to follow a series of green initiatives in the business processes they interact with. They developed a BPMS-Game based on the definition of games on BPMS platform; the tool, applicable to any BPM platform, is able to extract relevant environmental information on business process execution from the execution logs. BPMS-Game automatically performs calculation of the environmental performance of tasks that is used afterwards to create rules. Also, achievements for each created rule are established; once the objectives have been achieved, the game allows users to redeem their achievements and obtain rewards or gifts; the tool also provides a visual display of the progress achieved in the game. By adopting gamification and a mechanism of rewards, employees are more encouraged to be more environmentally friendly in their daily activities.

Culture

Optiz et al. (2014a) stressed that, among the capabilities that an organization should have to implement Green BPM, the fundamental one is the green attitude which is defined as the attitude of the company and their employees towards environmental sustainability.

An attempt to investigate which capabilities contribute to an effective implementation of Green BPM was conducted by Couckuyt et al.,(2021a). The authors surveyed high-level managers to find out which business process capabilities are considered important and positively linked to company's environmental performance. They investigated BPM lifecycle aspects: management aspects (process strategy, process-based external relationships, process roles and responsibilities, process skills and training); cultural aspects (process-oriented values, attitude and behaviours, process-oriented appraisal and rewards, process-oriented top management commitment); organizational structure aspects (process-oriented organization chart, process-oriented governance body). The results of the study identified capabilities that are more positively linked to company's environmental performance, namely process-based external relationships, process-based values, attitudes, and behaviours, process-oriented organization and process-oriented governance bodies. According to Couckuyt et al.,(2021a), managers essentially should consider that the successful adoption of Green BPM requires a focus on external relationships; that implies the participation of stakeholders, also those outside the organization, in all the phases of BPM lifecycle; also, organizations should look beyond performance merely driven by internal efficiency, and consider external view, namely customers, partners and society point of view. To take advantage from Green BPM, an organization should be guided from a strong belief, values and attitude that constitutes the appropriate culture for Green BPM adoption, namely those values able to support an organization in the implementation of more environmentally friendly activities. Moreover, practitioners should be aware that Green BPM adoption will succeed when this is also reflected in the organizational structure: the top management commitment toward Green BPM should be formalized in official roles (such as the chief ecological officer) visible in the organization's chart.

Couckuyt et al. (2021b) systematized Green BPM capabilities by declining three state of Green BPM maturity level; Green BPM capabilities assigned to each maturity level discriminate the Green BPM maturity levels that are: Green BP immaturity, Green BPL maturity, Green BPM maturity, and Green BPO maturity. The first maturity level is characterized by a low representation of all BPM capabilities; the Green BPL (business process lifecycle) maturity level indicates that organization is characterized by a high implementation of BPM lifecycle capabilities: this means that the modelling, deployment, and optimization of a business process is well-developed from an environmental sustainability point of view (for instance the adoption of appropriate notation to model emissions, energy consumption as well as the adoption of methods and tools to environmentally redesign and improve business processes). Moving to the Green BPM (business process management) maturity level, management capabilities are added to the Green BPL maturity level: such a level implies that the organization adopts environmental KPIs to measure their green performance, it also clearly defines roles and responsibility contributing to green strategy formulation (i.e., top management roles) and implementation (i.e., operational staff); external relationships such as green suppliers selection and collaboration are indicators for this Green BPM maturity level. Finally, reaching the last most comprehensive green maturity level (called Green Business Process Orientation maturity level) means that also culture and structure capabilities are well developed: with regard to culture, such a level implies that employees of the organization have environmental favourable attitudes, namely they consider their daily resources usage and they are trained to carry out green business processes; with regard to organizational structure, this last maturity level implies that sustainability board and sustainability owners to ensure sustainability governance are implemented within the organizational structure.

Social BPM

Little consideration is paid by academic literature to Social BPM, the research stream that should address social issues of business processes. Only a contribution addressed the design and redesign of business processes from social sustainability perspective, by suggesting the pattern-based approach. Schoormann et al. (2019), drawing on a literature review and experts' interviews, derived a set of seven social business process patterns. Table 2.7 reports the social business process patterns by indicating the problem that each pattern should solve, the proposed solution, as well as some explicative examples.

Table 2.7. Social business process patterns [adapted from: (Schoormann et al., 2019)]

Pattern name	**Problem statement**	**Solution**	**Examples**
Social Compensation	When core business processes are well established and compliant with the regulations, the organization does not have the capacity to adjust the process in a short time to achieve social sustainability	Improving social performance by compensating negative effects without changing the structure of a process	Compensating internal effects through hiring health consultants or providing free access to gyms Compensating external effects through establishing foundations, making donations, or offering employees participation in social projects
Social alternative	When core business processes are well established and compliant with the regulations, the organization does not have the capacity to adjust the process in a short time to achieve social sustainability	Improving social performance by offering an additional alternative process path to the customers without changing the core business processes	Integrating a fair-trade product in addition to a basic product and allow customers to select between two variants
Social resource replacement	Resources are traditionally selected based on economic criteria: to preserve performance of employees, social issues should be considered. Also, when new regulations concerning working condition are introduced, organization needs approaches and criteria for addressing these regulations	Improving social performance by replacing resources that have negative influence on employees (internal) and society (external) without changing the structure of a process	Ensuring ergonomic working spaces by replacing typical office furniture with height-adjustable desks
Social labelling	An organization that operates in socially responsible manner needs a way to communicate these aspects to be transparent with customers and explain, for example, why costs are different from other products	Improving the social image of an organization by labelling processes, products, and services with corresponding social certificates	Certificating offers with the fairtrade label to disclose characteristics of the production and communicate certain aspects
Social sourcing	Organization may not have appropriate knowledge and competences to perform processes in a socially responsible manner	Improving social performance by (a) transferring activities to external organizations that are able to carry out an activity in a socially acceptable manner or by (b) transferring external activities into the own company	Outsourcing processes to a fairtrade label-certified service provider
Social value chain	Since value chains are often globally and standards are differentiating between countries, monitoring of socially responsible aspects (e.g., working conditions) need to be performed	Improving social performance by defining social standards that have to be applied by every partner within a value chain	Specifying checklists with socially acceptable criteria that have to be passed by each partner within a value chain

Pattern name	Problem statement	Solution	Examples
Social-/human-centered individualization	As employees have different backgrounds, processes need to be aligned with individual characteristics to best make use of the employee's strengths for the business	Improving social performance by adjusting processes in terms of human-specific needs to allow various people to execute a certain process	Enabling the integration of people with handicaps through individualized working conditions to leverage his/her talents

Scholars also dealt with Social BPM with a meaning not related to the social dimension of sustainability. Social BPM, indeed, also refers to an emerging approach of BPM discipline based on the application and adoption of social software for the management of business processes (Suša Vugec et al., 2018). Bazan et al. (2020) define Social BPM as an intersection of two relevant aspect for organizations: on the one hand, the management and execution of business processes; and on the other hand, the use of social software, including social media tools, for leveraging the implicit knowledge shared by business process's actors to improving efficiency of business processes.

In this meaning, Social BPM emphasizes the role of collaboration during the design and enactment stage of BPM lifecycle and tries to solve the current weakness of BPM approaches characterized by a lack of communication and collaboration between actors involved in each stage (Brambilla et al., 2012). Social software and Web 2.0 applications open the way to overcome these problems: these technologies adopted in complementary way to BPM can favour the acquisition of knowledge during both the design and enactment phase of BPM lifecycle, as well as the collaboration, the communication and interaction of processes' actors (Mennuto et al., 2021).

2.5 Discussion

The research dealing with Business Process Management has been recently extended to consider the environmental and social sustainability performance of business processes, in addition to the traditional ones in terms of time, costs and flexibility that can be referred to the economic dimension of sustainability (Couckuyt, 2018).

In the conducted systematic review, existing contributions in the field of S-BPM have been analysed under the lens of the six core elements of BPM to pinpoint which elements have been addressed when the environmental and social dimensions of sustainability are added to the traditional ones.

As sustainability is becoming an important dimension for the design and redesign of business processes, it can be seen as a new capability area, transversal to the six core elements of BPM, to consider environmental and social concerns in all the elements of BPM. Table 2.8 summarizes the academic knowledge (by distinguish between knowledge related to Green BPM and knowledge related to Social BPM) and the main research gaps to be addressed.

Regarding Green BPM, the results of this review agrees with those stated by Couckuyt et al. (2019, 2020) according to which Green BPM follows a similar evolution of conventional BPM as it mainly focuses on technical capabilities and in little extent on managerial capabilities. Indeed, existing studies on Green BPM addressed process modelling by suggesting different approaches and methods to consider environmental issues: particularly, some authors suggested adapting modelling notation to embed environmental aspects into business process models (Hoesch-Klohe, Ghose, et al., 2010; Houy et al., 2012); also, the notation extension, namely the introduction of new constructs and symbols to represent environmental aspects such as resources consumption was suggested (Recker et al., 2012); many scholars developed methodologies supporting organizations in the business process redesign taking

into account the environmental concerns (Wesumperuma et al., 2011; Hoesch-Klohe et al., 2011; Recker et al., 2012); some of them proposed the adoption of information technologies to support frameworks for the design and redesign of environmental sustainable business processes (Hoesch-Klohe Ghose, 2010); also, the adoption of Information Technology such as software tools – also based on gamification – devoted to involve stakeholders in the environmentally sustainable design and management of business processes was suggested (Jakobi et al., 2016; Mancebo et al., 2017).

The pattern approach, namely the adoption of appropriate practice-based solutions providing improvement opportunity of business processes, is among the most suggested approaches for the redesign and improvement of business processes' environmental impacts (Nowak et al., 2011; Lübbecke et al., 2017). Green process patterns have been indeed derived from the analysis of weaknesses of the administrative processes in a single sector (public administration) (Lübbecke et al., 2017), from an abstraction process from products and services offerings and from literature analysis on BPM and Green IT (Nowak et al., 2011). The green process patterns proposed in the literature are not based on a wide businesses' practical experience; also, scholars did not provide a detailed description of the derivation process of these patterns. So, additional studies to derive green process patterns are required.

Existing studies on Green BPM paid less attention to managerial capabilities, namely governance, strategy, people and cultural factors of BPM (Maciel, 2017). Although some contributions in the Green BPM field attempted to address these factors (Nowak et al., 2011; Lan 2011; Jakobi et al., 2016; Mancebo et al., 2017; Couckuyt et al., 2021a; Couckuyt et al., 2021b), more research needs to be conducted to address some research gaps. For instance, further research in the field of Green BPM is needed to consider cultural factors, namely cultural changes that should be achieved to embed environmentally sustainable business practices and behaviour in the organizations (Gohar et al., 2020); governance factors, for instance environmental aware roles and responsibility (Couckuyt et al., 2019), and people factors (including top management commitment towards environmental concerns as well as environmental employees' skills and training (Couckuyt, 2018)) should be also further investigated.

Academic literature paid little attention to Social BPM; the conducted analysis revealed that the only contribution that attempted to embed social sustainability in business process management suggested the pattern approach as methods to support organizations in the redesign and improvement of business processes with consideration paid to social sustainability concerns (Schoormann et al., 2019); this means that Schoormann et al. (2019) contributed to the methods core element, i.e., to approaches and tools supporting the phases of BPM lifecycle. No others core elements of BPM were addressed from the perspective of social sustainability dimension. Numerous research gap, similar to those presented for Green BPM should be addressed also from the perspective of social sustainability. For instance, an investigation of cultural aspects in terms of social values, attitudes and behaviours to be implemented to embedding social sustainability in the management of business processes is required; further methods to embed social sustainability, namely frameworks and procedures to analyse, design and redesign socially sustainable business processes should be developed.

As to methods side, the conducted literature review reveals that both Green and Social BPM adopted pattern-based approach as method to support organizations in the design and redesign of environmentally and socially sustainable business processes. Existing contributions on such a method are still very few. The proposed green and social patterns are not derived from a wide companies' practical experience (as they are derived from literature analysis or from experts' interviews) and the

derivation process of green and social process patterns is not properly described. Additionally, the proposed green and social process patterns do not include indicators to measure the sustainability performance of business processes; they do not present any referring to the business processes they are able to (re)design as well as to the stakeholders to whom they refer.

An in-depth investigation of patter-based approach – the promising approach to (re)design sustainable business processes - is required.

Ultimately, it can be affirmed that S-BPM research stream is at early stage mostly because the social dimension of sustainability lacks consideration in the current literature, but also because many core elements of BPM should more in-depth investigated both from the perspective of environmental sustainability and from the perspective of social sustainability.

Table 2.8. S-BPM – a summary of academic knowledge and research gaps

BPM core elements		**Academic Knowledge**		**Research gaps**
		Green BPM	**Social BPM**	
Methods	*Modelling techniques*	Two different approaches to model environmental aspects of business processes were proposed: *notation extension* and *model annotation* (Magdaleno et al., 2017): - notation extension provides new symbols able to represent the resources consumption and emissions associated to process' activities (Recker et al., 2012) - model annotation informs process model with emissions annotation, textual assertion associated with the activity that states the amount of CO2 emission, or the energy consumption, waste production, fuel production or that an activity produces when is executed (Hoesch-Klohe Ghose, 2010; Houy et al., 2012) Other scholars asserted that the traditional objects of BPMN o EPC process model did not sufficiently support the modelling of ecological impacts of an activity and developed the Guidelines of Modeling for Ecological process design (EGoM), a framework that includes a set of principles and rules to identify relevant information that should be included in a process model to assess the environmental impacts of any process activity (Lübbecke et al., 2017)	-	No approaches and techniques to model the social impacts of business processes have been developed

BPM core elements	Academic Knowledge		Research gaps
	Green BPM	Social BPM	
Methods for business process analysis and redesign	Some scholars proposed frameworks for the analysis and redesign of business process from environmental perspective: - Recker et al. (2012) proposed Activity Based Emissions (ABE) Analysis, a framework to analyse and redesign a business process by improving its environmental performance in terms of GHG emissions; Wesumperuma et al. (2011) developed a framework based on GHG protocol enabling organizations to optimize and mitigate the GHG emission of their business processes. - Hoesch-Klohe et al. (2011) developed the Abnoba framework, to analyse and redesign business processes and obtain processes that achieve the same functional goals, while minimizing their environmental impacts Some scholars stressed as the improvement of environmental performance of a single process, or a single process step may provoke a degradation of environmental (or social) performance somewhere else in the supply chain and proposed the adoption of methods derived from the Life Cycle Assessment to evaluate the environmental impact of business processes (Fritsch, 2020; Klessascheck, 2022)	-	No studies provided frameworks and procedures to analyse and redesign business process from the perspective of social impacts
Pattern-based approach	Some scholars proposed pattern-based approach describing appropriate solutions for the environmental optimization of business processes. For instance, Nowak et al., (2011) provide a set of Green process patterns through which organizations can rethink their current behaviour identifying improvement opportunity to make their processes more environmentally sustainable. Lübbecke et al. (2017) provided a catalogue of 26 Ecological Process Patterns derived from the field of German public administration for the design of new processes that paid attention to ecological goals such as the reduction of resource consumption during the execution of the process.	Schoormann et al. (2019), drawing on a literature review and experts' interviews, derived a set of seven Social business process patterns aimed to analyse and redesign business process with consideration paid to their social impacts	Green and Social process patterns proposed in the literature are still few; they also seem to be not based on a wide practical experience (as they are derived from analysis conducted in a single sector or from literature review); also, scholars did not extensively and adequately describe how these patterns have been derived. Additionally, the proposed patterns are not related to business process they intend to redesign and to the stakeholders to whom they refer
Monitoring approaches	Some scholars addressed the monitoring of environmental performance of business processes. For instance, some scholars proposed methods for the monitoring of energy consumption of business processes (Nowak et al, 2013; Reiter et al., 2014). Couckuyt et al.(2018) provided a classification framework of extant (environmental)	-	No studies provided indicators and approaches to monitor social performance of business processes; more studies on social performance

BPM core elements	Academic Knowledge		Research gaps
	Green BPM	Social BPM	
	sustainability performance measurement models. Hernández González et al. (2019) provided environmental indicators to monitor environmental performance (such as energy efficiency, resource use, recycled resource use, waste production, and emission) of business processes		indicator to measure the social performance of business processes are needed; an in-depth investigation of environmental indicators as well as of methods to monitor environmental performance of business processes is also needed
Strategic alignment and governance	Some scholars addressed Green BPM from strategic and governance perspective. Nowak et al. (2011) argued that strategic objectives have to be adjusted to embed environmental sustainability in business processes; many scholars suggested the introduction of specific clearly defined managerial role to deal with environmental concerns of business processes (Optiz et al., 2014a; Nowak et al.,2011; Couckuyt et al.,2019)	-	More studies investigating how to define an organization' s strategy that integrates social and environmental dimension of sustainability whilst maintaining economic sustainability are required; also, a more in-depth analysis of organizational roles (both top management level and operational staff) to design and manage environmentally and socially sustainable business processes are required
People and IT	Some scholars addressed Green BPM from people perspective; Lan (2011) proposed a conceptual framework to guide the green transition in the organizations, by proposing training programs aimed to provide essential knowledge and skills to people affected by the green redesign of business processes in order to make them more capable to execute green processes. Jakobi et al. (2016) and Mancebo et al. (2017) proposed approaches and tools to more effectively involve stakeholders in all the phases of Green BPM and improve their commitment in environmentally sustainable actions. Mancebo et al. (2017) highlighted the importance of incentive the company's employees to get more involved in the sustainability initiatives envisaged from Green BPM and suggested the adoption of gamification, namely the use of game design in non-game context, to motivate employees to follow the green initiatives in the business processes they interact with.	-	More studies on the development of skills to be provided to processes' stakeholders (e.g., employees) to make them able to design and implement environmentally and socially sustainable business processes are needed; more studies on the mechanisms of rewards and remuneration to be implemented to favour the employees' commitment towards the achievement of social and environmental objectives are also required; also, an investigation of how

BPM core elements	Academic Knowledge		Research gaps
	Green BPM	Social BPM	
			information technologies can improve the analysis and redesign of environmentally and socially sustainable business processes is required.
Culture	Optiz et al. (2014a) stressed that, among the capabilities that an organization should have to implement Green BPM, the fundamental one is the green attitude which is defined as the attitude of the company and their employees towards environmental sustainability. Couckuyt et al.,(2021a) stressed as cultural capabilities (process-oriented values, attitude and behaviours, process-oriented appraisal and rewards, process-oriented top management commitment) are considered important and positively linked to company's environmental performance	-	More studies investigating cultural aspects and changes, in terms of green and social values, attitudes and behaviours, that should be implemented in the organizations to make them able to design and redesign environmentally and socially sustainable business processes are needed

2.6 Conclusions

The introduction of sustainability as a further dimension to be considered in the management of business processes in addition to the traditional ones (costs, time, quality, and flexibility) led to the development of the Sustainable Business Process Management, an emerging research stream in the field of BPM. Sustainable Business Process Management refers to all methods, approaches and techniques that support organizations in the management of business processes by taking into the account the environmental and social impacts of business processes.

The paper conducted a systematic literature review to investigate how sustainability has been considered in the BPM discipline and detect the existing methods, approaches and frameworks, as well as technologies and capabilities that allow to incorporate sustainability in the management of business processes.

The results of this literature review revealed that S-BPM research field is still at early stage as academic literature focuses almost exclusively on the environmental dimension of sustainability, neglecting the social dimension of sustainability. S-BPM as research stream is still at early stage because some managerial aspects (e.g., governance, cultural, and strategic aspects) have not been addressed in the literature, neither from the perspective of environmental sustainability, nor from the perspective of social sustainability. Many literature gaps exist; for instance, more studies addressing the organizational roles, the skills and knowledge, and cultural changes required to embed social and environmental sustainability in the management of business processes should be conducted; also, information technologies that can be used to improve business processes' sustainability performance should be investigated. Additionally, methods and approaches to analyse, design and redesign sustainable business processes should be more in-depth investigated; in this regard, pattern-based approach – the already suggested approach for the (re)design of environmentally and socially sustainable business processes – deserves a further investigation and development; similarly, additional studies on the

sustainability performance to measure the sustainability impacts of business processes should be undertaken.

The paper, by reviewing existing literature on the S-BPM, provides with researchers and practitioners an overview of methods, approaches and techniques that have been developed to embed sustainability in the management of business process as well as sheds the light on some open research questions that need to be addressed.

The paper is not without limitations. The set of keywords used to develop the search queries, although reasonably defined, may have excluded some potential relevant academic contributions.

3. *Benefit Corporation: a systematic literature review*

Abstract

Benefit Corporation is a hybrid form of business that simultaneously pursues profits and common benefits objectives. Although the worldwide diffusion of such organizational model, the academic literature addressing the topic of benefit corporation is still in its infancy. The study systematically reviews extant academic literature on benefit corporations with the aim to analyse and systematize knowledge on the peculiarities of the new organizational model (purpose, accountability, and transparency), its strengths and weaknesses and the motivation behind its adoption and diffusion, on its implication in the way of conceiving economy and interpreting corporate social responsibility, as well as on the business processes that are carried out so as to achieve the dual purpose. The results of the systematic literature review may also inform managers willing to adopt the model so as to pursue a dual purpose (profits and sustainability goals).

Keywords: *benefit corporations, systematic literature review*

3.1 Introduction

Historically, the economic system includes three distinct sectors, i.e., the for-profit sector which includes those entities that seek to maximize owner profit by providing goods and services; the no-profit sector which includes those entities that operate with a not explicit objective to make profit, and the government/public sector which redistributes resources to achieve public benefits (Coate et al., 2015). In the last years the boundaries among the three sectors have become more indistinct: a fourth sector (also called grey sector) has been proposed to include those companies that have a blended value proposition which combines making profits with serving a social and environmental purpose (Sabeti et al., 2015; Waddock et al., 2011). Among such hybrid forms, benefit corporation is considered as the most successful business hybrid form as it exists in many countries all over the world, including USA and Italy (Collins et al., 2016).

Benefit Corporation (BC) is a hybrid form of business that emerged in the first decade of the twenty-first century as an alternative to traditional business forms, generally focused on profit generation. Benefit corporations represent a hybrid model of business as it statutory incorporates a socially responsible component in the corporate mission; benefit corporations explicitly and intentionally pursue economic purpose together with environmental and social purpose to create a positive impact on economy, society and environment (Coate et al., 2015; Sciarelli et al., 2020).

Differently from other business forms, benefit corporations are required to pursue a dual purpose and declare their dual purpose in their mission statement, and to have a higher level of transparency and accountability towards the stakeholders to whom they refer in the business' s activities and decision-making process (B Lab, 2023d; Clark Jr et al., 2012; Hasler, 2014; Thorelli, 2017).

This paper aims to investigate existing literature on benefit corporations in order to understand how academic literature has addressed the implication of benefit corporation with respect to the way of conceiving economy and interpreting corporate social responsibility, the peculiar aspects that characterize such new business form, the motivation under its diffusion and adoption, its strengths and weaknesses, and the business processes that these businesses implement to achieve their dual purpose.

Through the literature review, conducted by following the systematic review methodology (Tranfield and Denyer, 2003), the paper intends to develop a knowledge base on benefit corporations as no previous studies have reviewed the academic literature with a specific focus on benefit corporations. From a research perspective, the study summarizes academic knowledge on benefits corporations and detect the existing literature gaps that can drive future academic research; from a managerial point of view, insights on the peculiarities of the benefit corporation model may be useful for informing managers willing to adopt such a new business form.

The paper is structured as follows. In Section 3.2, historical and normative aspects of benefit corporations are presented; in Section 3.3 the phases of systematic literature review are described; in Section 3.4 and 3.5 results of the review are presented and discussed, respectively; finally, conclusions and recommendations for future research are drawn in Section 2.6.

3.2 Background: Benefit corporations historical notes and normative aspects

Benefit Corporation (BC) is a type of for-profit corporate entity that appeared for the first time in 2010 in the legislation of Maryland (USA) and then introduced in other legislations, including the Italian one. Italy was indeed the first sovereign country that legally recognized this new type of organization, named as "società benefit" in 2016.

Benefit corporation represents the response to the dilemma of "doing good and doing well" that imposed social enterprise a choice between the maximization of shareholder profit and the pursuing of social and environmental objectives at the expense of profits (Clark Jr et al., 2012; McDonnell, 2014).

In the 1980s the term social enterprise was used to designate non-profit organizations that adopted business-like operational practices to earn income and generate revenue, so behaving like for-profit entities (Cummings, 2012). Subsequently, the CSR movement pushed for-profit entities to pursue social mission similarly to the traditional function of non-profit entities; for-profit social enterprises, adopting market-based strategy to pursue dual goals of making profit and pursue social good, emerged (Cummings, 2012; Haymore, 2011; McDonnell, 2014). The increasing diffusion of social enterprises as for-profit entities rather than non-profit organizations (Haymore, 2011) blurred the line between the non-profit and for-profit sectors and posed the basis for the introduction of a fourth sector joining the big three sectors of for-profit businesses, non-profit entities and government (Cummings, 2012; Thorelli, 2017).

The existing organizational forms did not fit well with the social enterprises' needs to combine profits and social good (McDonnell, 2014). The non-profit model was considered inappropriate as it did not allow investors to earn profit; the for-profit model also did not fit because imposed the maximization of profits and shareholder wealth. The shareholder primacy, indeed, permeated the for-profit legal framework also in those US states where the constituency statute had been introduced (Clark Jr et al., 2012). The constituency statutes – introduced in 41 American States (Hemphill et al., 2014) – are statutory expedients which allowed company's directors to take into consideration broader interests than merely maximize shareholders' profit. In particular, the constituency statutes permitted, but did not require in a legally binding way, that other interests – usually the interests of employees, customers, creditors, suppliers and local community – might be considered in director's decisions (Clark Jr et al., 2012; Hiller, 2013; McDonnell, 2014).

Additionally, the growing consumers demand for socially and environmentally responsible products and services, coupled with the socially responsible investing movement, are considered forces that resulted in the formation of a substantial marketplace for social enterprises that wanted to use the power of business to solve social problems (Clark Jr et al., 2012). According to Clark Jr et al. (2012), in the marketplace, as structured until the first decades of 21st century, it was difficult for companies that made profits in a socially and environmentally responsible way to distinguish themselves from competitors.

B Lab (where B stands for beneficial) – a non-profit network created in 2006 with the mission to change the economic system to benefit all stakeholders, peoples, communities and the planet, by exploiting the power of business (B Lab, 2023b) – tried to address these market and legal challenges. B Lab initially developed a certification system, the B Corp Certification, still existing, whose aim was to signal to investors and consumers purpose-driven companies while simultaneously benefit shareholders and stakeholders, including employees, consumers, the environment and the community in which it operates (Haymore, 2011). To obtain the B Corp certification a company must (i) demonstrate to have a high environmental and social performance by earning a satisfactory score (more than 80 points over 200) on a survey submitted by B Lab; (ii) submit documentation about its performance measurement to B Lab and permit that this information is publicly available; (iii) institutionalize its commitment to serving the interests of stakeholders by amending its governing documents (B Lab, 2023a). The latter requirement (i.e., taking into account stakeholders interests) conflicted with the existing corporate law which, in US legislation, attributed to company's director the duty to put shareholders first (Hasler, 2014). B Lab quicky realized that such a requirement violated the US corporate law and that could not be achieved by simply amending corporate charter but required a reformulation of corporate entity law. In 2008, B Lab started to develop a new corporate entity statute for what would be called "benefit corporation" (Collins et al., 2016). B Lab developed a template (called the Model Act) that state legislators could adopt to draft benefit corporation law and lobbied states to pass the benefit corporation law (Thorelli, 2017; Wilburn et al., 2014). Maryland became the first American state in 2010 to pass the benefit corporation legislation, followed by other American and European States (as mentioned, Italy was the first country). To date, benefit corporation legislation also exists in other countries in the world, namely Colombia, Porto Rico, Ecuador, Canada-British Columbia, Perù (*Società Benefit*, 2023).

Though the BC legislations and statutes differ from state to state (Hemphill et al., 2014), they share three main components: (i) purpose; (ii) accountability and (iii) transparency (B Lab, 2023d; Clark Jr et al., 2012; Hasler, 2014; Thorelli, 2017).

As to purpose, benefit corporations pursue a general public benefit and are allowed to identify one or more specific public benefit purposes. The general public benefit is defined either as a material positive impact on society and the environment, or as the obligation to operate in a responsible and sustainable manner (depending on the single legislation); a benefit corporation may also pursue a specific public benefit that allows company to pursue a personally selected mission (Hasler, 2014), which could be anything that confers any particular benefit on society or the environment (Thorelli, 2017). Some US benefit corporation laws provide a non-exhaustive list of specific public purposes that companies may pursue; for instance the California' benefit corporation law lists seven non-exhaustive possibility for the specific public benefit, namely (1) providing low-income communities with beneficial products or services; (2) promoting economic opportunity for communities; (3) preserving the environment; (4) improving human health; (5) promoting the advancement of knowledge, arts, or sciences; (6) increasing

the flow of capital to entities which benefit the environment or society; and (7) any other particular benefit on society or the environment. Choosing both a general public benefit and specific public benefit allows a benefit corporation to pursue its unique, individual objectives while also assuring its pursuit of broader societal goals (Hasler, 2014; Thorelli, 2017). The second element, accountability, is associated to an enlargement of the company's directors' duty: when making corporate decisions, directors are allowed to consider not only shareholders' financial interests but also all stakeholders interests. The third element, transparency, imposes benefit corporations to disclosure an annual report on social and environmental performance and impacts achieved; the reporting requirements also vary by state legislations, but many require that the annual report have to be prepared in accordance with a credible, independent, comprehensive and transparent third-party standard.

As mentioned, Italy was the first sovereign country in the world to introduce the benefit corporation legal status for companies, typically known as "società benefit". In Italy, benefit corporations were established by law 208/2015 that came into effect on 1st January 2016. The Italian legislation defines "società benefit" as a company which, in carrying out their economic activities shall pursue, in addition to the aim of distributing profits, one or more aims of common benefit, and operate in a responsible, sustainable and transparent way. Similarly to the US law, the Italian benefit corporation legislation commits company management to a higher standard of purpose, accountability and transparency (*Società Benefit*, 2023). As to the purpose, the Italian legislation defines the common benefit as the creation of one or more positive effects (or the reduction of negative effects) for individuals, communities, territories and the environment, cultural and social heritage, entities and associations as well as other stakeholders (all the individuals or groups of individuals directly or indirectly involved in, or affected by, the activities of the benefit corporation, as workers, clients, suppliers, lenders, creditors, public administration and civil society). The common benefit is the fundamental element that characterizes a benefit corporation as it has to be embedded in the company's article of association both when the company constitutes as benefit corporation and when an existing company transforms into benefit corporation by amending its articles of association. The Italian legislation does not list the common benefits that a company may pursue but specifies the stakeholders the benefit corporation is responsible for and has to be accountable. Moreover, the Italian benefit corporation legislation obliges benefit corporations to identify and appoint an individual (impact manager) with the specific role and task of pursuing the common benefit: such an aspect is a specific prescription of the Italian regulation. In regard to transparency, also Italian benefit corporations are required to produce and publish an annual report concerning the pursuing of common benefit that has to be attached to the annual financial statement and published on the company website, if it exists. The law also specifies the content that the annual report should include, namely: (a) the description of the specific objectives, modalities and actions implemented in order to pursue the aims of common benefit and the possible mitigating circumstances which have prevented, or slowed up, the achievement of the above aims; (b) the evaluation of the generated impact; and (c) the description of the new objectives that the company intends to achieve in the following fiscal year. As to the evaluation of the generated impact the Annex B of the Italian law identifies the areas of impact/evaluation that the annual report must cover that are: corporate governance, workers, other stakeholders, and environment. The legislation also prescribes that the evaluation of the generated impact has to be conducted by applying a third-party standard. It also

defines the requirements that the standard must have, but it does not prescribe the adoption of a specific standard (Legge 28 Dicembre 2015, n. 208, 2015).

3.3 Research Methodology

The systematic review was conducted by following the steps of the systematic literature review methodology explained in Section 1.4.1. In this section, the steps of SLR are detailed.

Questions formulation

The aim of the review is to investigate the academic literature of benefit corporations; in particular, the review aims to investigate the implication of benefit corporation model in the way of conceiving the economy and interpreting corporate social responsibility; to understand how and to what extent the strengths and critical issues of this model have been addressed by academic literature; the review intends also investigate which are the motivations behind the adoption and the diffusion of benefit corporation model, and how academic literature has addressed the peculiarities that characterize it, as well as the processes and practices that are implemented to achieve the dual purpose.
The review questions have been formulated as follows:

> RQ1: *Which are the implications of benefit corporation model with respect to the way of conceiving the economy and interpreting corporate social responsibility?*
>
> RQ2: *Which are the motivations and contingency factors enabling the introduction and the diffusion of benefit corporations? Which are the motivations that led companies to adopt the benefit corporation model or to transform into a benefit corporation? How has this transformation process been managed and with what difficulties and criticalities?*
>
> RQ3*: Which are the main strengths and critical issues of this new organizational model?*
>
> RQ4: *Which business processes and practices benefit corporations carry out to make their processes sustainable and achieve their dual purpose and their sustainability goals? Which are the stakeholders to whom benefit corporations are accountable? How and to what extent benefit corporations are transparent?*

Studies search

To address the identified review questions, keywords appropriate to the specific domain that the review intends to investigate were identified. In addition to the term "benefit corporation", the term "B Corp", often used as an abbreviation of benefit corporation, was considered; also, the acronym BCORP, although often ambiguously used to refer both to benefit corporation model and BCORP certification, was included in the keywords. The identified keywords were combined through the Boolean operator OR and the resulted search query was applied to the section Title/Abstract/Keyword of the multidisciplinary citational database Scopus. As shown in Table 3.1, the research was limited to the documents published since 2010 because this is the year in which the benefit corporation legislation passed for the first time. The research was also limited to documents written in English and published up to June 2023.

Table 3.1. Benefit corporation SLR – search query

Scopus search query	Research string	Retrieved documents
#1	((TITLE-ABS-KEY("benefit corporation" OR "B Corp*" OR BCORP*) AND (LIMIT-TO (PUBYEAR,2023) OR LIMIT-TO (PUBYEAR,2022) OR LIMIT-TO (PUBYEAR,2021) OR LIMIT-TO (PUBYEAR,2020) OR LIMIT-TO (PUBYEAR,2019) OR LIMIT-TO (PUBYEAR,2018) OR LIMIT-TO (PUBYEAR,2017) OR LIMIT-TO (PUBYEAR,2016) OR LIMIT-TO (PUBYEAR,2015) OR LIMIT-TO (PUBYEAR,2014) OR LIMIT-TO (PUBYEAR,2013) OR LIMIT-TO (PUBYEAR,2012) OR LIMIT-TO (PUBYEAR,2011) OR LIMIT-TO (PUBYEAR,2010)) AND (LIMIT-TO (LANGUAGE, "English"))	326

Studies selection and evaluation

The retrieved studies were collected in an Excel database and a screening process was carried out to eliminate those studies that do not address the review questions. After the application of the first inclusion criteria (to consider only peer reviewed articles and conference papers) a screening based on studies' abstracts was conducted. In a first instance, exclusion criteria were applied to eliminate those studies that do not focus on the investigated topic (benefit corporations) as well as those studies that addressed the more general topic of hybrid organizations; a second exclusion criterion allowed to eliminate those academic contributions that theoretically or empirically address topics related to BCORP certification. Then the documents available in full-text were read and a further screening was conducted. In particular, academic studies that only focus on the legislative and legal aspects of benefit corporation model were discarded (14 documents were eliminated after the application of this exclusion criterion) and two additional studies were eliminated as they do not fit any review question. A snowball searching (a procedure consisting in look back through the article's references) was also carried out to find additional relevant academic contributions which are in the reference list of the retrieved studies but have not been retrieved through the research on Scopus database. Two additional contributions were identified and added to the final dataset of academic studies that, at the end of the screening process, counts of 35 documents. Figure 3.1 shows the systematic literature review process and Table 3.2 reports the bibliographic information of the final dataset of academic contributions.

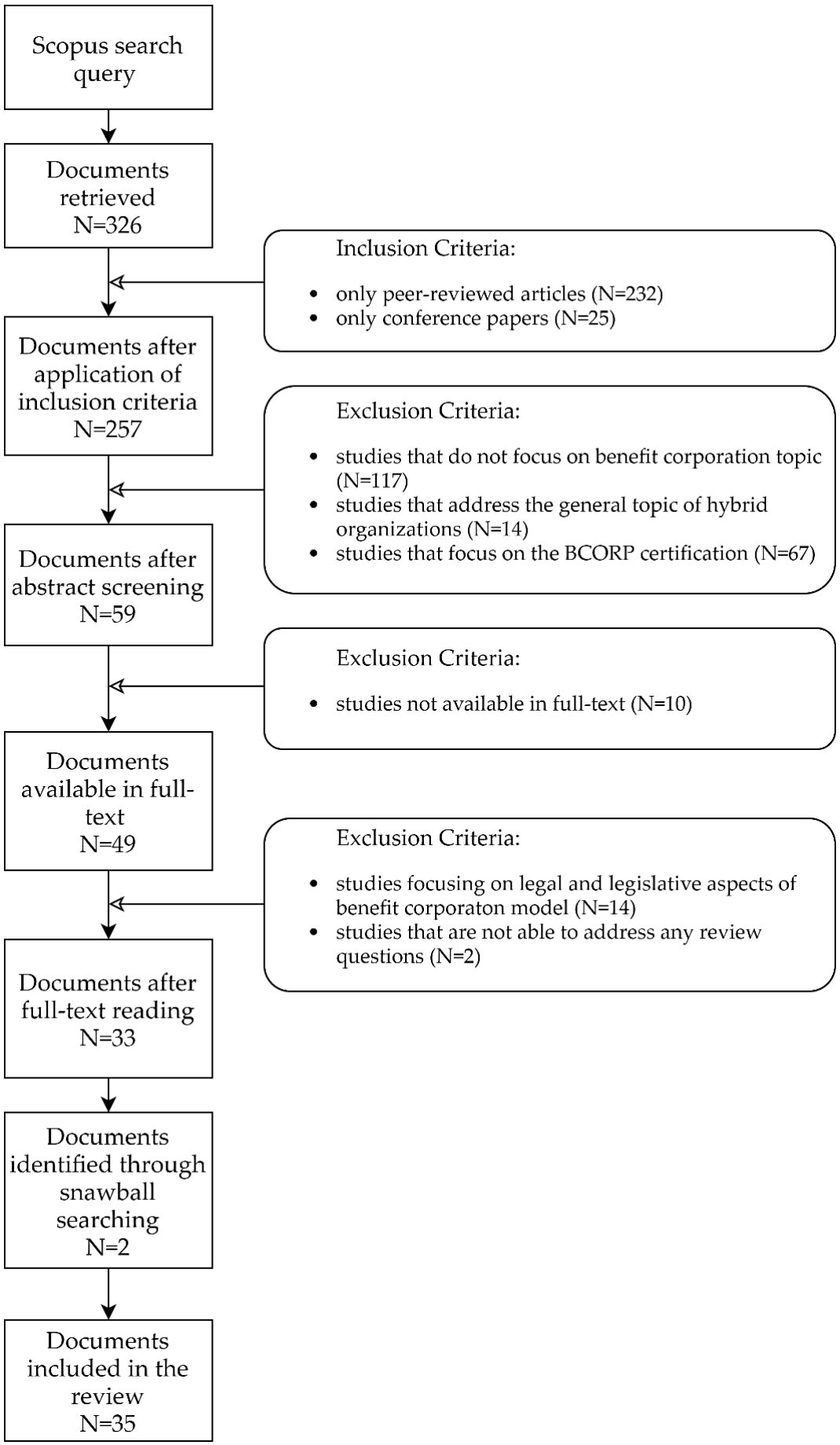

Figure 3.1. Benefit corporation – systematic literature review process

Table 3.2. Benefit corporation SLR – final dataset of academic studies

ID	Authors	Title	Year	Source title
1	Mion G., Loza Adaui C.R., Bonfanti A., De Crescenzo V.	Mission statements and financial and sustainability performance: An exploratory study of Benefit Corporations certified as B Corps	2023	Journal of Business Research
2	Ventura L.	Philanthropy and the For-profit Corporation: The Benefit Corporation as the New Form of Firm Altruism	2022	European Business Organization Law Review
3	Kurland N.	Mission alignment in the hybrid organization: the role of indirect support activities and an activity ecosystem	2022	Social Enterprise Journal
4	Bandini F., Boni L., Fia M., Toschi L.	Mission, governance, and accountability of benefit corporations: Toward a commitment device for achieving commercial and social goals	2022	European Management Review
5	Marchini P.L., Tibiletti V., Fellegara A.M., Mazza T.	Pursuing a strategy of 'common benefit' in business: The adoption of the benefit corporation model in Italy	2022	Business Strategy and the Environment
6	Galli D., Torelli R., Tibiletti V.	Signaling the adoption of the benefit corporation model: A step towards transparency	2021	Sustainability (Switzerland)
7	Mion G., Loza Adaui C.R., Bonfanti A.	Characterizing the mission statements of benefit corporations: Empirical evidence from Italy	2021	Business Strategy and the Environment
8	Kurland N.B., Schneper W.D.	A Social Enterprise's Hybridising Journey to Reconcile Goals and Structure with Identity	2021	Journal of Social Entrepreneurship
9	Mion G.	Organizations with impact? A study on Italian benefit corporations reporting practices and reporting quality	2020	Sustainability (Switzerland)
10	Mion G.	Understanding the purpose of benefit corporations: an empirical study on the Italian case	2020	International Journal of Corporate Social Responsibility
11	Nigri G., Del Baldo M., Agulini A.	The Mondora Method: Quantum Leaders in Benefit Corporations	2020	Entrepreneurship Research Journal
12	Nigri G., Del Baldo M., Agulini A.	Governance and accountability models in Italian certified benefit corporations	2020	Corporate Social Responsibility and Environmental Management
13	Baudot L., Dillard J., Pencle N.	The emergence of benefit corporations: A cautionary tale	2020	Critical Perspectives on Accounting
14	Gazzola P., Grechi D., Ossola P., Pavione E.	Certified Benefit Corporations as a new way to make sustainable business: The Italian example	2019	Corporate Social Responsibility and Environmental Management
15	Del Baldo M.	Acting as a benefit corporation and a B Corp to responsibly pursue private and public benefits. The case of Paradisi Srl (Italy)	2019	International Journal of Corporate Social Responsibility
16	Wilburn K., Wilburn R.	Benefit corporations: An analysis of social benefit reporting	2019	Business and Professional Ethics Journal
17	Nigri G., Baldo M.D.	Sustainability reporting and performance measurement systems: How do small- and medium- sized benefit corporations manage integration?	2018	Sustainability (Switzerland)
18	Miller-Stevens K., Taylor J.A., Morris J.C., Lanivich S.E.	Assessing Value Differences Between Leaders of Two Social Venture Types: Benefit Corporations and Nonprofit Organizations	2018	Voluntas
19	Lee J.	Benefit corporations: A proposal for assessing liability in benefit enforcement proceedings	2018	Cornell Law Review
20	Hiller J.S., Shackelford S.J.	The firm and common pool resource theory: Understanding the rise of benefit corporations	2018	American Business Law Journal

ID	Authors	Title	Year	Source title
21	Cetindamar D.	Designed by law: Purpose, accountability, and transparency at benefit corporations	2018	Cogent Business and Management
22	Kurland N.B.	Accountability and the public benefit corporation	2017	Business Horizons
23	Cho M.	Benefit corporations in the United States and community interest companies in the United Kingdom: Does social enterprise actually work?	2017	Northwestern Journal of International Law and Business
24	Collins J.L., Kahn W.N.	The hijacking of a new corporate form? Benefit corporations and corporate personhood	2016	Economy and Society
25	Jonsen R.H.	Other-constituency theories and firm governance: is the benefit corporation sufficient?	2016	Journal of Management, Spirituality and Religion
26	Tu K.V.	Socially conscious corporations and shareholder profit	2016	George Washington Law Review
27	Cetindamar D.	Organizations with purpose: Benefit corporations	2015	Portland International Conference on Management of Engineering and Technology
28	André R.	Benefit corporations at a crossroads: As lawyers weigh in, companies weigh their options	2015	Business Horizons
29	Hemphill T.A., Cullari F.	The benefit corporation: Corporate governance and the for-profit social entrepreneur	2014	Business and Society Review
30	Hasler J.E.	Contracting for good: How benefit corporations empower investors and redefine shareholder value	2014	Virginia Law Review
31	Wilburn K., Wilburn R.	The double bottom line: Profit and social benefit	2014	Business Horizons
32	Hiller J.S.	The Benefit Corporation and Corporate Social Responsibility	2013	Journal of Business Ethics
33	Kanig I.	Sustainable capitalism through the benefit corporation: Enforcing the procedural duty of consideration to protect non-shareholder interests	2013	Hastings Law Journal
34	André R.	Assessing the Accountability of the Benefit Corporation: Will This New Gray Sector Organization Enhance Corporate Social Responsibility?	2012	Journal of Business Ethics
35	Cummings B.	Benefit corporations: How to enforce a mandate to promote the public interest	2012	Columbia Law Review

Studies analysis and synthesis

To analyse the final dataset of academic studies, a data extraction form was compiled. The data extraction form includes bibliographic data (authors, title, publication year, source title) of studies included in the review and some general dimensions, namely: the type of study (if the study addresses the topic from a theoretical/conceptual perspective or form a more empirical/practical perspective); the methodology adopted by each study, if any; the geographical location (i.e., the country where the benefit corporations analysed in the study are located or the country whose benefit corporation model is analysed). In order to systematize and synthetize knowledge emerging from the entire dataset, some dimensions of analysis, specifically related to each research question, were included in the data extraction form. Table 3.3 specifies the dimensions of analysis adopted to analyses the academic studies and address the review questions.

Table 3.3. Dimensions of analysis adopted in the benefit corporation SLR

Review question	Dimensions	
RQ1: Which are the implications of benefit corporation model with respect to the way of coceoving the economy and interpreting corporate social responsibility?	BC & economy conception/ corporate theory	Academic studies dealing with the implications of benefit corporation with respect to the way to conceive the economy, namely studies addressing the position of benefit corporations with respect to corporate theories
RQ2: Which are the motivations and contingency factors enabling the introduction and the diffusion of benefit corporations? Which are the motivations that led companies to adopt the benefit corporation model or to transform into a benefit corporation? How has this transformation process been managed and with what difficulties and criticalities?	Motivations and enabling factors	Academic studies addressing the external and contextual conditions that favour the introduction and flourishing of benefit corporation model
	BC model adoption	Academic studies addressing the motivation under the adoption of the model, the transformation process implemented, the difficulties and criticalities addressed by companies that transformed into benefit corporation
RQ3: Which are the main strengths and critical issues of this new legal model?	Strengths and weaknesses	The main strengths and critical aspects of benefit corporation model addressed by academic literature
RQ4: Which business processes and practices benefit corporations carry out to make their processes sustainable and achieve their dual purpose and their sustainability goals? Which are the stakeholders to whom benefit corporations are accountable? How and to what extent benefit corporations are transparent?	Purpose	Academic contributions which analyse the purpose and mission of benefit corporations
	Accountability to whom	Academic studies focusing on the stakeholders to whom benefit corporations are accountable and which are the beneficiaries of the value generated by benefit corporations
	Accountability for what	(i) Academic contributions addressing how benefit corporations pursue their dual purpose, in terms of practices and business processes they implement to achieve their dual purpose and their sustainability goals (ii) Academic studies focusing on the impact assessment of benefit corporations, namely on how benefit corporations measure their social and environmental impacts and performance
	Transparency	Academic contributions focusing on the annual benefit report, in terms of document content and the implemented reporting process

Table B in Appendix reports the classification of the academic studies included in the review based on the aforementioned dimensions of analysis.

3.4 Findings

In this Section the results of the review, both in terms of bibliometric and thematic analysis, as well as the main research gaps are presented.

3.4.1 Bibliometric analysis

The academic contributions included in the final dataset are published in between 2012 and 2023; most of them (more than 74%) were published in a recent period, after 2016. Figure 3.2 shows the number of academic contributions published in the time frame, by distinguishing between contributions that have addressed the topic of benefit corporation from a theoretical perspective and those that have empirically addressed it. As it can be seen, initially the topic was mainly addressed from theoretical perspective, and more recently academic scholars have conducted empirically studies on benefit corporations.

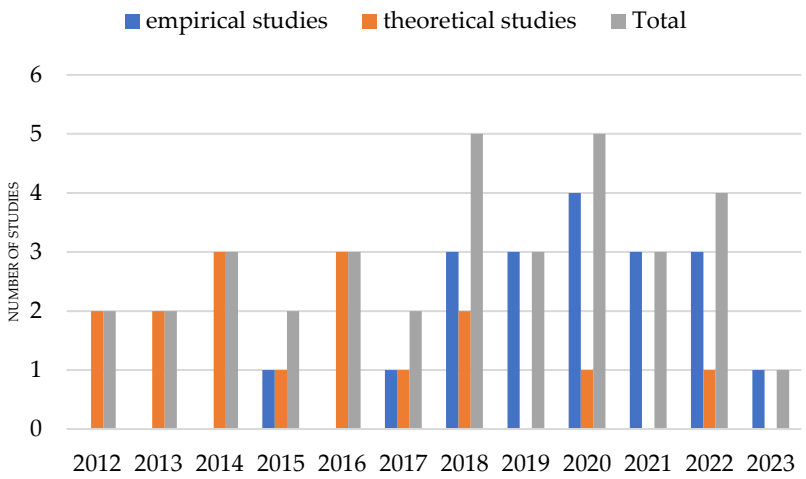

Figure 3.2. Benefit corporation SLR – distribution of academic contributions over the years

As already mentioned, the literature review was limited to academic contributions published as articles and conference papers. The analysis of journals in which the articles are published shows that there is not a dominant journal, as the 35 contributions included in the review are published in 27 different journals with a slight prevalence of articles published in "Business Horizons" and "Sustainability (Switzerland)" (with three articles per journal) and "Journal of Business Ethics", "International Journal of Corporate Social Responsibility", "Business Strategy and the Environment", "Corporate Social Responsibility and Environmental Management" (with two articles per journal).

As to the academic scholars that contributed to benefit corporation field, the conducted analysis revealed that 48 scholars contributed to the field, most of them with a single contribution. Table 3.4 reports some details on the nationality, affiliation of scholars and number of contributions published by each scholar. Most scholars are American (22 out to 48), followed by Italian scholars (19 out to 48). Only 13 scholars are authors of more than a study on benefit corporations and, among them, six are Italian scholars. The scholars' nationality reflects the geographical distribution of benefit corporation model that, as already mentioned, were first introduced in USA and subsequently in Italy. A scholars' map was developed to visualize the scholars and research group that contributed to the field (Figure 3.3). The map was created with VOSviewer (version 1.6.14), a software tool for visualizing bibliometric networks. The map considers scholars as unit of the analysis; the map is based on co-authorship analysis that means that the relationship between two items (in this case two authors) is determined by the number of co-authored documents. A thesaurus file was also developed aimed to perform a data cleaning (for instance to reconduct those scholars that in the bibliographic data are written in two different manners to a single scholar) and obtain a more consistent map. All the default parameters set up by the software was adopted to create the map. In the scholars' map each circle represents the number of papers published by each scholar (so the dimension of the circles corresponds to the number of published documents reported in Table 3.4). The link between two scholars represents the number of studies co-authored by two scholars. Additionally, the map in Figure 3.3 provides information on the period of time when each scholar published the studies (in the overlay visualization provided by VOSViewer the colour of each items indicates the average publication year of studies published by each scholar).

Table 3.4. List of scholars contributing to Benefit corporation field

Country Affiliation and scholars	Number of published documents
Italy	**29**
Alma Mater Studiorum Università di Bologna	*3*
Bandini, F.	1
Fia, M.	1
Toschi, L.	1
Libera Università Maria Ss. Assunta	*5*
Agulini, A.	2
Nigri, G.	3
Politecnico di Milano	*1*
Boni, L.	1
Università Cattolica del Sacro Cuore	*3*
Fellegara, A.M.	1
Galli, D.	1
Torelli, R.	1
Università degli Studi dell'Insubria	*3*
Gazzola, P.	1
Grechi, D.	1
Pavione, E.	1
Università degli Studi di Urbino Carlo Bo	*4*
Del Baldo, M.	4
Università degli Studi di Verona	*6*
Bonfanti, A.	2
De Crescenzo, V.	1
Mion, G.	3
Università di Parma	*4*
Marchini, P.L.	1
Mazza, T.	1
Tibiletti, V.	2
United States	**28**
Auburn University	*1*
Morris, J.C.	1
Ball State University	*1*
Pencle, N.	1
Colorado College	*1*
Miller-Stevens, K.	1
Cornell Law School	*1*
Lee, J.	1
Franklin and Marshall College, Lancaster	*3*
Kurland, N.B.	2
Schneper, W.D.	1
Hastings College	*1*
Kanig, I.	1
James Madison University	*1*

Country Affiliation and scholars	Number of published documents
Taylor, J.A.	1
Northeastern University	*2*
André, R.	2
Rowan University	*1*
Jonsen, R.H.	1
St. Edward's University	*4*
Wilburn, K.	2
Wilburn, R.	2
University of California, Los Angeles	*1*
Cho, M.	1
University of Central Florida	*1*
Baudot, L.	1
University of Maryland, College Park	*1*
Tu, K.V.	1
University of Memphis	*1*
Lanivich, S.E.	1
University of Michigan-Flint	*2*
Cullari, F.	1
Hemphill, T.A.	1
University of Virginia School of Law	*1*
Hasler, J.E.	1
University of Wisconsin Madison	*2*
Kahn, W.N.	1
Collins, J.L.	1
Virginia Tech, Pamplin College of Business	*3*
Hiller, J.S.	2
Shackelford, S.J.	1
Germany	**2**
CBS International Business School	*2*
Loza Adaui, C.R.	2
Cummings, B.	1
Dillard, J.	1
Australia	**2**
University of Technology Sydney	*2*
Cetindamar, D.	2
United Kingdom	**1**
Cambridge Institute for Sustainability Leadership	*1*
Ventura, L.	1
Switzerland	**1**
César Ritz Colleges	*1*
Ossola, P.	1

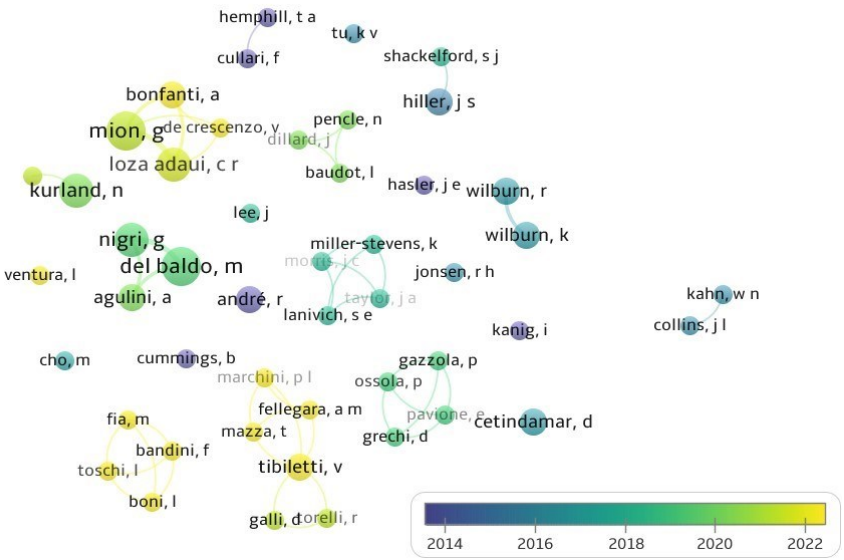

Figure 3.3. Benefit corporation – scholars' map

3.4.2 Thematic analysis

The final dataset of 35 academic studies includes both empirical and theoretical contributions on benefit corporations. Particularly, 19 studies empirically addressed the topic, while the remaining ones are theoretical contributions. It is worth noting that most empirical studies refer to the Italian context.

To describe the themes addressed by each study included in the review, a keywords' map was created by adopting the software tool VOSviewer (version 1.6.14). In Figure 3.4 a co-occurrence map is reported; such a map represents the keywords that scholars have adopted at least two times to shortly describe their work (as a minimum number of two occurrence was set up); also, a thesaurus was built to merge those terms that have the same meaning, but the software recognizes as different (for instance, the plural form of the same word). A total number of 19 keywords were included in the map. The dimension of the circle represents the number of times the terms appear in the publications' keywords and the link between two terms represents the number of documents in which the terms appear together (thicker is the line that links two terms, more are the documents in which the terms are considered together).

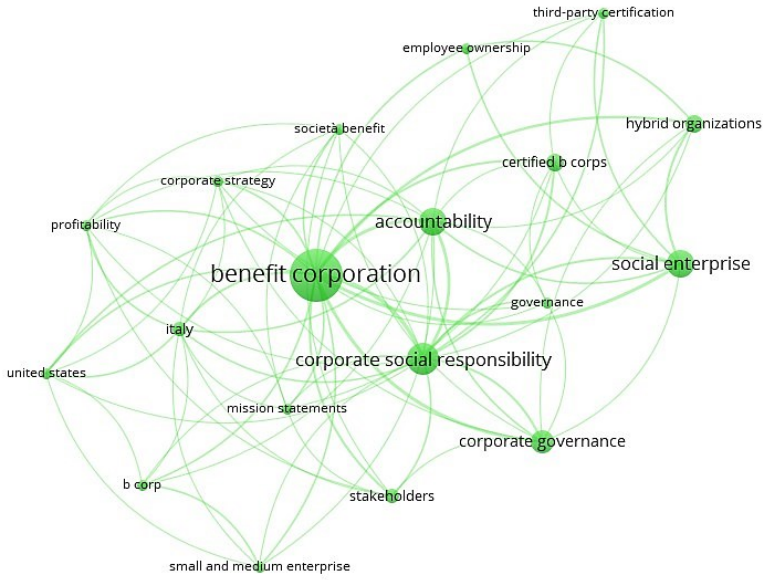

Figure 3.4. Benefit corporations – scholars' keywords co-occurrence map

The keywords' map allows to understand, at first glance, which are the themes that academic literature have investigated. For instance, the map shows that many academic studies have investigated the relationship between benefit corporation and corporate social responsibility, as well as the aspects related to governance, mission statements, stakeholders, and accountability.
In the following, the academic contributions are discussed.

Benefit Corporations' implications with respect to corporate theories

Several scholars dealt with the implications of benefit corporation model with respect to corporate theories and the way of conceiving the economy. A widely accepted perspective among academic scholars conceives benefit corporation as a model set out to address and provide a solution to the contrast between the dominant shareholder value norm (that imposes company' s directors to consider only shareholders' interests in the decision-making and ignore the stakeholders' interests) and the stakeholder theory (that allows company's director to consider a broader group of stakeholder interests when making decisions) (Hiller, 2013; Jonsen, 2016; Kanig, 2013). Benefit corporation fits into stakeholder theory as the benefit corporation statute explicitly adopts a stakeholder perspective in identifying to whom the enterprise is to socially benefit, including both those who have a financial, as well as nonfinancial, interest (Hemphill et al., 2014); in other words, benefit corporation allows companies to legally choose to consider also stakeholder interests in the decision-making (Hiller, 2013; Jonsen, 2016). However, some academic scholars disagree with this perspective. Andrè (2015) argues that the shareholder value norm is not a legal obligation but rather a social norm as also US law gives company a wide range of discretion to consider both shareholders and stakeholders interests.
Other scholars - that disagree with the common assumption that benefit corporation contrasts with the shareholder value norm - focus on the role and power of shareholders in the benefit corporations and the nature of the interests and values they purse when they invest in a socially responsible business. Hasler (2014) rejects the common accepted assumptions that justify the existence of benefit corporation as an entity that offers an alternative to shareholder value norm and points out that benefit corporation only apparently marginalizes the role and power of shareholders: in the practice, and differently by traditional corporations, benefit corporation' shareholders are not only able to require company's directors to maximize their investment, but they are also able to tell directors how to do so, so obtaining a more control over corporate governance; benefit corporations' shareholders require to maximize their subjective value and this translates in a more sustainable day-to-day operations because shareholders have required a dual return. A similar view is shared by Ventura (2022) who states that benefit corporation only apparently contrasts with the shareholder value norm: she defines benefit corporation model as a vehicle for firm altruism, more efficient than not-for-profit organisations, and characterised by a deeper and lasting impact on the environment and civil society, given the integration of altruistic values within the framework of the business purpose clause. According to Ventura (2022), the benefit corporation model attenuates the shareholder value maximization paradigm in favour of shareholder welfare maximization as dual purposes — selfish (for profit-making) and altruistic (for the public benefit)—are both desired by the corporate's shareholders.
Benefit corporation is an organizational form that allows the pursuit of Corporate Social Responsibility as it provides legal protection to managements that want to both maximize shareholder value and pursue a social or environmental goals (André, 2012). Hiller (2013) argues that benefit corporation is a form of business that implements and supports CSR: to support such thesis, Hiller adopts the CSR

theoretical framework proposed by Crane (2014) to verify if benefit corporation organizational model meets all the requirements underlying corporate social responsibility; Hiller (2013) concludes that benefit corporation model fits into CSR as a company may intentionally choose to constitute or become a benefit corporation, because it considers stakeholders, because social and environmental concerns are part of the corporation's value system (as they are embedded in the articles of incorporation or statute), and because benefit corporation model operationalize CSR by means of annual assessment and reporting. Additionally, for Hiller (2013), benefit corporation may be viewed as a hybrid form that promotes the integration of profit and social purpose in in a way similar to what proposed by the shared value framework (Porter et al., 2006). Hiller et al. (2018) adopted common pool resource theory to explain the nature of benefit corporation: the benefit corporations create common pool resources as they require business to consider interests that are more broadly distributed across society rather than focusing on the primacy of shareholder interests.

Motivations and enabling factors

Andrè (2015) argues that the shareholder value norm is not a legal obligation but rather a social norm as also US law gives company a wide range of discretion to consider both shareholders and stakeholders interests. Cummings (2012) also argues that, despite the common perception that corporate directors are legally bound to maximize shareholder wealth, the US legislations in the practice permitted directors to consider also non shareholder interests; for Wilburn et al. (2014), the need to consider both shareholders and stakeholders interests was a weak basis and prerequisite for the introduction of benefit corporation, as also traditional corporations were able to consider stakeholders' interests in the US context.

Aaccording to Cummings (2012), benefit corporation model was introduced in US legislation above all to solve some practical barriers that for-profit social enterprises faced, rather than to legally legitimate the stakeholder interest's consideration. These practical barriers concerned (i) the difficult to raise capital (because for-profit social enterprises usually cannot ensure market-rate returns to investors and because foundations and governments are leery of giving grants to a profit-making entity), (ii) the need to prevent the greenwashing, and (iii) the difficult to prevent and avoid that the company may be acquired by a new leadership that may want to prioritize profits, neglecting the social purpose. As to the motivations and rationale under the introduction of benefit corporation model, Tu (2016) reports the market justification for the growing socially conscious businesses that needed for a reliable method for signalling their social mission and their socially and environmentally responsible way to operate.

Wilburn et al. (2014) argue that benefit corporations have the potential to develop a fourth sector of the economy in which companies adopt socially responsible business practices to create both profit and social benefit. By referring to US context, these authors identify in the fiscal advantage (in terms of fiscal deducibility of money invested in social benefit practices) one of the key motivations that may persuade larger companies to change from traditional for-profit model to benefit corporation model, so contributing to the broader diffusion of benefit corporations.

Benefit corporation model adoption

Some academic contributions empirically investigate the motivations that conducted companies to become benefit corporations. Kurland (2017) analyses the experience of an American environmental consulting firm that changed from conventional legal structure to a benefit corporation and reports the company's CEO motivations that were at the basis of the transformation into benefit corporation. The

study shows as the need to create social good in addition to the creation of value for shareholders and the need to protect the company from un unfriendly takeover are the main motivations for the adoption of benefit corporation model, empirically confirming the motivation that, according to Cummings (2012), are at the basis of the introduction of BC in the legislation. Del Baldo (2019) conducts a single case study in which, through in-depth interviews, analyses the experience of an Italian company that adopted the benefit corporation model since 2016. In this case, the main motivation for becoming a benefit corporation is the need to formalize the historically, pre-existing and intrinsic CSR orientation of the company; the analysed company considers the adoption of benefit corporation organizational model as a way to formally recognize the company orientation toward CSR, as it had always pursue a dual purpose despite the absence of formalization (i.e., with no defined roles as CSR office) and the absence of tools to communicate this orientation (as sustainability report). Such a motivation, i.e., the need to obtain formal recognition of the pre-existing CSR orientation, is also detected in the multiple case study conducted by Nigri et al. (2020a) on seven Italian certified BCORP benefit corporations and in the multiple case study conducted by Marchini et al. (2023); additionally, the multiple case study conducted by Marchini et al. (2023) on a sample of 53 Italian benefit corporations demonstrates that other motivations are at the basis of BC adoption, namely the possibility to increase the company reputation and to attract employees interested in sustainability issues. Financial returns seem not to be a motivation for becoming a benefit corporation. The need to formalize and to provide a greater evidence of the social-oriented mission already consolidated before (and independently from the adoption of the benefit corporation model) emerges also in the content analysis of non-native benefit corporations' mission statements conducted by Mion et al. (2021). Other motivations at the basis of the choice of becoming a benefit corporation are connected to the ethical and personal values of the company ownership (Mion et al., 2020). In regards to this point, Miller-Stevens et al. (2018) investigate the value set that is at the basis of the choice of the benefit corporation organizational form over nonprofit organizational form by comparing the value set of benefit corporations' leaders with the nonprofit organizations one. The authors survey the executives, managers and supervisors of American benefit corporations and nonprofit organizations, asking them to rank 20 common values, including traditionally public sector values (e.g., accountability, representativeness and justice), traditionally private sector value (e.g., entrepreneurship and individualism) and traditional nonprofit values (e.g., charity, generosity and altruism). The results demonstrate that a substantial coincidence of values exists in the two analysed groups as benefit corporations' and nonprofit organizations' leaders similarly ranked most of values like integrity, trust, effectiveness, accountability, flexibility, responsiveness equity, representativeness and individualism. The biggest difference in the ratings of values emerges for innovation and entrepreneurship values which are considered more important by benefit corporations' leaders that nonprofit organizations' leaders.

Kurland (2017), by analysing the history of an environmental consulting firm that decided to transform into a benefit corporation, describes the five phases of the fulfilled transformation process: establishing the conditions for awareness; inquiry; legal transformation; implementation-structural transformation; measuring outputs, outcomes and impact; in a subsequent contribution, Kurland (2021) synthesizes the hybridization process into four phases (animating, cultivating, advocating, and sustaining) and discusses the organizational mechanisms - legal, accountability, socialisation, and inclusion – that dominated each phase. Furthermore, Kurland (2022) identifies some supporting activities that are

fundamental for a successful transformation process into benefit corporation (i.e., leading, listening, training, accounting and branding) and discusses the main challenges that the analysed company faced in the transformation process into a benefit corporation: becoming a benefit corporation requires a high level of trust and a strong commitment of the leadership; the implementation of an effective measurement strategy is another challenge that a company transforming into a benefit corporation has to face as the company should have to be able to measure its impact on community and ecosystem by adopting appropriate metrics; also, a company transforming into a benefit corporation has to face communication challenges both externally and internally: the benefit corporation status, according to Kurland (2017), is not a differentiator especially internally, for employees to which the company has to be accountable and to which the company has to communicate the advantages related to become benefit corporation so as they can understand how this change can positively affect their everyday work.

Strengths and weaknesses

Several academic studies address the advantages and critical issues of benefit corporation model. Compared with other organizations that seek to pursue a social mission as non-profit organizations, benefit corporation has significant advantages in terms of raising capital: being a for-profit company, benefit corporation may obtain bank loan and go public to obtain capital on the market (Lee, 2018). Another important advantage of benefit corporations identified by academic scholars refers to reputation: benefit corporation status allows company to advertise and brand themselves as social mission driven and socially responsible corporation (Cho, 2017; Lee, 2018); the benefit corporation also permits companies to differentiate themselves from traditional for-profit companies and this may be an effective tool to convince consumers that by purchasing from the company, they are not merely purchasing for one's own benefit but they are contributing to a greater social good (Cho, 2017). Also a psychological advantage related to the utility that individuals receive from the act of contributing to the public good is mentioned as strengths of benefit corporations (Lee, 2018).

The main critical issues of benefit corporation have been addressed by academic studies which analysed the inconsistencies of norms that regulate the benefit corporations, in particular the US legislation. A first critical point of benefit corporation model refers to the broad and vague definition of the general and specific public benefit purposes that benefit corporation has to pursue that leave the organization's missions open to many interpretations (André, 2012); according to Lee (2018) the vague definition of the general public benefit gives company leeway when becomes a benefit corporation but it also implies a risk of greenwashing, namely the risk that corporations claiming a general public benefit would be able to take advantage of benefit corporation status while only tangentially pursuing socially beneficial missions or pursuing them in a way that results in negligible positive impacts. Kanig (2013) argues that the purpose of benefit corporation is subject to "creative accounting" as legislation does not provide any hierarchy of purpose between profit seeking and provision of public good, so leaving the directors with a discretion as to what goals pursue. The fact that legislation does not detail how benefit corporation simultaneously pursues profits and public purpose is viewed as a risk of greenwashing (Kanig, 2013; Lee, 2018) but it can be also considered a strengths point: it implies flexibility and makes benefit corporation able to tailor its goals to promote and pursue social good in an innovative and effective way (Cho, 2017). Many scholars discuss the critical issues related to the accountability model envisaged by norms regulating benefit corporations, which potentially may reduce the effectiveness of benefit corporation model. First, academic scholars (André, 2015; Cummings, 2012; Lee, 2018) argue that the

mandatory preparation and publication of the annual benefit report could be burdensome, particularly for smaller enterprises both in terms of effort (i.e., time to collect and report data) and in terms of costs (i.e., the costs that benefit corporation has to pay to obtain the third-party evaluation); for Lee (2018) this financially effort could place benefit corporations at a financial disadvantage, particularly when the traditional for-profit companies are not required to undergo regular review. Although many US legislations require benefit corporation the publication of the annual report, they do not detail the content that this document should have (Cho, 2017). Additionally, some critiques are moved by academic scholars to the accountability system that relies on a third-party standard and certification that is released by a third-party organization and achieved by company after a formal audit and the payment of a fee. Many scholars note that there is no consensus on which third-party standards are acceptable to assess environmental and social performance and which independent organizations are qualified to provide the standard; indeed, most legislations do not specify which third parties evaluator are credible and acceptable and only some legislations indicate the non-profit organization B LAB as referring third-party evaluator (André, 2012; Cho, 2017; Hemphill et al., 2014). Another critical point of the accountability model is related to the conflict of interest that may arise between benefit corporations and the third-party certification organization (e.g., B LAB) as it generally requires a fee to benefit corporation that uses its evaluation system, so creating a financial relationship between benefit corporation and its third-party evaluator (André, 2012; Hemphill et al., 2014). A fundamental criticism that academic scholars move to benefit corporation model refers to the absence of oversight mechanisms: neither the company's directors nor the corporation itself can be sanctioned if the company strays from its initial social purpose (even if third-party assessment demonstrates that the company is performing in violation of its stated social purpose) or if the company does not meet the statutory requirements, e.g., if a company does not provide the annual report (Cho, 2017; Hemphill et al., 2014). Cummings (2012) also critiques such aspect of benefit corporation accountability model which basically intends to regulate corporate behaviour by threatening company reputation rather than adopt legal sanctions. Another critical point refers to the increase of liability that the adoption of benefit corporation model implies as it explicitly obliges directors to consider stakeholders interests in addition to shareholder interests (André, 2015; Lee, 2018), though benefit corporation governance does not give workers, consumers or community members any voice in corporate governance (Collins et al., 2016).

Some scholars negatively consider the emergence of benefit corporations: for instance, Baudot et al. (2020) by analysing the publicly available data on the legislative debates that took in place in US states which introduced benefit corporation legislation, assert that benefit corporation can be a means by which the responsibility for public services and public welfare is transferred to the private sector; also, André (2012) has some reservation on benefit corporation model as he argues that this form of business, by exploiting the strong image of CSR-oriented company, could become a formidable competitor for traditional sustainable companies, undermining the free-market economy.

Purpose

Many academic studies focus on the analysis of the mission statements that benefit corporations are obliged to include in their article of association and through which they declare how they intend to pursue their purpose in terms of common benefit. Cetindamar (2018) analyses the article of association of a sample of American benefit corporations and notes that, even though the law requires them to state their common benefits in this documents, nearly half of the companies left the purpose statement empty

and the majority of the companies who indicate their purposes do so in very brief statements, ranging from one or two sentences to a short paragraph. A partially overlapping result emerges from the study conducted by Mion et al. (2021) on the mission statement declared by 125 Italian benefit corporations; the study results reveal a different communication style among the Italian benefit corporations: some companies adopt a very concise style, and some others adopt a narrative style (by providing details about the company history or the company activities through which the mission statement is concretized and operationalized). To study the social purpose of benefit corporations, Cetindamar (2018) conducts a content analysis of the article of association of 151 American benefit corporations and codifies the declared social purpose according to the seven principal purposes envisaged by American law in the categories: community, job creation, environment, health, art and science, capital and other. Mion et al. (2020) carry out a content analysis of the mission statements publicly declared by 94 Italian benefit corporations with the aim to provide empirical evidence about the purpose of benefit corporations that is vaguely and generically defined by Italian BC law. The authors identify some common elements, namely law conformity, sustainability, common good and profit creation: many companies describe the purpose by providing the reference law only, without making any effort to concretize and operationalize how they pursue benefit; also, many companies refer to the broad concept of sustainability to define their purpose, with a predominance of environmental dimension of sustainability; other companies simply declare a purpose of contributing to the sustainable development; companies that declare to pursue common good generally interpret this purpose as the capacity to contribute positively to societal change or to contribute to improve the condition of a particular territory and local community; also the creation of profit is included in the BCs' mission statements: these companies see profit-making as the best instrument through which a company can reach its economic sustainability and contribute positively to society. Although detected in a limited number of companies, the profit sharing is another common benefit mentioned in the Italian benefit corporations' mission statements, pursued more frequently by small and medium companies (Marchini et al., 2023). After a qualitative content analysis of the mission statements declared by 125 Italian benefit corporations, Mion et al. (2021) applied a hierarchical cluster analysis to detect homogenous groups of concepts within textual corpus and generated three clusters of mission statements: the first cluster, called "promotion of individual skills" includes all the mission statements that focus on individual characters, values, skills, and culture of the founders (or managers) and see the benefit corporation as a way to promote and operationalize these values; the second cluster includes the mission statements that emphasize the uniqueness or novelty of the business model that emerges from recognition as a BC; the third cluster refers to those benefit corporations that seems to understand themselves as social players devoted to preserving, promoting, and developing social and environmental heritages as well as the history, the culture and the traditions of the territory in which they operate. In a subsequent contribution, Mion et al. (2023) investigate the main components of the Italian benefit corporations' mission statements and the relationship between BCs' mission statements and their sustainability and financial performance. To that end, Mion et al. (2023) consider a sample of Italian benefit corporations that are also certified BCORP and consider the BIA index as environmental and social measure. By adopting a fuzzy set qualitative comparative analysis (fsQCA) these authors show that the sustainability performance depends on multiple factors and the combination of factors leading to higher sustainability performance differs from those leading to lower sustainability performance.

Accountability to whom - stakeholders

The analysis of benefit corporations' mission statements has been also conducted by several academic scholars with the aim to investigate the stakeholders to whom benefit corporations should be accountable and that should benefit from the public good pursued by benefit corporations. For instance, Cetindamar (2018) identifies the main stakeholder groups that were referenced in the mission statements of the analysed American BCs, namely society (human being, people, society at large, public, community), nature and environment, social business (non-profits, institutions, non-government organizations, charities). The analysis of stakeholders mentioned in the BCs' mission statements conducted by Mion et al. (2023) reveals that employees, customers, and environment are frequently cited as stakeholders, while investors are rarely cited, confirming the focus on environmental and social concerns of BC mission statements. Marchini et al. (2023) conduct a content analysis of the common benefits declared by 53 Italian benefit corporations and classify it according to the area of interests envisaged by the BIA standard (i.e., governance, workers, community, environment and customers); the conducted analysis reveals that the majority of companies pursue common benefit for the community in which they operate, followed by common benefit for the environment, and then for workers, while customers are stakeholders considered by a limited number of considered companies. Additionally, the relationship between the stakeholders mentioned in the common benefit objectives and some companies' characteristics (size, profitability, growth, industry, and location) is investigated through a regression analysis: the results demonstrate that smaller companies mainly focus on internal stakeholders like workers, while larger and profitable companies tend to focus on the environment and customers (Marchini et al., 2023). Bandini et al. (2022) through a questionnaire submitted to a sample of Italian BCs, explore in what extent different categories of stakeholders (clients, suppliers, shareholders, banks, and the broader community) are involved across different decisions (strategy, operational and financial decisions); the authors classify the analysed companies into three clusters according to the different level of stakeholder engagement: a first cluster (full multi-stakeholdership) includes those BCs that involve almost all stakeholders in all the three type of decisions; the second cluster (selected multi-stakeholdership) includes those BCs that involve stakeholders selectively in certain decisions, such as including banks in financial decisions, but clients and suppliers only in operational decisions; in the third cluster the decision-makers are mainly the owners/shareholders.

Accountability for what – practices

Some academics studies discuss the main practices through which benefit corporations pursue their dual purpose. For instance, Nigri et al. (2020b) and Del Baldo (2019), by conducting single case studies, analyse the business model of two Italian benefit corporations.

Wilburn et al. (2019) discursively present the best environmental and social practices that a representative sample of large American BCs (i.e., Patagonia, King Arthur Flour, Greystone Bakery, Sun Light & Power, New Leaf Paper) have implemented and reported in their annual reports. In the study, Wilburn et al. (2019) argues that Patagonia pursues its environmental goals through the implementation of a circular production model; it also uses a percentage of sales for the preservation and restoration of the natural environment; Patagonia also implements social practices (e.g., extend health benefits to all part-time employees, and subsidizing childcare). King Arthur Flour pays employees' family healthcare premiums, as well as provides employees with vouchers for wellness activities; in this company more than 50% of the employees are women; it also provides hours of paid time off each year for each

employee for volunteer work; it donates revenues from the sale of particular products to local nonprofits and provides children of the community with training course (make bread); as to environmental practices, King Arthur Flour uses only eco-friendly packaging and implements composting in employee kitchens, break rooms and the café, and food scraps are used by local farmers to feed their animals. Greystone Bakery reinvests significant profits in the Greyston Foundation, which provides jobs, job training, affordable housing, youth services, and health care to the local community; it also provides children with early learning and after school services and provides employees with training programs. It also pursues environmental goals by reducing greenhouse gas emissions and increasing the food waste recycled. Sun Light & Power pursues only environmental goals (as it produces energy with a solar power system on the roof, which also charges its electric vehicles; it adopts vehicles that operates on bio-diesel fuel manufactured from waste cooking oil. It recycles its waste building materials and uses only recycled paper products and other products purchased from certified green businesses). New Leaf Paper provides health benefits to employees and employs people from low-income communities; it also conducts an assessment of supplier's compliance with environmental and social standards. This study, although presents some sustainable practices implemented by BCs, provides results based on a very limited sample of companies; additionally, the results are not supported by a systematic methodology.

Also, Cetindamar (2015) by analysing the content of annual reports published by 35 American BCs, detects the main practices fulfilled by companies to achieve their dual goals and classifies them according to the four categories of BLAB methodology (governance, environment, customers, workers): the results of this analysis reveals that the main practices adopted by the analysed are the recycling, the distribution of profit to charity, and working closer with local suppliers.

Some academic studies attempted to analysed how BCs pursue their dual purpose, but no studies focused on the performance and impact assessment of benefit corporations have been conducted. Only Gazzola et al. (2019) statistically analyse the relationship between the scores obtained by a sample of Italian Benefit corporations that are also certified BCORP in the five impact areas envisaged by the BCORP certification and the net present value. However, this study does not discuss how benefit corporations measure their environmental and social impacts.

Transparency

Academic literature addresses benefit corporations' s transparency that represents a peculiar aspect and a fundamental requirement that law imposes to this type of businesses. Some scholars empirically investigate the number of companies that fulfil the legal obligation of prepare and make the annual benefit report publicly available: Cetindamar (2018), by conducting and online search of annual benefit reports published by American BCs, pinpoints that only a very limited number of companies (precisely 15/151) published the document on the website, so demonstrating a tendency of American benefit corporations to neglect the preparation and submission of the annual benefit report. Wilburn et al. (2019), empirically show that, on a sample of 1530 American benefit corporations, an insignificant number of companies published the annual report on the website; through a questionnaire submitted to a sample of companied that did not published the annual report, Wilburn et al. (2019) investigate the motivations for which they did not publish the report; the questionnaire results demonstrate that most companies consider the preparation of the report as too onerous, especially in the case of small enterprises. These empirical results obtained by Wilburn et al.,(2019), although based on a limited

sample of company, confirm the critical point of the accountability and transparency component of benefit corporation model theoretically identified and discussed by other scholars (André, 2015; Cummings, 2012; Lee, 2018). In the Italian context, Mion et al. (2020), by analysing the website of 144 BCs, shows that only about 32% of companies that have an active website publish online the annual report; similarly, the results of a questionnaire conducted by Bandini et al. (2022) demonstrate that about 30% of surveyed Italian BCs publish the annual benefit report. The adoption of reporting practices is considered as a discriminant element in the classification of Italian benefit corporations carried out by Nigri et al. (2018).

Cetindamar (2018) quantitatively analyses a sample of annual reports published by American BCs to assess the quality of annual reports in terms of number of pages and level of detail of the information provided; the results of the analysis show that half of the analysed firms have reports consisting of only five or fewer pages and that only 14% of the firms provide detailed information on their activities along with rich data on their social purpose and achieved performance. Moreover, the empirical analysis conducted by Cetindamar (2018) reveals that most of the analysed BCs adopted the BIA standard as impact evaluation standard and that a common practice among American BCs is to use the report they submit to the B Lab as their own annual benefit report. According to Cetindamar (2018), this practice has some advantages (it is timesaving and provides uniformity so making easier to compare the performance of BCs) but also some disadvantages (the report published on the B Lab website is very limited in terms of content and details as the BIA standard is an index value rather than a detailed account of the activities carried out by the company). Mion (2020) demonstrates that the adoption of BIA is not a driver for the reporting quality. Mion (2020), by adopting a mixed qualitative and quantitative approach, explores the reporting practices of 47 Italian benefit corporations to evaluate the quality of the published reports and identify the main drivers and determinants that affect the reporting quality. First the author conducts a content analysis of the annual reports to gather information and data on the reporting practices; then, to appreciate the quality of the impact reports, develops a set of ten indicators and an evaluation scale (ranging from 0 and 4) to assign a score to each indicator. The analysis conducted by Mion (2020) shows that most of the analysed companies adopt the BIA standard as impact evaluation standards and that only a very limited number of companies prepare their report by following a reporting standard such as GRI. In addition, Mion (2020) demonstrates that the adoption of an external reporting standard is a crucial driver of quality of reporting and that the reporting quality is more affected by the adoption of an external reporting standard (as GRI) than to the adoption of an evaluation standard (as BIA). Also, Mion (2020) investigates the correlation between the quality of the impact report and some variables (geographical area, BCORP certification, native/non-native BC, industry, profitability and size) and highlights a unique positive correlation between the reporting quality and the company's size.

As to the reporting process implemented by benefit corporations, academic literature points out the absence of external feedback mechanisms, a reporting activities that, according to Galli et al. (2021) increase the level of transparency and improve the relationship with company stakeholders. Bandini et al. (2022), by surveying a sample of Italian benefit corporations, show that most of surveyed companies do not require formal approval from external stakeholder and that, in many cases, only the board approves the report; Galli et al. (2021) also demonstrate that the stakeholder feedback tool is adopted only by larger companies. Furthermore, Galli et al. (2021), to assess the level of transparency of BCs,

conduct a content analysis of the main communication tools (corporate statute, impact reports and website) adopted by a sample of 57 Italian benefit corporations characterized by different dimensions (in terms of revenues and employees) and different adhering time to the benefit corporation model. The results indicate that the presence of the impact manager, although expressly envisaged by Italian law, is not relevant for the company transparency (as this figure in many cases does not correspond to an ad hoc organizational position); the level of transparency seems to be affected by other variables such as the company dimension, the availability of resources and the temporal dimension. The level of transparency is strictly related to the company dimension and the level of resources (in terms of financial resources and dedicated people) as larger companies with more employees present wide content about their transformation in benefit corporation and the impact they generate in their website. As to the impact report, the results demonstrate that the level of transparency related to this tool is significantly affected by the temporal dimension, in addition to the availability of resources: companies that have adopted the benefit model for several years are also those that develop annual reports with more complex contents (Galli et al., 2021).

3.5 Discussion

The systematic literature review highlights that the academic knowledge on benefit corporations is fairly recent. No previous study has systematically reviewed the existing literature on benefit corporations. Only Kirst et al. (2021) conducted a systematic literature review on benefit movement, so reviewing academic contributions on benefit corporations but also on certified BCORP companies.

Existing academic contributions on benefit corporations has addressed the topic both from theoretical and empirical perspective.

Among studies that theoretically address benefit corporations, two research stream can be identified. A first research stream includes all those academic studies that theoretically discuss the implication of the new organizational form with respect to corporate theories and the way of conceiving the economy and CSR. Different perspectives emerge in this research stream. For some scholars benefit corporation model provides at least partial solution to the contrast between shareholder theory and stakeholder theory by allowing corporations to legally choose to consider a broader stakeholder view in their decision-making (Hiller, 2013; Jonsen, 2016; Kanig, 2013; Hemphill et al., 2014); however, some scholars disagree with this perspective and assert that benefit corporation model only apparently contrasts with shareholder value norm as it allows shareholders to pursue both their financial interests and their subjective and altruistic values (Hasler, 2014; Ventura, 2022). A second research stream includes academic studies that addressed the motivations behind the introduction of benefit corporation model and the main advantages and critical issues of this new form of business. Few contributions – all referred to US context – discuss the motivation behind the introduction of benefit corporation from theoretical perspective (Cummings, 2012; Tu, 2016); several academic scholars theoretically discussed the main advantages (reputational and raising capital) of the adoption of the model (Cho, 2017; Lee, 2018) and its main critical issues and weaknesses. Scholars, by analysing US benefit corporation law, pinpoint critical aspects and weaknesses of benefit corporation model such as the vague and broad definition of purpose that companies have to pursue, the weak accountability model based on the publication of an annual benefit report and on the adoption of a third-party standard, the absence of oversight mechanisms to sanction

for those companies that do not meet the statutory requirements (André, 2012; Hemphill et al., 2014; André, 2015; Lee, 2018; Cummings, 2012).

Among empirical studies addressing benefit corporations, some research streams exist. A first research stream refers to studies that empirically investigate the transformation of existing traditional companies into benefit corporation. This research stream includes (i) contributions addressing the motivation behind the transformation of traditional companies into benefit corporations (Kurland, 2017; Del Baldo, 2019; Mion et al., 2021) and (ii) contributions addressing the transformation process fulfilled by companies that decided to adopt this organizational form (Kurland 2017, 2021). In both cases, some research gaps emerge. First, existing studies focus on the motivations behind the decision of traditional companies to become benefit corporation, while the motivations for the adoption of this organizational form by native benefit corporations have not been investigated. Second, the transformation process into benefit corporation, in terms of phases, activities to be carried out, as well as organizational changes that occurred after the adoption of benefit corporation organizational form, has not widely addressed by existing literature. So, additional studies on the transformation processes into a benefit corporation and the related challenges and organizational changes are required.

Another research stream includes all contributions which empirically address the peculiar aspects that characterized benefit corporation model, namely purpose, accountability, and transparency. Many scholars, indeed, conduct the content analysis of benefit corporations' mission statements to investigate the pursued purposes (Cetindamar, 2018; Mion et al., 2020; Mion et al., 2021) and the stakeholders that are the beneficiaries of the stated purposes and to whom company should be accountable (Cetindamar 2018; Mion et al., 2023; Marchini et al., 2023). However, no contribution addresses the mechanisms through which the stakeholders are engaged. Few contributions address benefit corporations from the perspective of business practices they perform to achieve their dual purpose: for instance, Wilburn et al. (2019) discursively describe the best environmental and social practices implemented by a sample of American benefit corporations and Centidamar (2018) attempted to systematize knowledge on business practices implemented by a limited sample of American benefit corporations; a research gap exists as academic studies did not extensively address the environmentally and socially sustainable practices that benefit corporations implement to achieve their dual purpose; additionally, academic knowledge lacks contributions dealing with the impact assessment of benefit corporations, both in terms of environmental and social performance and also in term of financial performance.

Many scholars investigate benefit corporations' transparency. Many studies investigate the impact reports published by benefit corporations both from quantitative perspective (with the aim to empirically understand in what extent benefit corporations fulfil the legal obligation to publish the annual benefit report (Willburn et al., 2019; Cetindamar, 2018; Bandini et al., 2022)) and from qualitative perspective to analyse the reporting quality (Cetindamar, 2018; Mion 2020). The absence of contributions addressing the reporting process implemented by benefit corporations is another research gap that should be solved in order to provide benefit corporations a systematic guideline to successful implement the reporting process that is a fundamental requirement for this type of businesses.

The academic knowledge able to answer the identified review questions and the identified research gaps are summarized in Table 3.5Table 3.5.

Lastly, the conducted review demonstrates that many academic contributions that empirically analysed benefit corporation adopt qualitative methodological approaches to generate knowledge; in particular,

single and multiple case studies, as well as survey were conducted; many studies adopt content analysis methodology to generate knowledge form the analysis of the BCs' article of association and BCs' annual benefit report. For instance, qualitative content analysis has been adopted by scholars for many purposes: (i) to analyse the BCs' mission statement and detect its components (Mion et al., 2023); (ii) to analyse the BC's mission statement and detect stakeholders to whom BCs refer; (iii) to analyse the content of annual reports and identify environmental and social practices fulfilled by companies to achieve their dual purpose.

Table 3.5. Benefit corporation – a summary of academic knowledge and research gaps

Review question	Academic knowledge	Research gaps
RQ1: Which are the implications of benefit corporation model with respect to the way of conceiving the economy and interpreting corporate social responsibility?	- For some scholars, BC model partially solves the contrast between shareholder theory and stakeholder theory by allowing corporations to legally choose to consider stakeholder interests in their decision-making (Hiller, 2013; Jonsen, 2016; Kanig, 2013; Hemphill et al., 2014) - For some scholars, BC model only apparently contrasts with shareholder value norm as the business form allows shareholders to pursue both their financial interest and their subjective and altruistic values (Hasler, 2014; Ventura, 2022). - BC is an organizational model that allows the pursuit of Corporate Social Responsibility (Hiller, 2013) - BC model fits with the shared value framework (Hiller, 2013)	-
RQ2: Which are the motivations and contingency factors enabling the introduction and the diffusion of benefit corporations? Which are the motivations that led companies to adopt the benefit corporation model or to transform into benefit corporation? How has this transformation process been managed and with what difficulties and criticalities?	- The main motivations behind the introduction of BC model concern the need to solve practical barriers that for-profit social enterprises faced such as the difficult in raising capital and the need to prevent unfriendly takeover (Cummings, 2012) - Market justification, namely the need to provide socially conscious businesses a reliable method for signalling their social mission and their socially and environmentally responsible way to operate (Tu, 2016) is another motivation discusses in the literature	The motivations behind the adoption of BC organizational model by native benefit corporations should be investigated
	- The main motivations behind the choice of companies to transform into a BC are: (i) the need to protect company form unfriendly takeover (Kurland, 2017); (ii) the need to obtain formal recognition of a pre-existing, long-term business' orientation towards CSR (Del Baldo, 2019; Nigri et al., 2020a; Mion et al., 2021; Marchini et al., 2023); (iii) increase company reputation and attract employees (Marchini et al., 2023) - Only one contribution discusses the transformation process fulfilled by a traditional corporation into a BC and the challenges faced in the transformation process (Kurland, 2017)	The transformation process into a benefit corporation requires a more in-depth investigation, based on a wide sample of companies. The phases of transformation process, as well as the organizational changes and challenges to be faced, should be also investigated
RQ3: Which are the main strengths and critical issues of this new organizational model?	- BCs have significant advantages in terms of raising capital and reputation (Cho, 2017; Lee, 2018) - BCs' critical issues are: the vague and generic definition of general and specific public benefit (André, 2012; Lee, 2018; Kanig, 2013); a weak accountability model based on the mandatory publication of the annual report that is considered burdensome especially for smaller companies (André, 2015; Cummings, 2012; Lee, 2018); conflict of interests related to the third-party standard and certification of annual report (Cho, 2017; Hemphill et al., 2014); absence of oversight mechanisms (Cho, 2017; Hemphill et al., 2014; André, 2015; Lee, 2018)	Advantages and critical issues are addressed only by theoretically perspective; empirical studies investigating how and to what extent these advantages and criticalities are actually perceived by benefit corporations should be conducted
RQ4: Which business processes and practices	- Some studies analyse the BCs' mission statements with the aim to extract knowledge on the purpose and social	The business practices through which benefit corporations make

Review question	Academic knowledge	Research gaps
benefit corporations carry out to make their processes sustainable and achieve their dual purpose and their sustainability goals? Which are the stakeholders to whom benefit corporations are accountable? How and to what extent benefit corporations are transparent?	mission declared by benefit corporations. BCs generally describe their purpose through a very concise statement (Centidamar, 2018; Mion et al., 2020); many BCs describe their purpose by providing the reference law only, without making any effort to concretize and operationalize how they pursue benefit (Mion et al., 2020); among companies that declare their purpose, many refer to the broad concept of sustainability to define their purpose, with a predominance of environmental dimension of sustainability; other companies simply declare a purpose of contributing to the sustainable development; also the profit creation and the profit sharing are declared in the BCs mission statements (Mion et al, 2020; Marchini et al., 2023) - Few studies systematize knowledge on the practices that BCs carry out to achieve their dual purpose; for instance, Cetindamar (2018) analyses the content of a sample of BCs' impact report and classifies the fulfilled practices according to the four categories of BLAB methodology; Wilburn et al. (2019) discursively describe the best practices implemented by a representative sample of large American BCs	their business processes environmentally and socially sustainable in order to pursue their dual purpose should be more in-depth investigated. More studies focusing on the BCs' impact assessment should be conducted
	- Some studies analyse BCs from stakeholder perspective. The main stakeholders to whom BCs are accountable (e.g., environment, society, community, customers, employees) have been identified through the content analysis of BCs' mission statements (Cetindamar, 2018; Mion et al., 2023; Marchini et al., 2023)	The mechanisms of stakeholder engagement adopted by BCs should be investigated
	- In regard to transparency, there is a tendency among BCs to neglect the preparation and publication of the annual benefit report, both in US (Cetindamar, 2018; Wilburn et al. 2019) and in Italian context (Mion et al., 2020; Bandini et al., 2022) - BIA standard is the most adopted standard for the impact assessment (Cetindamar, 2018; Mion, 2020) - The BC's reporting quality is generally scarce (Centidamar, 2018); the quality of reporting is affected by the adoption of a reporting standard such as GRI and correlated with the company's size (Mion, 2020) and with the adhering time to benefit corporation model (Galli et al., 2021) - The BC's reporting process does not envisage feedback from external stakeholders (Galli et al, 2021; Bandini et al., 2022)	The motivations for which many BCs do not publish the annual report should be investigated. The reporting processes, in terms of activities to be carried out to prepare an annual report, should be studied in order to provide BCs with a practical guideline to accomplish this legal requirement.

3.6 Conclusions

Benefit corporation, the hybrid corporate entity that simultaneously pursues profits and social purposes, represents a suitable business form for those companies that want to pursue both profits and have a positive impact on the society and environment.

By systematically review existing literature, the paper contributes to the academic debate on benefit corporations and identifies existing literature gaps and future research questions to be addressed. From a managerial perspective, the study provides companies with insights for the adoption of such a model to simultaneously pursue profits and sustainability goals.

The results of literature review reveal that the benefit corporation is a recent and under investigated topic in the academic literature. Also, most research adopted a theoretical perspective to study benefit corporation, few adopted an empirical perspective.

Existing academic literature deals with the implications of benefit corporations with respect to the way of conceiving and interpreting corporate social responsibility; literature review has also addressed the motivations under the introduction and the adoption of the benefit corporation model; however, these points have been addressed above all from theoretical perspective, and more empirical studies are required. For instance, more studies that empirically investigate the motivations behind the adoption of BC organizational form by native benefit corporations would be needed; also, the process of transformation into a benefit corporation that companies implement should be object of a deeper investigation. Additionally, existing literature almost neglects how BCs operate to pursue their dual purpose and measure their impact, and how they operate to comply with legal and statutory requirements in terms of accountability and transparency. Studies addressing practices adopted to make business processes environmentally and socially sustainable so as to pursue their dual purpose, as well as studies on the impact assessment of BCs are needed; similarly, empirical studies on the reporting process and stakeholder engagement would be useful to support companies, especially SMEs, interested to such organizational form.

The main limitation of the study relies on the search query adopted to retrieve academic contributions; the identified keywords and the applied filters may have excluded some potential studies able to answer the posed review questions.

4. Sustainable process patterns: a content analysis of Benefit Corporations' sustainability reporting documents

Abstract

This paper aims to identify sustainable process patterns to which companies may refer to environmentally and socially manage their business processes so achieving sustainability goals. To generate practical knowledge to be included in the sustainable process patterns, a content analysis of sustainability reporting documents published by a sample of Italian Benefit Corporations has been carried out. Sustainable process patterns describe practical solutions to environmentally and socially analyse, design and redesign business processes.

The paper contributes to literature on Sustainable Business process Management, by extending knowledge on the design and redesign of sustainable business processes; the paper contributes to literature on Benefit Corporations, by advancing knowledge on sustainable practices they implement to achieve their dual purpose.

The results of the study provide companies with a handbook of sustainable practices (in the form of sustainable process patterns) to analyse, design and redesign their business processes and make them more environmentally and socially sustainable.

Keywords: *Green process patterns, Social process patterns, Benefit corporations, Sustainable Business Process Management, Content Analysis*

4.1 Introduction

To compete and succeed in the market, companies have to consider and address the three dimensions of sustainability (economic, environmental and social) in an integrated way (Savitz, 2013).

For companies, achieving sustainability goals implies design and redesign business processes – which represent the way companies accomplish their business goals (Crowston, 2000) – in environmentally and socially sustainable manner. Sustainable Business Process Management (S-BPM) emerged as a research stream of Business Process Management to embed sustainability in the management of business processes (Seidel et al., 2012; Couckuyt, 2018; Couckuyt et al., 2019; Magdaleno et al., 2017). S-BPM provides methods, approaches and techniques to support organizations in the management of business processes by considering sustainability aspects beside to the traditional performance, namely time, costs, quality and flexibility (Couckuyt, 2018). S-BPM, as a research stream, is still in its infancy.

As already discussed in Section 2.4.2, S-BPM suggests (green and social) process patterns as method to design and redesign sustainable business processes; sustainable (green and social) process patterns describe practical solutions to environmentally and socially analyse, design and redesign business processes. However, the proposed patterns lack performance indicators able to measure the social and environmental performance of business processes; the proposed green and social process patterns do not adequately present the relationships with business processes they intend to (re)redesign, and with the stakeholders to whom they refer. Additionally, the derivation process of these patterns is not properly described in the literature.

This paper aims to identify sustainable process patterns, so providing companies with a handbook of sustainable practices (in the form of sustainable process patterns) to analyse, design and redesign their

business processes from sustainability perspective. To do so, the paper focuses on Benefit Corporations. As discusses in Chapter 3, Benefit Corporation (BC) is a hybrid form of business that pursues dual purpose - economic purpose and environmental and social purposes - to create a positive impact on the society (Coate et al., 2015; Sciarelli et al., 2020), so mitigating the negative externalities attributed to traditional companies generally focused on the profit maximization (Kanig, 2013; Mcmullen et al., 2016) whose operating model has generated prosperity, but not without undesirable social and environmental consequences (Sabeti et al., 2015).

The paper analyses the content of Benefit Corporations' sustainability reporting documents. Benefit corporations are required to publish an annual sustainability reporting document on their social and environmental performance and achieved impacts. For data availability reason, only documents published by Italian BCs are considered.

A set of thirty sustainable process patterns, based on sustainable practices implemented by Benefit Corporations, has been developed.

The conducted analysis advances knowledge on practices adopted by Benefit Corporations to purse their dual purpose, so addressing a knowledge gap in the academic literature on Benefit Corporations; the paper also contributes to S-BPM research stream, by extending and refining the existing sustainable (green and social) process patterns.

The paper is structured as follows. In Section 4.2 an overview of Italian Benefit Corporations is presented; in Section 4.3 the research objectives and the methodology adopted to address them are presented; in Section 4.4 and 4.5 results of the analysis are presented and discusses, respectively; finally, conclusions and recommendations for future research are drawn in Section 4.6.

4.2 Italian Benefit Corporations: an overview

In this section an overview of Italian Benefit Corporations (BCs) is provided. All the information reported in this section are the result of the elaborations conducted on an Excel database kindly provided by InfoCamere (the IT company that manages the telematic business register on behalf of Italian Chambre of Commerce) for research scope[3].

The database provided by InfoCamere lists the Italian companies registered to the Italian business register from 1996 (year of establishment of the Italian business register) to 18/01/2022.

The database includes 1,697 companies that on January 18, 2022 resulted registered as benefit corporation in the Italian business register. The database includes some fields that uniquely identify each BC (e.g., the company name, the fiscal code); also, information on company status (i.e. active, in liquidation, inactive, in bankruptcy), legal form, geographical location, number of employees, share capital and production value is reported. For each BC, the ATECO code defined by Italian National Statical Institute (Istat 2022), i.e., a hierarchical classification which, through alphanumeric codes, groups together economic activities that are assumed to be similar, is reported.

The BCs' database did not include information neither on the availability of companies' website nor on the publication (online or attached to the financial statement filed in the Chambre of Commerce) of the annual sustainability reporting documents. As this information is fundamental for the objectives of the research, a manual web search was carried out. First, the companies' websites were searched by using

[3] I would like to thank the Chambre of Commerce of Taranto that kindly provided the database

the Google search engine. Then, the identified companies' websites were carefully analyzed to retrieve the sustainability reporting documents published by BCs in the period between 2017 (the first year after the establishment of BC model in Italy) and 2022. For each document, information on the type of document (i.e. impact report, sustainability report or integrated report), and the format of publication (pdf or online), as well as the number of pages was collected.

Information on possible BCORP certification achieved by each company was collected; to do so, the repository of certified BCORP companies provided by B LAB was filtered to obtain only the Italian companies; the obtained list of companies was compared with the list of benefit corporations included in the database (the comparison was based on the field company name) to determine the benefit corporations that are also certified BCORP.

An initial operation of data cleaning on the BCs' database was conducted. The database included a total number of 1,697 benefit corporations, but only 1,395 (82%) were classified as active benefit corporations; only these companies were considered, and all the subsequent analysis was carried out on the active benefit corporation. Among the 1,395 active companies, five duplicate companies were identified, i.e., companies which, taken in pairs, have an identical company name or have the same geographical location (same address) even if they have different fiscal code. It has been hypothesized that these companies have implemented some legal changes over time and that both denominations have been kept in the business register. The five companies identified as duplicates were deleted from the database. Ultimately, the database consists of 1,390 active benefit corporations. In the following, some statistical data on the Italian benefit corporation, based on the analysis conducted on the 1,390 active BCs, are reported.

Geographical location

Table 4.1 shows the absolute and relative number of BCs operating in each of the five macro-regions identified according to the NUTS-1 classification (EUROSTAT, 2020). An absolute and massive presence of BCs can be noted in the regions of northern Italy in which about 71% of active BCs are ubicated. The presence of BCs in the Italian territory gradually reduces as one moves towards the regions of central and southern Italy (with 18% of BCs located in central Italy and only 10.5% in the south and islands). Such a geographical distribution reflects, not surprisingly, the general geographical distribution of companies in the national territory. Figure 4.1 shows the number of BCs located in each Italian region. It can be noted Lombardy has the highest number of BCs; among the regions of central Italy, on the other hand, most of the BCs are in Lazio (146 companies); among the regions of southern Italy, Puglia followed by Campania are the two regions that have the highest number of BCs.

Table 4.1. Distribution of benefit corporations in the five Italian macro-regions

Macro-regions (NUTS-1)	**Number of companies**	**%**
North-West (Piemonte, Valle d'Aosta, Lombardia, Liguria)	632	45.47%
North-East (Veneto, Emilia-Romagna, Friuli V.G., Trentino A.A)	352	25.32%
Center (Lazio, Toscana, Umbria, Marche)	260	18.71%
South (Abruzzo, Molise, Puglia, Basilicata, Calabria, Campania)	103	7.41%
Islands (Sicilia, Sardegna)	43	3.09%
Total	**1,390**	**100.00%**

Figure 4.1. Benefit corporations – distribution in the Italian regions

ATECO macro sectors

The selected BCs (1,390 companies) operate in 18 different macro sectors (out to the 21 macro sectors included in the ATECO classification); no BC operates in three macro sectors, namely public administration and defence, family businesses as employers for domestic staff, extra-territorial organizations. Most BCs belongs to the macro sector M-professional, scientific and technical activities (with a total number of 371 BCs) followed by the macro sector J-information and communication services (308 companies), the macro sector C-manufacturing activities (205 companies), the macro sector G-wholesale and retail trade (150 companies) and to the macro sector N-rental, travel agency and business service (85 companies). The 80.5% of BCs operating in Italy concentrates in these five macro sectors. Table 4.2 details the distribution of BC in the 18 ATECO macro sectors.

Table 4.2. Distribution of benefit corporations in the ATECO macro sectors

ATECO macro sectors	**Number of BCs**	**%**
M - ATTIVITÀ PROFESSIONALI, SCIENTIFICHE E TECNICHE	371	26.69%
J - SERVIZI DI INFORMAZIONE E COMUNICAZIONE	308	22.16%
C - ATTIVITÀ MANIFATTURIERE	205	14.75%
G - COMMERCIO ALL'INGROSSO E AL DETTAGLIO	150	10.79%
F - COSTRUZIONI	44	3.17%
P - ISTRUZIONE	38	2.73%
I - ATTIVITÀ DEI SERVIZI DI ALLOGGIO E DI RISTORAZIONE	30	2.16%
L - ATTIVITA' IMMOBILIARI	28	2.01%
K - ATTIVITÀ FINANZIARIE E ASSICURATIVE	28	2.01%
Q - SANITA' E ASSISTENZA SOCIALE	24	1.73%
A - AGRICOLTURA, SILVICOLTURA E PESCA	24	1.73%
H - TRASPORTO E MAGAZZINAGGIO	18	1.29%
R - ATTIVITÀ ARTISTICHE, SPORTIVE, DI INTRATTENIMENTO E DIVERTIMENTO	13	0.94%
D - FORNITURA DI ENERGIA ELETTRICA, GAS, VAPORE E ARIA CONDIZIONATA	10	0.72%
S - ALTRE ATTIVITÀ DI SERVIZI	7	0.50%
E - FORNITURA DI ACQUA; RETI FOGNARIE, ATTIVITÀ DI GESTIONE DEI RIFIUTI	6	0.43%
B - ESTRAZIONE DI MINERALI DA CAVE E MINIERE	1	0.07%
Total	**1,390**	**100.00%**

By aggregating the 18 macro sectors in which BCs operate in the three productive sectors (primary, secondary and tertiary sector), a clear predominance of BCs operating in the tertiary sector emerges. Indeed, the 80% of BCs operate in the tertiary sector, the 18% in the secondary sector and only the 2% in the primary sector. Figure 4.2 shows the distribution of BCs in the three productive sectors and in the ATECO macro sectors included in each of productive sector.

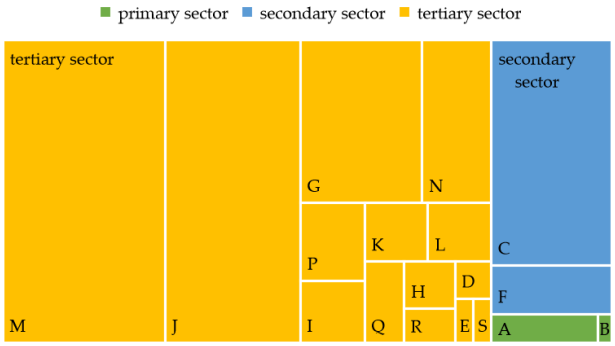

Figure 4.2. Distribution of benefit corporations into the productive sectors

Legal form and dimension

The Italian legislation allows all corporate legal form to configure themselves as benefit corporation. The analysis of BCs' database reveals a strong prevalence of corporations (società di capitali) which includes the 97.77% of the active benefit corporations; only the 1.01% of BCs configure as partnership (società di persone) and the remaining 1.22% of BCs configure as other types of legal form (i.e., consortium or cooperatives). Table 4.3 shows that, among corporations (società di capitali), the Limited Liability Company(srl) is the legal form adopted by over 82% of BCs, while only the 10.79% of BCs adopt the joint stock company (società per azioni) legal form.

Data reported in Table 4.3 reveal that there is no correlation between the BC's geographical distribution and the adopted legal form. For instance, a prevalence of Limited Liability Company (srl) over the other types of corporations emerges in all geographical macro regions.

Table 4.3. Benefit corporations – legal form and geographical distribution

Legal forms		**North - West**	**North - East**	**Center**	**South and Islands**	**Total**	**%**
Società di Capitali	**Corporations**	**619**	**344**	**257**	**139**	**1,359**	**97.77%**
SOCIETA' A RESPONSABILITA' LIMITATA	Limited Liability Company (LLC)	528	293	202	123	1,146	82.45%
SOCIETA' PER AZIONI	Joint stock company	70	40	30	10	150	10.79%
SOCIETA' A RESPONSABILITA' LIMITATA CON UNICO SOCIO	Limited Liability Company with single shareholder	10	5	13	3	31	2.23%
SOCIETA' A RESPONSABILITA' LIMITATA SEMPLIFICATA	Simplified Limited Liability Company	4	3	6	3	16	1.15%
SOCIETA' PER AZIONI CON SOCIO UNICO	Joint Stock Company with a single shareholder	7	3	5		15	1.08%
SOCIETA' IN ACCOMANDITA PER AZIONI	Limited Liability Limited Partnership (LLLP)			1		1	0.07%
Società di Persone	**Partnerships**	**5**	**5**	**2**	**2**	**14**	**1.01%**
SOCIETA' IN ACCOMANDITA SEMPLICE	Limited Partnership (LP)	3	2	1	2	8	0.58%

Legal forms		North - West	North - East	Center	South and Islands	Total	%
SOCIETA' IN NOME COLLETTIVO	General Partnership (GP)	2	2	1		5	0.36%
SOCIETA' SEMPLICE	Simple partnership		1			1	0.07%
Altre	**Others**	**8**	**3**	**1**	**5**	**17**	**1.22%**
SOCIETA' COOPERATIVA	Cooperative	4	2	1	2	9	0.65%
SOCIETA' CONSORTILE A RESPONSABILITA' LIMITATA		4	1		2	7	0.50%
CONSORZIO	Consortium				1	1	0.07%
Total		**632**	**352**	**260**	**146**	**1,390**	**100.00%**

The BCs' database does not contain information about the financial situation and profitability of Italian BCs; also, it does not include financial information (i.e., the annual turnover and the invested capital) that, together with the data on company's number of employees, allows classify companies into large, small and medium enterprises, according to the European guideline (European Commission, 2020). The data on BCs' share capital is provided for all companies listed in the database, and the data on BC's number of employees is reported for only 765 BC out to 1,390 BCs listed in the database.

To extract information about the BCs' dimension, the number of employees and the companies' share capital were considered. The companies' share capital is a weak proxy of companies' size. Table 4.4 shows the distribution of BCs per number of employees and legal form and Table 4.5 shows the distribution of BCs per amount of share capital and legal form (single partnership and cooperative legal form are excluded because the share capital is not relevant for them and, indeed, it has not been registered in the database).

Table 4.4. Benefit corporations – number of employees

Legal form		N_employees <=10 (micro companies)	10 < N_employees <=50 (small companies)	50 < N_employees <=250 (medium companies)	N_employees >250 (large companies)	Total
Società di Capitali	Corporations	448	192	71	33	744
SOCIETA' A RESPONSABILITA' LIMITATA	Limited Liability Company (LLC)	406	136	22	1	565
SOCIETA' PER AZIONI	Joint stock company	23	43	43	22	131
SOCIETA' A RESPONSABILITA' LIMITATA CON UNICO SOCIO	Limited Liability Company with single shareholder	14	10	3	2	29
SOCIETA' A RESPONSABILITA' LIMITATA SEMPLIFICATA	Simplified Limited Liability Company	4				4
SOCIETA' PER AZIONI CON SOCIO UNICO	Joint Stock Company with a single shareholder	1	3	3	8	15
Società di Persone	Partnerships	7	3			10
SOCIETA' IN ACCOMANDITA SEMPLICE	Limited Partnership (LP)	5	2			7
SOCIETA' IN NOME COLLETTIVO	General Partnership (GP)	2	1			3

Legal form		N_employees <=10 (micro companies)	10 < N_employees <=50 (small companies)	50 < N_employees <=250 (medium companies)	N_employees >250 (large companies)	Total
Altre	Others	6	3	1	1	11
SOCIETA' COOPERATIVA	Cooperative	3	1	1	1	6
SOCIETA' CONSORTILE A RESPONSABILITA' LIMITATA		2	2			4
CONSORZIO	Consortium	1				1
Total		**461**	**198**	**72**	**34**	**765**
%		**60%**	**26%**	**9%**	**4%**	

Table 4.5. Benefit corporations – share capital

Share Capital [€]		until 10.000	from 10.001 to 50.000	from 50.001 to 200.000	from 200.001 to 1.000.000	from 1.000.001 to 10.000.000	more than 10.000.000	Total
Società di Capitali	Corporations	559	353	217	116	88	26	1,359
SOCIETA' A RESPONSABILITA' LIMITATA	Limited Liability Company (LLC)	533	335	189	68	18	3	1146
SOCIETA' PER AZIONI	Joint stock company		10	21	42	60	17	150
SOCIETA' A RESPONSABILITA' LIMITATA CON UNICO SOCIO	Limited Liability Company with single shareholder	10	8	7	4	2		31
SOCIETA' A RESPONSABILITA' LIMITATA SEMPLIFICATA	Simplified Limited Liability Company	16						16
SOCIETA' PER AZIONI CON SOCIO UNICO	Joint Stock Company with a single shareholder				1	8	6	15
SOCIETA' IN ACCOMANDITA PER AZIONI	Limited Liability Limited Partnership (LLLP)				1			1
Società di Persone	Partnerships	8	4	1				13
SOCIETA' IN ACCOMANDITA SEMPLICE	Limited Partnership (LP)	5	2	1				8
SOCIETA' IN NOME COLLETTIVO	General Partnership (GP)	3	2					5
Altre	Others	2	2	2	1	1		8
SOCIETA' CONSORTILE A RESPONSABILITA' LIMITATA		1	2	2	1	1		7
CONSORZIO	Consortium	1						1
Total		**569**	**359**	**220**	**117**	**89**	**26**	**1,380**
%		**41%**	**26%**	**16%**	**8%**	**6%**	**2%**	**100%**

Table 4.4 shows that more than half of BCs (60%) have fewer than 10 employees and are considered micro companies; the 35% have a number of employees between 10 and 250 (and can be considered small and medium enterprises) and only 4% of BCs are large enterprises (more than 250 employees). This classification can be considered valid unless different indications that could be derived from the turnover data.

A correlation between ~~the~~ BCs' dimension (based on the number of employees) and the adopted legal from exists; BCs that adopt the Limited Liability Company (srl) legal form are generally micro and small enterprises; BCs that adopt the legal form of joint stock company (spa) are equally distributed between micro and small enterprises (66 out of 131) and medium and large enterprises (65 out of 131).

Italian BCs have, in general, a low level of capitalization as the 94% of BCs have a share capital of less than 1 million (Table 4.5). This data is consistent with the already revealed strong prevalence of BCs which adopt the limited liability company (srl) legal form (82.45%), as this legal form is generally characterized by low capitalization.

A correlation between the BCs' dimension (based on the level of capitalization as a proxy of companies' size) and the legal form adopted by BCs is highlighted. BCs that adopt the limited liability company (srl) legal form have (1025 BCs out of 1146 equal to 98%) a modest level of capitalization (less than 1 million); the 51% of BCs that adopt the joint stock company (Spa) legal form have more than 1 million of share capital. These data confirm the trend whereby BCs that configure as limited liability company (srl) and partnerships are, in general, small company; on the other hand, large and medium BCs (with more than 250 employees and a high share capital, greater than one million euro) assume the joint stock company (spa) legal form.

The correlation between the adopted legal form and the company's dimension (although based on partial data on number of employees and on share capital data) reflects the configuration of Italian traditional companies that generally adopt the partnerships and the limited liability company in case of small company dimension and the joint stock company in case of larger company dimension.

Evolution over time

To understand the rapidity in the adoption of BC model in Italy, the evolution over the time of companies registered in the business register was analysed. Figure 4.3 depicts the number of BC registered in the business register year by year (the number of BCs registered until the 31/12/2015 are shown in aggregate manner). Starting from 2016 (the year of the introduction of BC legal model in Italian legislation) to 2022, the number of BCs passed from 492 to 1,390 ; additionally, the growth rate is almost always increasingly over time as it is equal to 15% in 2017, equal to 17% in 2018, 16% in 2019, 23% in 2020 and 31% in 2021; the years 2020 and 2021 are those when there was the largest increase of BCs. These data demonstrate the increasing interest of Italian productive system towards the BC innovative organizational model.

Figure 4.3. Benefit corporations – evolution over time

By considering the evolution over time of BCs in the Italian macro regions, a similar trend can be noted (Figure 4.4). The macro area south and island presents the most marked growth of BCs as they passed from 41 to 146 (whit a growth rate of 256%); the growth is less marked in the north-west macro region that – although has the absolute highest number of BCs – presents a growth rate equal to 205%, second to the growth rate occurred in the south and island macro area.

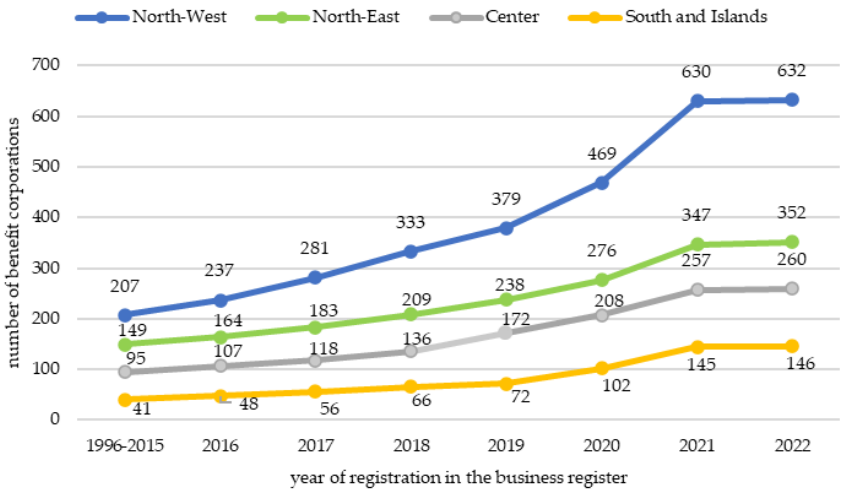

Figure 4.4. Benefit corporations – evolution over time in the Italian macro regions

Figure 4.5 depicts the evolution of BCs registered in the Italian business register in the five main macro sectors that include 80% of Italian BCs. The macro sector M-professional, scientific and technical activities - that, in absolute terms, includes the largest number of BCs - is not the macro sector in which the greatest growth rate of BCs occurred; indeed, in the macro sector M the number of BCs passed from 116 BCs to 371 with a growth rate equal to 220%; in the macro sector J-information and communication services the growth rate was equal to 460% and it is the macro sector in which the greatest growth rate registered.

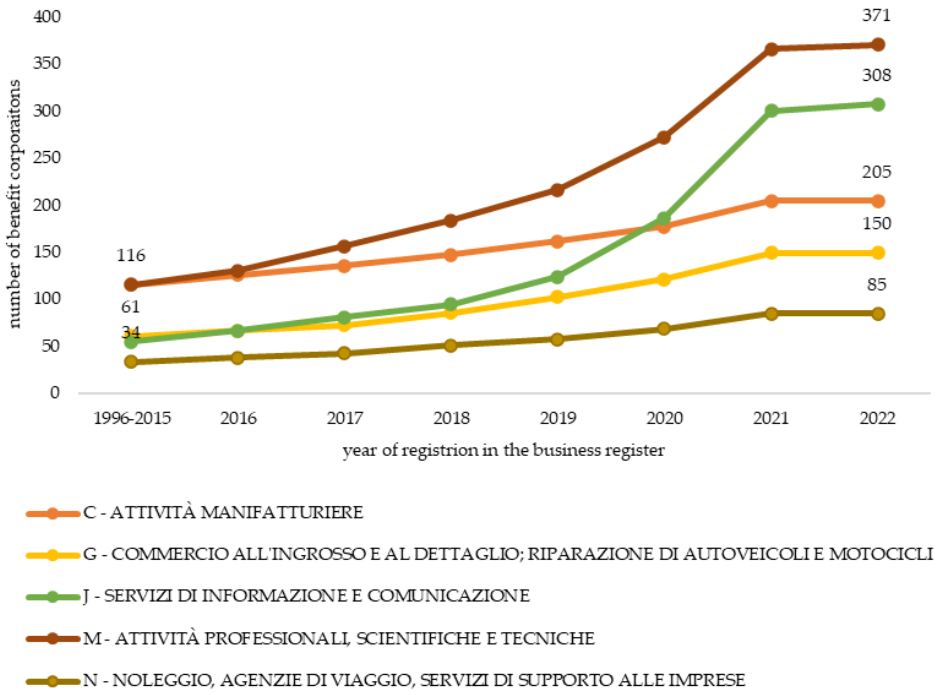

Figure 4.5. Benefit corporation – evolution over time in the five main ATECO macro sectors

BCORP Certification

All companies may obtain the BCORP certification released by BLAB after an assessment of company's sustainability performance based on five dimensions (governance, community, workers, environment and customers)(B Lab, 2023a). By comparing the BCs' included in the database with the Italian companies listed in the repository BLAB (which includes all companies that achieved the BCORP certification), the BCs that are also certified BCORP were detected. A total number of 159 (out of 1,390) are certified BCORP BCs. Table 4.6 reports the distribution of certified BCORP BCs in the five macro-regions. In all macro regions there is a low incidence of BCs that achieved the BCORP certification. For instance, only 5% of BCs located in Southern Italy have the BCORP certification; the percentage is slightly higher in the macro regions of North-West, North-East and Centre.

Table 4.6 Certified BCORP Benefit Corporations – distribution in the Italian macro regions

Macro-region NUTS-1	Certified BCORP BCs	%	Total number of BCs	%
North - West	74	46,54%	632	12%
North - East	46	28,93%	352	13%
Centre	32	20,13%	260	12%
South	5	3,14%	103	5%
Island	2	1,26%	43	5%
Total	159	100,00%	1390	

Figure 4.6 depicts the distribution of certified BCORP BCs in the macro sectors (the macro sectors are sorted by decreasing number of certified BCORP BCs). A prevalence of BCs that are not certified BCORP exists in all the macro sectors.

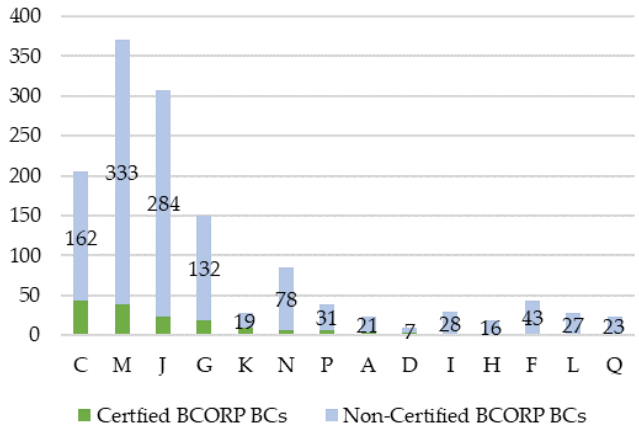

Figure 4.6. Certified BCORP Benefit corporations - distribution in the ATECO macro sectors

Annual sustainability reporting documents

Through a manual search conducted by using Google search engine, the availability of the website for each BC included in the database was verified and the links of the accessible websites were collected. A total number of 939 BCs have an accessible website (equal to the 68% of BCs listed in the database).

As already discussed, benefit corporations are required to publish a sustainability reporting document (generally an annual report) through which be accountable to all stakeholders on the sustainability performance achieved and the sustainability objectives to be achieved in the following year.

An in-depth analysis of BCs' accessible websites (939) was conducted, and the documents published between 2017 and 2022 were retrieved. Of the 939 BCs that have an accessible website, 587 BCs (equal to 62.5%) have not yet published an annual report; the remaining 352 BCs have published at least one sustainability reporting document over the six considered years. The considerations above demonstrate a still scarce propension of Italian BCs to undertake a sustainability reporting process, despite they are required by law to publish such a document.

Figure 14 depicts the distribution of BCs that have published at least one sustainability reporting document and those that do not publish the sustainability reporting document in the Italian macro regions. Note that in all macro regions there is a prevalence of BCs that have not yet published a sustainability reporting document. This implies that there is not a correlation between the BCs' geographical location and the publication of the sustainability reporting document.

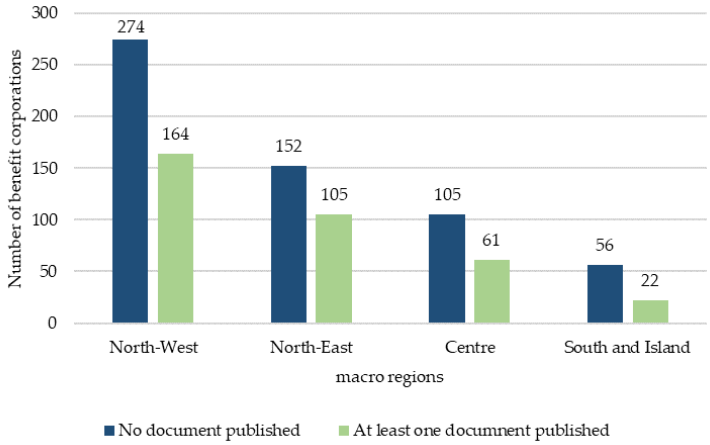

Figure 4.7. Distribution of Benefit corporations that published/do not published the sustainability reporting document in the Italian macro regions

A correlation between the publication of sustainability reporting document and the attainment of the BCORP certification emerges. Assuming the number of certified BCORP BCs to be 100, the 70% have published at least one annual report, and 30% have not published any sustainability reporting document. The percentage reverses if the non-certified BCORP BCS are considered: in this case, around 70% have never undertaken a sustainability reporting process (Figure 4.8). To better explain this relationship with the available data, namely, to understand if the publication of the annual sustainability document may be considered as a prerequisite to attain the BCORP Certification or if, conversely, BCs start to publish the annual sustainability document only when they have already achieved the certification, the year of attainment of BCORP certification and the year of publication of the sustainability reporting document were compared[4]. The comparison demonstrated that 54 certified BCORP out of 81 published the annual sustainability reporting document even before the attainment of the BCORP certification. On the basis of the available data, it seems that the company's commitment in the sustainability reporting process is a prerequisite of the achievement of the BCORP certification.

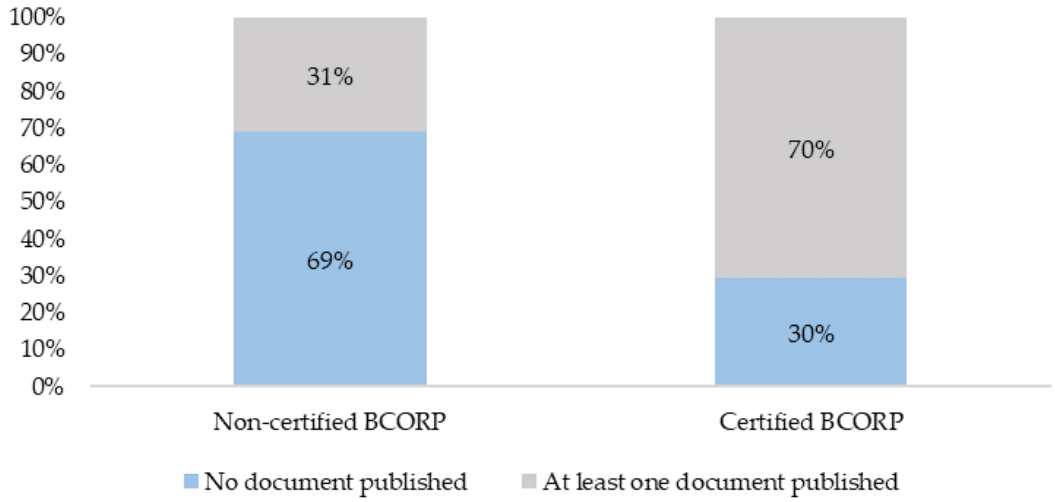

Figure 4.8. Certified/non-certified BCORP benefit corporations that published/not published the sustainability reporting document

A total number of 604 sustainability reporting documents were retrieved. They are published in between 2017 and 2022 by 352 benefit corporations. The typology of sustainability reporting document was also analysed. As shown in Figure 4.9, the 78% of published documents configure as "impact report", the 19% configure as "sustainability report" and only 3% are "integrated report". The 97% of retrieved documents were published by adopting the pdf format and therefore freely downloadable.

[4] as only annual reports published from 2017 were collected, only the 81 BCs which attained the BCORP certification from 2018 were considered

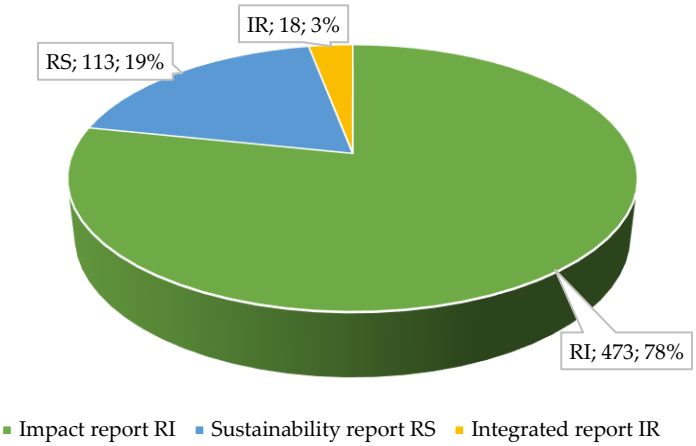

Figure 4.9. Typology of sustainability reporting documents published by benefit corporations

Table 4.7 reports some quantitative information on the 589 sustainability reporting documents available in pdf format (equal to the 97% of the total).

The documents which configure as "impact report" have an average number of pages equal to 24.76 (sd=19.22), and more that 90% of impact reports have less than 50 pages; not surprisingly, the documents which configure as "integrated report" present an opposite situation as over 88% of integrated report have more than 50 pages. If the overall sustainability reporting documents (without distinguish per document typology) are considered, it can be noted that the 27.50% of sustainability reporting documents have less than 15 pages and that the majority of collected documents have more than 15 pages.

Table 4.7. Sustainability reporting documents published by Benefit corporations-number of pages

Type of document	Number of documents		Number of documents' pages (n)					Average number of pages	Standard deviation
	N	%	n<15	15<=n<50	50<=n<100	100<=n<200	n>=200		
RI	462	78.44%	155 (33.55%)	265 (57.36%)	38 (8.23%)	4 (0.87%)	-	24.76	19.22
RS	110	18.68%	7 (6.36%)	48 (43.64%)	38 (34.55%)	15 (13.64%)	2 (1.82%)	61.05	49.52
IR	17	2,89%	-	2 (11.76%)	7 (41.18%)	7 (41.18%)	1 (5.88%)	115.53	85.36
Total	**589**	**100%**	**162 (27.50%)**	**314 (53.48%)**	**83 (14.09%)**	**26 (4.41%)**	**3 (0.51%)**		

4.3 Research Design

In this Section the research objective and questions that the study intends to achieve are presented. Then, the methodology adopted to achieve the goals and the phases to carry out the study are discussed.

4.3.1 Research Objective

The objective of the study is to identify sustainable process patterns to which companies may refer to design and redesign their business process to make them more environmentally and socially sustainable; the study intends to investigate what sustainable process patterns companies may adopt to implement a sustainable transformation and how these process patterns may be adopted in the time to achieve a sustainable transformation of business processes.

The research question is posed as follows:

> RQ: *What sustainable (green and social) process patterns may companies adopt to design and redesign their business processes to make them more sustainable so implementing a sustainable transformation? How are these patterns adopted in the time to achieve a sustainable transformation of business processes?*

To address this research question, the benefit corporations - hybrid business forms whose objective is to combine profits and common benefit objectives - are considered.
Additional research questions, specifically referred to benefit corporations, are posed:

> *RQ1.1 - Which practices do benefit corporations adopt to make their business processes environmentally and socially sustainable?*
>
> *RQ1.2 - How do benefit corporations measure their impact in terms of environmental and social performance of their business processes?*
>
> *RQ1.3 - How do the environmental and social practices that benefit corporations implement evolve over time?*
>
> *RQ1.4 - Can sustainability practices be traced back to process patterns?*

By dealing with research questions above, the study intends to contribute to solving some gaps that emerged from the analysis of extant academic literature, as well as addressing some practical problems. As to literature gaps, to the best of the author's knowledge, academic literature did not address benefit corporations from the perspective of business processes; extant literature did not extensively examine practices that benefit corporations fulfil to make their business processes sustainable and achieve their common benefit objectives. Also, sustainable (green and social) process patterns – that academic literature on S-BPM have already proposed as method to support the design and redesign of sustainable business processes – present some gaps. The existing green and social process patterns are not derived form a wide companies' practical experience; they lack also lack performance indicators able to measure the social and environmental performance of business processes and they do not adequately present the relationship with business processes they intend to (re)design and stakeholders to whom they refer.
From a practical perspective, companies (not only benefit corporations) that want to pursue sustainability goals often do not have a guideline that provides them with practices they may adopt to design and redesign environmentally and socially sustainable business processes, as well as performance indicators to measure the sustainability performance of their business processes.
The knowledge generated by dealing with the aforementioned research questions will contribute to solving such practical problem, by providing companies with a handbook of practices (in the form of green and social process patterns) to undertake a sustainable transformation of their business processes; additionally, from theoretical perspective, the generated knowledge will contribute to broadening understanding of how benefit corporations pursue their dual purpose as well as to extend and refine existing green and social process patterns.

4.3.2 Research Methodology

The research questions posed above have been addressed by conducting a content analysis of benefit corporations' sustainability reporting documents, the fundamental transparency tool through which benefit corporations account for how they achieve their sustainability goals. In this Section, the phases

of content analysis methodology as they have been applied to address the research questions are discussed.

Data collection and sampling

The sustainability reporting documents published by the Italian BCs are the unit of analysis, namely the material subjected to the content analysis. Sustainability reporting documents published in between 2017 (the first year after the establishment of benefit corporation organizational model in the Italian legislation) and 2022 by Italian BCs have been collected. To collect such documents, a manual online search on the BCs' websites has been carried out. As already mentioned in Section 4.2, 352 BCs published at least a sustainability reporting document in the considered period. These 352 companies published a total number of 604 sustainability reporting documents. All documents were downloaded from the companies' websites. The majority of BCs (206/352) published only one document, 112 BCs published two or three documents, and only 34 BCs published at least four documents. Additionally, 13 BCs published only online sustainability documents.

A sample of sustainability reporting documents has been identified by applying the following criteria:

- BCs that only published online sustainability reporting documents have been excluded (13 BCs)
- for those BCs that published only one sustainability reporting document, only documents published in pdf format have been considered and only the documents with a number of pages equal or greater than 15 have been considered; 132 sustainability reporting documents belonging to 132 BCs have been included in the sample.
- for those BCs that published two or three sustainability reporting documents, only documents published in pdf format have been considered; additionally, for each company, only the most recent document has been considered and the sustainability documents with less than 15 pages have been excluded (18 documents have less than 15 pages); a total number of 93 sustainability reporting documents belonging to 93 BCs have been included in the sample.
- for those BCs that published at least four sustainability reporting documents (namely that published four, five of six documents), the documents with and average number of pages equal or greater than 15 have been considered; a total number of 120 documents belonging to 27 BCs have been included in the sample.
- a further screening of the selected documents based on the language of documents and their readability was conducted. For uniformity, documents published in English language (eight documents have been excluded; additionally, documents published in pdf format that do not contain text have been excluded from the sample (nine documents belonging to five companies have been eliminated as they only contain images, and they are scans of paper documents).

Reasonably, only for those BCs that published at least four sustainability reporting documents, all published documents have been included in the sample with the aim to analyse the evolution of sustainability practices over time. For those BCs that published up to three documents, only a document (the most recent one), has been included in the sample as the evolution over time in a limited period of two or three years is considered irrelevant.

The final sample of sustainability reporting documents includes 328 documents belonging to 239 BCs. The sample also includes 26 BCs which have published at least four sustainability reporting documents in order to analyse the evolution over time of process patterns.

Figure 4.10 shows the distribution of BC included in the sample in the ATECO macro-sectors. Most of BCs included in the sample (32%) operates in the macro sector M (professional, scientific and technical activities) and around 80% of BCs operate in the macro sectors M, C (manufacturing), J (information and communication services) and G (wholesale and retail trade). The 239 BCs included in the sample distribute in the three productive sectors as follows: 73% of BCs included in the sample belong to the tertiary sector, 24% of them operate in the in secondary sectors and the remaining BCs (6 companies) operate in the primary sector.

The majority of BCs included in the sample transformed their legal model into benefit corporation (177 BCs out of 239 are no-native BCs). In addition, most of BCs included in the sample are not Certified BCORP (152 BCs out of 239 BCs). Figure 4.11 shows the distribution of BCs included in the sample in the Italian regions. Note that the majority of considered companies are located in the Northern Italy with a predominance of BCs are in Lombardy; some Italian regions are not represented in the considered sample (i.e., Val d'Aosta, Umbria, Abruzzo, Basilicata e Calabria).

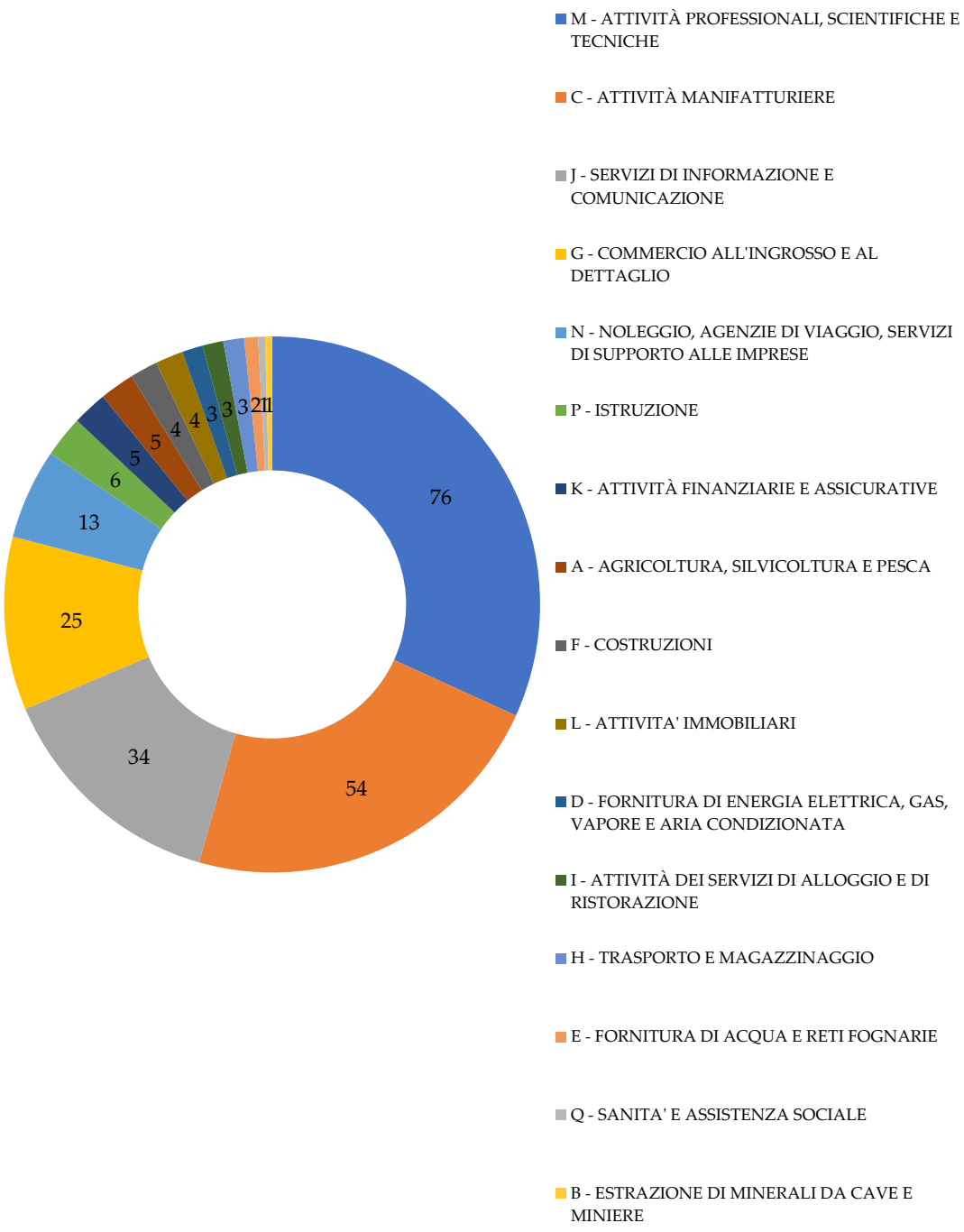

Figure 4.10. Distribution of BCs included in the sample in the ATECO macro sectors

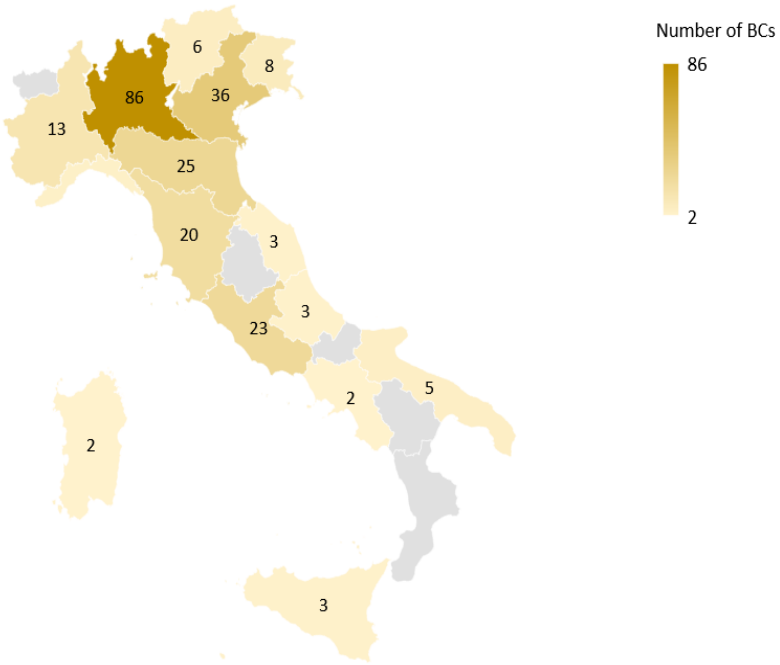

Figure 4.11. Distribution of BCs included in the sample in the Italian regions

The 328 sustainability reporting documents included in the sample are largely impact reports (240 documents out of 328); 73 documents are sustainability reports and only 15 are integrated reports. Additionally, the 328 documents included in the sample have an average number of pages equal to 42.62 (with standard deviation equal to 40.50).

Table C in Appendix lists the 239 BCs included in the sample. For each company, information about the ATECO macroeconomic sector, the activity carried out, the region in which each company operates, as well as if the company is native/no native benefit and if it has the BCORP certification is reported; also, information about the sustainability reporting documents (such as the availability of documents, the standard adopted to report and assess impact, and the quality of each document) can be found in the Table C in Appendix. As to the quality of each sustainability reporting document, an evaluation was conducted on the basis of the availability of information on the sustainability practices performed by BCs and the availability of performance indicators to measure the sustainability performance. As shown in Table C in Appendix, the analysed sustainability reporting documents were classified in four categories: (i) documents that describe sustainability practices with a qualitative approach (as they do not include any performance indicator); (ii) documents that describe sustainability practices with a limited number of indicators or in a very concise way; (iii) documents that describe sustainability practices with a quantitative approach (as they include performance indicators); (iv) documents that only report a description of company commercial/productive activities or only present the BCs' common benefit objectives. The 93% of documents included in the sample are classified in the first three categories and only 22 documents are included the last category as these documents only report information about the commercial/or productive activities that companies conduct, or they only report the common benefit objectives that the BCs pursue; accordingly, these documents were not able to provide useful information about sustainability practices that BCs implement to pursue their common benefit objectives.

Definition of coding unit, coding frame and testing of coding frame

To generate knowledge on social and environmental practices adopted by benefit corporations to make their business processes sustainable, a coding frame with two main content categories (environmental practices and social practices) has been developed. As the objective of the analysis is to detect sustainable practices through which business processes are made sustainable, some sub-categories related to business processes have been introduced. To do so, the APQC – Process Classification Framework (PCF), a taxonomy of business processes already presented in Section 2.2, has been adopted. So, the coding frame has been deductively developed.

The sentence is the coding unit, namely the part of text to be coded in the defined content categories. Before coding the sustainability documents at large scale, a pre-test of the defined coding frame has been conducted in order to detect its ambiguity and shortcomings at the early stage; the pre-test of coding frame has been carried out on a limited number of sustainability reporting documents (10 documents belonging to BCs in the macro sector C and 10 documents belonging to BCs in the macro sector M); the pre-test phase allowed to detect a critical point in the coding frame: the category called Deliver Physical Product was not able to distinguish among the business processes that generally contribute to the realization of a product (namely production, supply chain management, logistic, procurement); so some sub categories (production, supply chain, logistic, procurement) have been added to the coding frame. Figure 4.12 shows the adopted coding frame.

Name	Files	References
ENVIRONMENTAL PRACTICES	69	478
Acquire, Construct, and Manage	58	204
Deliver Physical Products	54	188
Deliver Services	0	0
Develop and Manage Business C	2	2
Develop and Manage Human Ca	18	27
Develop and Manage Products a	9	10
Develop Vision and Strategy	0	0
Manage Customer Service	0	0
Manage Enterprise Risk, Complia	0	0
Manage External Relationships	21	35
Manage Financial Resources	1	5
Manage Information Technology	0	0
Market and Sell Products and Ser	3	5

SOCIAL PRACTICES	78	719
Acquire, Construct, and Manage	5	7
Deliver Physical Products	34	73
Deliver Services	1	1
Develop and Manage Business C	34	72
Develop and Manage Human Ca	68	345
Develop and Manage Products a	2	2
Develop Vision and Strategy	0	0
Manage Customer Service	2	3
Manage Enterprise Risk, Complia	1	1
Manage External Relationships	59	173
Manage Financial Resources	23	31
Manage Information Technology	0	0
Market and Sell Products and Ser	8	11

Figure 4.12. Coding frame

Coding of the sustainability reporting documents

The 328 sustainability reporting documents have been coded by adopting the defined coding frame. The content analysis has been supported by NVivo 12 (version 1.7.1).

NVivo is a leading software for the qualitative analysis which help researchers in the collection and exploration of data, and in the extraction of concepts and knowledge from data; the software falls in the Computer-aided qualitative data analysis software (CAQDAS), and it allows to conduct qualitative

analysis, independently form adopted methodology (i.e., content analysis, discourse analysis, grounded theory).

Table 4.8 reports a part of the coding of Andriani Spa and Aboca' s sustainability documents referred to the node "Social practices - Develop and Manage Human Capital". The content of the table is extracted from the software NVivo. Note that in NVivo the content categories are called node.

Table 4.8. A part of coding for Andriani and Aboca sustainability reporting documents

<Files\\SUSTAINABILITY DOCUMENTS\\ABOCA_2019> - [12 references coded; 1,53% Coverage]
Reference 1 - 0,20% Coverage *In linea con l'impegno che ci eravamo assunti nel 2018, sono stati organizzati due eventi plenari che in totale hanno coinvolto circa 900 dipendenti. Oltre al tradizionale discorso di fine anno in cui tutta l'azienda viene aggiornata sull'evoluzione in termini di risultati, strategia e obiettivi, la direzione ha fortemente voluto anche un incontro con una rappresentanza degli operai per spiegare la rilevanza del passaggio a Società Benefit*
Reference 2 - 0,11% Coverage *Abbiamo destinato oltre 460 mila euro a premi di produzione erogati a tutti i dipendenti in correlazione agli obiettivi generali dell'azienda (premi erogati a giugno 2019 per gli obbiettivi raggiunti nel 2018, per gli obbiettivi raggiunti nel 2019)*
Reference 3 - 0,10% Coverage *Abbiamo destinato oltre 720 mila euro a premi di produzione individuali riguardanti obbiettivi specifici, oltre a 120 mila euro per premi straordinari in occasione di matrimoni o unioni civili. Per un totale di 1.300.000 euro.*
Reference 4 - 0,16% Coverage *Attivazione di un servizio ad hoc per i nostri dipendenti, tramite la piattaforma JoJob, con creazione di una competizione aziendale volta a premiare i maggiori utilizzatori (sono stati consegnati premi per 300, 350 e 400 € ai primi tre classificati). In circa sei mesi l'iniziativa ha coinvolto più di 150 persone che hanno percorso complessivamente circa 93.000 km.*
Reference 5 - 0,13% Coverage *Nel 2019 più di 150 dipendenti (+14% rispetto al 2018, con un tasso di copertura del 13% sul totale del personale) hanno usufruito del programma di smart working, che prevede la possibilità di lavorare in remoto per 4 giornate al mese: circa 91 ore di lavoro da casa per ciascun richiedente.*
Reference 6 - 0,13% Coverage *anche nel 2019 abbiamo continuato a proporre l'attività della "Cassetta delle Idee". Si tratta di una sezione dell'app in cui qualunque dipendente può proporre stimoli e idee che possano portare innovazione in azienda o migliorare la vita lavorativa in Aboca, inviandoli direttamente all'ufficio Risorse Umane*
Reference 7 - 0,14% Coverage *Al 2019 abbiamo attivato circa 60 convenzioni e sconti speciali per i dipendenti (per acquisto prodotti, corsi, palestre, asili ed eventi, ecc.), utilizzabili presso diversi esercizi commerciali collocati principalmente nella provincia di Arezzo e di Perugia, l'area da cui proviene la maggior parte dei nostri dipendenti*
<Files\\SUSTAINABILITY DOCUMENTS\\ANDRIANI_2018> - [6 references coded; 0,39% Coverage]
Reference 1 - 0,04% Coverage *Andriani intende salvaguardare la gender balance e riconoscere pari opportunità di accesso a risorse e posizioni organizzative, indipendentemente dal genere.*
Reference 2 - 0,03% Coverage *Il Gruppo Andriani inoltre crede fortemente nel suo contributo all'occupazione locale, essendo la totalità del suo senior management d dei suoi dipendenti assunti dalla comunità locale (Regione Puglia)*
Reference 3 - 0,04% Coverage *Andriani si è dunque impegnata nella pianificazione e realizzazione di vari interventi di team building, che diventeranno parte integrante delle politiche aziendali di gestione delle risorse umane*
Reference 4 - 0,06% Coverage *Nel 2018 Andriani ha organizzato il suo primo Family Day, evento finalizzato a far partecipare alla vita aziendale parenti e amici dei dipendenti, in modo da creare condivisione, partecipazione, senso di appartenenza, identità aziendale, miglioramento del clima interno, promozione delle relazioni e della comunicazione.*

Analysis of the results

Once all sustainability reporting documents have been coded, the obtained codes have been in-depth analysed to identify sustainable practices that BCs adopt to manage their business process in an environmentally and socially responsible way. An Excel database that lists all practices has been compiled. For each practice, the sustainability dimension that it allows to achieve (environmental, social

or both) is associated. For each practice, the stakeholders to which the practice refers and the impact area (i.e., governance, worker, environment, and others stakeholder envisaged by Italian BC's legislation) to which each practice refers are also reported; additionally, the key performance indicators that BCs adopt to measure and assess the environmental and social performance of each business practice are reported. Also, the business process to which each sustainability practice refers is also reported in the database. The database also contains a column for each BCs included in the analysed sample; so, it allows to determine what sustainable practices each BC implements to achieve its common benefit objectives and its sustainability goals.

The identified sustainability practices have been then analysed by adopting pattern-based approach to derive the sustainable process patterns. Practices that address the same problem have been identified and, according to the dimension of sustainability to which they refer, they constitute the practical solutions to be included in the sustainable process pattern.

4.4 Findings

In this Section, the results of the content analysis of BC's sustainability reporting documents are presented. First, the research questions RQ1.1, RQ1.2, RQ1.3 and RQ1.4 are addressed and then, the sustainable process patterns as well as some considerations on their evolution over time to answer the research question RQ are presented.

4.4.1 Benefit Corporations' sustainable processes, practices and KPIs

RQ1.1 - Which practices do benefit corporations adopt to make their business processes environmentally and socially sustainable?

The content analysis of BCs' sustainability reporting documents reveals that benefit corporations pursue their dual purpose and achieve sustainability goals by implementing several sustainable practices through which they make their business processes environmentally and socially sustainable. A total number of 280 sustainable practices were retrieved. Such practices can be distinguished into environmental and social practices, according to the dimensions of sustainability that each business practice allows to achieve; the 56% of retrieved practices are classified as social practices, and 32% are environmental practices; the remaining practices (6% of the total) are classified as both social and environmental practices as they allow to achieve simultaneously environmental and social sustainability. For instance, the practice "choose local suppliers" is included in the latter category as it allows to achieve both social sustainability goals (e.g., by supporting local economy) and environmental sustainability goals (e.g., by reducing CO_2 emissions of transports).

As to business processes, the majority of identified sustainable practices refers to the employees' management process (with 101 practices out of 280 that refer to such process); also, a relevant number or practices (85) refer to the management of operational process (i.e., production, purchasing, supply chain management, logistic and warehousing, sale management); other practices refer to the external relationships' management (48 practices out of 280), facilities management (29 practices), governance (15 practices) and research and development process (two business practices).

Not surprisingly, the analysis reveals that most environmental practices refer to the operations (production, purchasing, sale, supply chain, logistic), and the majority of socially sustainable practices refer to the employees' management process. However, as shown in Figure 4.13, some environmental

practices are adopted by BCs to achieve environmental sustainability goals in the employees' management process: for example, the practice "encourage eco-sustainable employees' travel (preferring public transport over one's own transport and preferring less impactful means such as the train rather than the plane, or purchasing plane tickets from companies that compensate the emissions)" that many BCs adopts allows to achieve environmental sustainability by taking action on the employees' management process. Similarly, BCs pursue social sustainability not only in the management of employees' process or in the external relationships management process, but also in the operations processes. For instance, the practice "donate revenues (or % of them) deriving from the sale of a particular product line to finance non-profit associations and charities" allows to achieve social sustainability goals by acting on the sale process; the practice "purchase raw materials/consumables with Fair Trade certification" allows to pursue social sustainability in the purchasing process.

Benefit corporations implement sustainable (environmental and social) practices to manage their business processes; the conducted analysis reveals that they pursue both environmental and social sustainability with a slight prevalence of the latter dimension as the majority of retrieved practices are social practices (i.e., they enable to achieve social dimension of sustainability).

Benefit corporations can be considered sustainable business forms able to effectively contribute to pursue sustainability goals and the sustainable development of the society.

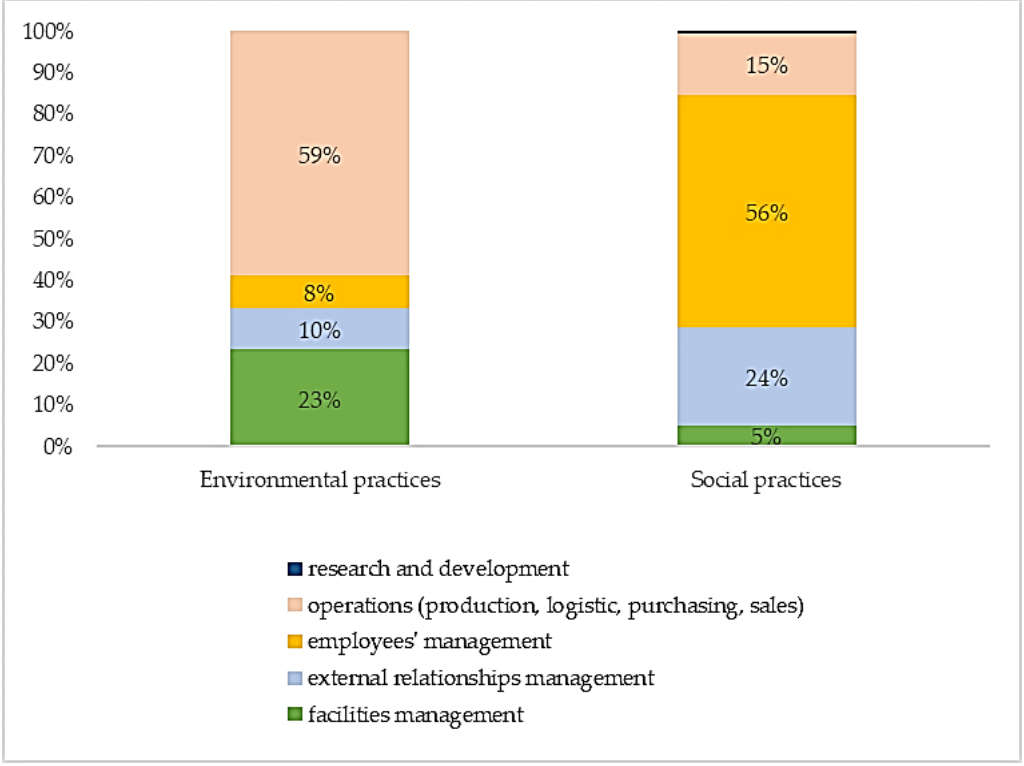

Figure 4.13. Distribution of business process in the environmental and social practices

The identified practices have been classified according to the four impact areas envisaged by the Italian BC legislation, namely governance, workers, other stakeholders, and environment. Table 4.9, Table 4.10, Table 4.11, Table 4.12, list the practices in the impact area governance, workers, other stakeholders, and environment, respectively. For each practice, the tables report the dimension of sustainability that each practice allows to achieve, the related business process, the stakeholder to whom the practice refers and the KPIs through which the environmental/social performance of each practice can be measured.

Sustainable practices are listed in descending order by number of BCs that adopt the practice. Most practices (equal to 39 % of identified business practices) fall within the impact area Workers, the 5% of practices belong to impact area Governance, and the remaining practices distribute almost equally in the two other impact area (other stakeholder and environment).

Table 4.9. Practices in the impact area Governance

Practice	Sustainability dimension	Business process	Stakeholder	KPI	Number of BCs adopting practice
map stakeholders and engage stakeholders (e.g., through virtual platforms, focus groups or interviews) to conduct a participatory materiality analysis and impact assessment	na	governance	all stakeholders		64
prepare ethical code	na	governance	workers		34
involve stakeholders and collect stakeholders' feedback (sharing company results with stakeholders and collecting feedback and ideas for improving the company strategy or investments to be made, to identify stakeholders' needs and expectations)	na	governance	all stakeholders		29
establish a Whistleblowing system to monitor discrimination and detrimental behaviour of the human dignity by encouraging employees to anonymously report any violations, illicit, incorrect, discriminatory and harmful internal behaviour	na	governance	workers		21
appoint an impact manager	na	governance	management		21
promote female leadership	na	governance	management	% women in managerial roles	16
involve stakeholders using social network platforms	na	governance	all stakeholders		5
collect stakeholder feedback on the sustainability reporting document	na	governance	all stakeholders		4
create committee for gender equality, inclusion and diversity	na	governance	workers		2
adopt Holocracy type governance system (power distributed in defined roles related to a specific company objective, organization of roles in circles that bring together different roles and responsibilities, flattening of the organizational chart, empowerment and delegation of roles)	na	governance	management		2
sign a document on the conflict of interest by the members of board	na	governance	management		2
create specific corporate divisions aimed at disseminating common well-being	na	governance	workers		1
adopt a sociocratic governance system (based on distribution of power and responsibilities, equality of roles, teamwork and objective-based work)	na	governance	management		1
rotate periodically senior resources in coordination roles	na	governance	management		1

Practice	Sustainability dimension	Business process	Stakeholder	KPI	Number of BCs adopting practice
guarantee the presence of representatives of other stakeholders (e.g., workers' representatives) who are not shareholders in the board of directors	na	governance	all stakeholders		1

Table 4.10. Practices in the impact area Workers

Practice	Sustainability dimension	Business process	Stakeholder	KPI	Number of BCs adopting practice
provide employees with professional training	S	employees' management	workers	hours of training provided average hours of training received by each employee % of employees who received training allocated budget for training (€)	110
introduce smartworking	S	employees' management	workers	% hours worked in smart working	89
pursue gender equality in hiring	S	employees' management	workers	% female employees	60
collect employees' feedback (on the company climate, level of satisfaction) through internal surveys or other tools (dedicated email address, boxes placed in common areas, dedicated section in the company APP, HR function dedicated to listening employees)	S	employees' management	workers	number of employees involved	59
introduce flexible working hours (flexible entry/exit times, 7-hours working day, light Friday, afternoon free, part-time hours)	S	employees' management	workers	number of workers taking advantage of flexible working hours	49
activate supplementary pension, insurance (e.g. life insurance) and/or health insurance (which covers medical expenses incurred by employees)	S	employees' management	workers	number of employees covered allocated budget (€)	42
provide employees with transversal training (sustainability, CSR, circular economy, biodiversity, benefit corporation and bcorp system)	E/S	employees' management	workers	hours of training provided average hours of training received by each employee % of employees who received training allocated budget for training (€)	42
provide vouchers and discounts for supermarkets, shops, restaurants, gyms, fuel, other leisure and cultural activities (travel, cinema, theatres, wellness centres, purchasing books) and other services	S	employees' management	workers	number of employees receiving the vouchers/discounts number of agreements with other companies activated	41
organize moments of sharing between employees (periodic moments of conviviality e.g., at festivity, also providing employees with a specific budget to organize such events between	S	employees' management	workers	number of events organised/year number of employees involved	38

Practice	Sustainability dimension	Business process	Stakeholder	KPI	Number of BCs adopting practice
colleagues and/or making company spaces available for the organization of convivial events)					
provide bonuses/prizes on employee pay (often linked to the achievement of objectives)	S	employees' management	workers	average amount paid per employee allocated budget to bonuses number of employees receiving the bonuses	36
hire permanent employees	S	employees' management	workers	% employees with permanent contracts	32
pursue gender equality in wages	S	employees' management	workers	male/female pay gap gross annual salary ratio man/woman	31
encourage environmentally sustainable employees' home-work travel (by encouraging the use of bicycles by making bicycles available, providing vouchers for the purchase of bicycles, setting up a reward mechanism for those who use bicycles, making electric cars/bikes/scooters available, encouraging the use of public transport by providing green mobility bonuses and subsidizing public transport passes)	E	employees' management	workers	allocated budget (€) number of employees receiving bonuses/services	30
involve employees in volunteering activities (e.g., in the support of the elderly, the poor, the vulnerable, in tree planting activities, plastic collection and cleaning of the area, blood donation) also through collaboration with non-profit organizations	E/S	employees' management	local community	number of employees involved hours of volunteering carried out	27
provide employees with transversal training (soft skills including public speaking, effective communication, time and stress management)	S	employees' management	workers	hours of training provided average hours of training received by each employee % of employees who received training allocated budget for training (€)	27
deliver reusable water bottles to each collaborator	E	employees' management	workers	allocated budget (€)	24
introduce onboarding programs for new employees	S	employees' management	workers	number of employees involved	21
organize leisure/sport activities/moments of reflection and debate on topics of common interest and team building activities (e.g., Lego Serious Play activities, escape rooms, outdoor activities)	S	employees' management	workers	number of events organised/year number of employees involved	21
provide employees with transversal training (e.g., philosophy workshops, first aid courses, courses for caregivers, courses on complementary pensions and conscious management of savings, or other unspecified transversal skills)	S	employees' management	workers	hours of training provided average hours of training received by each employee % of employees who received training	21

Practice	Sustainability dimension	Business process	Stakeholder	KPI	Number of BCs adopting practice
				allocated budget for training (€)	
provide employees with transversal training (English and foreign languages)	S	employees' management	workers	hours of training provided average hours of training received by each employee % of employees who received training allocated budget for training (€)	21
introduce leaves, paid time off and reduced working hours for employees with children (e.g., new parents, parents with children up to 6/7 years old, baby week)	S	employees' management	workers	days of paid leave/leave available for each employee number of beneficiary employees	19
optimize and reduce employees travel also by encouraging the use of remote working	E	employees' management	workers	number of trips avoided/year	17
provide employees with transversal training (skills on project management, leadership and change management, problem solving, negotiation)	S	employees' management	workers	hours of training provided average hours of training received by each employee % of employees who received training allocated budget for training (€)	16
provide employees with transversal training (digital knowledge e.g., digital skills, cybersecurity)	S	employees' management	workers	hours of training provided average hours of training received by each employee % of employees who received training allocated budget for training (€)	15
encourage eco-sustainable employees' travel (preferring public transport over one's own transport and preferring less impactful means such as the train rather than the plane, or purchasing plane tickets from companies that compensate the emissions)	E	employees' management	workers		15
organize car sharing or company car pooling or shuttle service for employees	E/S	employees' management	workers	number of employees involved	15
organize moments of discussion between employees and company managers to share work or personal issues and problems, to provide suggestions, to provide feedback on the employees' performance and to identify improvements	S	employees' management	workers	number of employees involved	14
provide health services to employees (e.g. 24-hour medical assistance, physiotherapy service, nutritional and psychological consultancy)	S	employees' management	workers	allocated budget (€) number of services provided number of employees who use the services	14

Practice	Sustainability dimension	Business process	Stakeholder	KPI	Number of BCs adopting practice
organize moments of internal discussion between employees	S	employees' management	workers	number of employees involved	14
provide meal vouchers	S	employees' management	workers	value of vouchers provided	13
provide employees with transversal training (courses on female empowerment, gender identity, education and prevention of feminicide and violence against women, prejudices, stereotypes, diversity and inclusiveness and equity)	S	employees' management	workers	hours of training provided average hours of training received by each employee % of employees who received training allocated budget for training (€)	13
provide Christmas gifts to employees (in money, in products from local charities or local gastronomic businesses, or cultural gifts such as tickets for cultural events)	S	employees' management	workers	number of employees receiving Christmas gifts allocated budget (€)	11
communicate towards employees on corporate values and the results obtained by the company (e.g., through periodic meetings, newsletters, signage, noticeboards, digital screens, company magazines)	S	employees' management	workers	number of periodic meetings held/year number of newsletters sent/year	11
provide employees training by developing skills externally (through participation in courses, conferences or online courses)	S	employees' management	workers	hours of training provided average hours of training received by each employee % of employees who received training allocated budget for training (€)	11
activate company gym and wellness areas	S	employees' management	workers		10
provide services for employees' children (e.g., scholarships, summer camps for children, scholastic support for children such as mathematics enhancement courses, homework help, remedial courses, consultancy for children with learning disabilities, support in preparation for university tests, job orientation consultancy, activation of theatre and artistic workshops)	S	employees' management	workers	allocated budget (€) number of employees who use the services	10
set up an online platform to provide welfare tools	S	employees' management	workers		9
assess the employee's carbon footprint (also taking into account eating habits, type of home/energy sources used and consumption of employees in smart working)	E	employees' management	workers		9
provide free canteen service	S	facilities management	workers		9
replace old desks and workstation with more comfortable desks and workstations (e.g., height-adjustable, large PC screens)	S	resources and inputs management	workers	number of ergonomic workstations installed	8

Practice	Sustainability dimension	Business process	Stakeholder	KPI	Number of BCs adopting practice
guarantee employees' technological equality (by providing cash bonuses for the purchase of equipment, furniture and software to work from home)	S	employees' management	workers	allocated budget (€) number of employees receiving bonuses	8
activate free tax consultancy/assistance service for employees	S	employees' management	workers	allocated budget number of employees who use the services	8
activate disease screening programs for employees (through agreements with non-profit associations, blood donors, or with hospitals and analysis laboratories to allow employees and, in some cases, family members, to benefit from free screening)	S	employees' management	workers	number of agreements with healthcare facilities activated number of employees who use the services	8
provide contributions and vouchers for the purchase of children's products, or for babysitting services, or for the payment of nursery school and summer camp fees, contributions or reimbursements for children's education expenses	S	employees' management	workers	allocated budget (€) number of employees receiving bonuses	8
set up kitchen space for employees who spend their lunch break in the company	S	facilities management	workers		8
establish a solidarity bank/hours fund (possibility for employees to transfer vacation days to other colleagues free of charge)	S	employees' management	workers		8
allow employees to purchase company products/services or company shares at discounted prices	S	employees' management	workers		7
activate company library with free access for employees	S	employees' management	workers		7
communicate the environmental and social sustainability practices implemented through the company website or newsletter sent to employees	E/S	employees' management	workers	number of newsletters sent/year	7
reimburse of health expenses incurred by employees	S	employees' management	workers	allocated budget (€) number of employees receiving reimbursements	7
provide baby bonuses (in case of maternity and paternity of employees)	S	employees' management	workers		7
involve employees in the company decision making	S	employees' management	workers	number of employees involved	6
purchasing food to consume in the company (e.g., during meetings) from catering services that operate in a socially sustainable manner or from food delivery services/platforms against food waste	E/S	purchasing management	workers		6
plant a tree for each employee (e.g., on the occasion of a birthday) or for each new member of the company community	E	employees' management	environment	number of trees planted/year kg of plastic collected	6
monitor and map employees 'skills	S	employees' management	workers		6
provide cash bonuses and/or leave on the occasion of employees' weddings or civil unions	S	employees' management	workers	allocated budget (€) number of employees receiving bonuses	5

Practice	Sustainability dimension	Business process	Stakeholder	KPI	Number of BCs adopting practice
supply free covid PPE and covid screening to employees	S	employees' management	workers	allocated budget (€)	5
provide salary advances, TFR and/or the 14th month's salary to employees	S	employees' management	workers	number of employees receiving the disbursements	4
provide time-saving services for employees (possibility for employees to receive groceries or medicines in the company, laundry service with collection and return in the company, car washing service in the company, ironing service)	S	employees' management	workers	number of employees who use the services	4
draft the energy saving manual/waste reducing guide and distribute it in offices	E	employees' management	workers		4
communicate to employees the risks associated with smoking through dedicated campaigns	S	employees' management	workers		4
provide free flu vaccines to employees	S	employees' management	workers	allocated budget (€) number of employees who use the services	4
promote an inclusive recruitment (including a message in job adverts affirming your commitment to diversity, equity and inclusion)	S	employees' management	workers		4
use inclusive language (e.g., through illustrations that portray people without distinction of gender, ethnicity and any possible diversity, publishing content with subtitles or lis language) among employees	S	employees' management	workers		4
promote the socialization and involvement of employees who work remotely (by organizing online sharing moments such as online coffee breaks and online gym lessons, online socializing events e.g. on metaverse platforms)	S	employees' management	workers	number of events organised number of employees involved	4
organize events open to employees' families (e.g., family day-event)	S	employees' management	workers	number of events organised/year number of employees involved	4
establish solidarity fund (into which employees/managers can voluntarily pay sums of money which will be donated free of charge to support the employees in case of need)	S	employees' management	workers		4
set up corporate academy and/or learning platforms	S	employees' management	workers		4
replace old machinery with automatic machinery to improve the ergonomics of workstations and reduce repetitive work loads	S	resources and inputs management	workers	number of machinery replaced	4
organize open space workplaces to facilitate interaction between employees and teamwork	S	facilities management	workers		3
support financially employees who find themselves in difficult (for personal and/or family issues)	S	employees' management	workers	allocated budget (€) number of beneficiary employees	3

Practice	Sustainability dimension	Business process	Stakeholder	KPI	Number of BCs adopting practice
provide counselling and psychological support to new parents	S	employees' management	workers	number of beneficiary employees	3
introduce slow working when female employees return from maternity leave	S	employees' management	workers	number of beneficiary employees	3
provide online professional training courses to reduce the environmental impact of travel	E/S	employees' management	workers	number of training courses provided online/total training courses provided	3
introduce reverse mentoring	S	employees' management	workers	number of implemented initiatives	2
provide services to support employees who are also caregivers of non-self-sufficient people (e.g., by providing the caregiver employee with support from specialized operators who listen to their needs and offer the most appropriate assistance services such as research carer, RSA facilities, disabled transport services)	S	employees' management	workers	number of beneficiary employees	2
assign an impact project to each newly hired worker (linked to each individual's sensitivity and possibilities, e.g., waste collection, digital literacy projects) to be carried out, measured and reported	S	employees' management	workers		2
recruit and hire young employees who are sensitive to environmental issues, social responsibility and inclusiveness	S	employees' management	workers		2
valorise internal skills (internal search for the skills needed before carrying out external personnel searches)	S	employees' management	workers		2
provide additional leave in case of serious illness of children/family members	S	employees' management	workers	number of beneficiary employees	2
guarantee employees privacy (excluding investigations related to tastes, ideas and private life) both during hiring process and during work life	S	employees' management	workers		2
create a pet friendly office	S	facilities management	workers		2
establish a community with former employees (by involving former employees in moments of discussion and/or company events, by providing Christmas gifts also for former employees)	S	employees' management	workers		2
provide employees with transversal training (courses on generation gap, parent-child relationship and conflict, emotional intelligence)	S	employees' management	workers	hours of training provided average hours of training received by each employee % of employees who received training allocated budget for training (€)	2
provide employees with transversal training (knowledge on healthy lifestyle and correct diet)	S	employees' management	workers	hours of training provided average hours of training received by	2

Practice	Sustainability dimension	Business process	Stakeholder	KPI	Number of BCs adopting practice
				each employee % of employees who received training allocated budget for training (€)	
eliminate architectural barriers to make offices/buildings accessible to all	S	facilities management	workers		1
adopt genderless bathrooms	S	facilities management	workers		1
install works of art in the offices and common areas	S	facilities management	workers		1
provide taxi vouchers for employees who leave the company headquarters at night	S	employees' management	workers	allocated budget (€) number of employees receiving bonuses	1
distribute share of profits to employees	S	employees' management	workers	% profit distributed to employees number of employees who receive the share of profits	1
provide bonuses to cover expenses for employees who study at university	S	employees' management	workers	allocated budget (€) number of employees receiving bonuses	1
provide employees with a card to recharge their electric vehicle for free at affiliated charging stations or at home at a reduced price	S	employees' management	workers	allocated budget (€) number of employees receiving bonuses	1
provide microcredit for employees	S	employees' management	workers	allocated budget (€) number of employees receiving the service	1
organize meeting for internal knowledge sharing in which each employee teaches something to other colleagues	S	employees' management	workers	number of meetings organised number of employees involved	1
organize meditation courses for employees	S	employees' management	workers	number of employees involved	1
create a corporate APP to encourage the engagement of the corporate community	S	employees' management	workers		1
recommend a list of environmentally sustainable and/or ethical suppliers for the purchase of home office furniture and equipment	E/S	employees' management	workers		1
install defibrillator in workplaces	S	employees' management	workers		1
introduce healthier, low-impact company canteen menus	S	employees' management	workers		1
promote salary transparency (internal salary sharing)	S	employees' management	workers		1
organize failure party (celebration of failures that an employee may encounter)	S	employees' management	workers		1
implement alias professional career for trans people	S	facilities management	workers		1
provide leave for extended periods for foreign (non-EU) workers to encourage reconciliation with family members	S	employees' management	workers	number of employees who take advantage of the permits	1

Practice	Sustainability dimension	Business process	Stakeholder	KPI	Number of BCs adopting practice
provide APP for menu booking with nutritional and allergy information on dishes	S	employees' management	workers		1
provide parachutes for employees who intend to carry out work experience abroad (giving them the possibility of carrying out the experience abroad and returning to the company after a year under the same economic conditions)	S	employees' management	workers		1
provide micorlearning - delivery of daily training pills via screens installed in the company	S	employees' management	workers		1
encourage employees to stay in family-run or AirBnB structures when work traveling to support the local economy of the territories	S	employees' management	workers	number of nights in AirBnB or family-run hotels per employee	1
reimburse employees for their own transport costs	S	employees' management	workers	allocated budget (€) number of employees receiving reimbursements	1

Table 4.11. Practices in the impact area Other stakeholders

Practice	Sustainability dimension	Business process	Stakeholder	KPI	Number of BCs adopting practice
collaborate and support (through donations) non-profit associations that operate to support disadvantaged categories (minors, migrants, homeless people, prisons, women victims of violence) or to support vulnerable people (disabled, elderly, people suffering from serious illnesses)	S	external relationships management	charities	donated amount (€)	60
participate in conferences, lectures and workshops (at universities or schools or public events) to explain and disseminate the sustainable business model or the BCORP and benefit corporation model to generate and increase awareness among citizens and consumers regarding sustainable business	S	external relationships management	citizens	number of initiatives undertaken number of people involved/reached by the initiatives	55
collaborate with universities to produce degree theses and/or training internships	S	external relationships management	universities/ research institutions	number of degree theses completed number of internships activated	45
choose local suppliers to support the local economy and reduce transport CO2 emissions	E/S	supply chain management	suppliers	% local suppliers % purchases from local suppliers	45
support (through donations or sponsorships) local cultural initiatives (e.g., literary prizes, theatre companies, village festivals)	S	external relationships management	local community		35
conduct supplier assessment according to environmental sustainability criteria	E	supply chain management	suppliers	% suppliers evaluated % suppliers who responded to the evaluation	32

Practice	Sustainability dimension	Business process	Stakeholder	KPI	Number of BCs adopting practice
				questionnaire % suppliers who comply with environmental sustainability requirements	
conduct supplier assessment according to social sustainability criteria	S	supply chain management	suppliers	% suppliers evaluated % suppliers who responded to the evaluation questionnaire % suppliers who comply with environmental sustainability requirements	32
provide pro-bono services (e.g., aimed at NGOs or local charities)	S	product/ service sale management	charities	hours of services provided	22
collaborate and finance universities/research institutions to carry out research projects	S	external relationships management	universities/ research institutions	% employees involved in research activities invested amount (€) number of publications	22
support (through donations or sponsorship) local sport associations	S	external relationships management	local community		22
implement initiatives to promote the biodiversity of the area (planting trees of various species in the area, adopting beehives and placing hives in the area to encourage biodiversity)	E	external relationships management	environment	number of initiatives undertaken allocated budget (€)	20
hire workers from disadvantaged categories (ex-prisoners, refugees, immigrants, people with disabilities or unemployed women over 50)	S	employees' management	weaker group of the population	number of workers from disadvantaged categories hired	20
choose Italian suppliers	E/S	supply chain management	suppliers	% Italian suppliers % purchases from Italian suppliers	18
donate products (e.g., unsold food products or production surpluses, or processing scraps, or medicines to the community (schools, local charities and associations, schools)	S	product/ service sale management	local community	quantity of products donated	17
collaborate with non-profit associations that work to protect the environment and biodiversity (e.g. associations that operate to reduce waste such as plastic, to protect the sea, that promote organic and sustainable agricultural practices)	E	external relationships management	environmental protection associations	number of collaborations undertaken	16
activate school-work alternation courses and training internships	S	external relationships management	citizens	number of internships/school-work alternation paths activated number of students involved	16
make a donation to international or national non-profit organizations	S	external relationships management	charities	donated amount (€)	15

Practice	Sustainability dimension	Business process	Stakeholder	KPI	Number of BCs adopting practice
transfer part of processes to partners who share the same values (e.g. transfer the cleaning of spaces to social cooperatives or social companies that operate in socially sustainable manner)	S	production	suppliers		15
implement and finance urban redevelopment interventions in the municipality in which the company operates, restoration of works of art with historical or social interest (e.g. schools)	S	external relationships management	local community	allocated budget (€)	14
open of the production plant to school visits	S	external relationships management	citizens	number of students involved	13
activate training courses (both in schools and aimed at the community) on environmental sustainability issues (e.g. energy management, waste recycling and differentiation, environmental education)	E	external relationships management	citizens	number of courses activated number of citizens involved	13
hire young people	S	employees' management	citizens	number of workers under 30 hired	13
engage and raise awareness among suppliers to guide them in improving environmental sustainability performance (e.g., on the issues of climate change, eco-friendly packaging, use of renewable energy, low environmental impact transport) and social sustainability performance	E/S	supply chain management	suppliers	number of awareness-raising initiatives undertaken number of suppliers involved	13
activate training courses for citizens/young people living in the area to encourage the acquisition of particular skills (e.g., linguistic skills, digital skills, correct use of the web, coding, entrepreneurship, other technical and professional skills) also in collaboration with schools and training institutions	S	external relationships management	citizens	number of courses activated number of citizens involved	12
promote the adoption of healthy and correct lifestyles (through nutrition education in the schools, launch of contests, participation/organization of events, launch of communication campaigns, publication of books)	S	external relationships management	citizens	number of training courses activated number of activities undertaken number of citizens involved	12
donate revenues (or % of them) deriving from the sale of a particular product line to finance non-profit associations and charities (including those for the protection of animals) / donate revenues (or % of them) deriving from a certain number of shopping days s (e.g. Black Friday) to finance associations and charities/ donate revenues (or % of them) deriving from the sale of products to finance social initiatives (e.g. construction of wells and water purification plants in water-critical areas, financing of scholarships in Africa)	S	product/ service sale management	charities	% sales revenue donated	12
prepare supplier code of conduct including criteria (e.g., product quality, ethical, environmental and social	E/S	supply chain management	suppliers		12

Practice	Sustainability dimension	Business process	Stakeholder	KPI	Number of BCs adopting practice
principles) that suppliers are required to respect					
choose suppliers which have environmental certifications	E	supply chain management	suppliers	% suppliers with environmental certifications	10
implement initiatives to support developing countries (e.g., construction of schools, health facilities, infrastructure to make drinking water accessible) through collaboration with non-profit associations that operate to support the populations of developing countries	S	external relationships management	developing countries	number of initiatives undertaken allocated budget (€)	9
establish challenges/contests/hackathons/social challenges open to the community to raise citizens' awareness of environmental issues (e.g., climate change, challenges for plastic collection and land cleaning, reduction of the environmental impacts of behaviours, challenge to encourage the adoption of ethically and environmentally sustainable behaviors and purchases)	E/S	external relationships management	citizens	number of initiatives undertaken number of citizens involved/reached by the initiatives undertaken	9
raise citizens' awareness of environmental issues and climate change through participation/organisation of dedicated public events, meetings and debates on the topic	E	external relationships management	citizens	number of initiatives undertaken number of citizens involved/reached by the initiatives undertaken	9
activate technical/professional training courses for fragile and disadvantaged people (disabled, unemployed, migrants and refugees) aimed at job placement and job accompaniment	S	external relationships management	weaker group of the population	number of training courses activated number of citizens involved	9
hire workers from the area in which the company operates	S	employees' management	local community	% of new hires in the year from the local area % employees coming from the local area	9
open of the production plant to visits by citizens	S	external relationships management	citizens	number of citizens involved	8
make donation to non-profit associations that work to protect the environment	E	external relationships management	environmental protection associations	donated amount (€)	7
make a donation to hospitals and healthcare/rehabilitation facilities	S	external relationships management	healthcare institutions	donated amount (€)	7
collaborate with universities/research institutions to develop innovative and sustainable products/processes	E/S	research and development	universities/research institutions	number of collaborations undertaken	6
raise citizens' awareness on recycling and separate waste collection through dedicated initiatives (e.g., by providing recycled products at public events)	E	external relationships management	citizens	number of initiatives undertaken number of citizens involved/reached by the initiatives undertaken	6
make Christmas gifts to employees from charities	S	external relationships management	charities	% Christmas gifts from charities	6

Practice	Sustainability dimension	Business process	Stakeholder	KPI	Number of BCs adopting practice
donate PCs (even used in the office) to local charities	S	external relationships management	charities	quantity of products donated	6
activate partnerships with universities to finance university degree and master's degrees	S	external relationships management	universities/research institutions	allocated budget (€)	5
provide scholarships to local students	S	external relationships management	local community	allocated budget number of students involved	5
organize cultural events (e.g., exhibitions, book presentations)	S	external relationships management	local community	donated amount (€) number of funded initiatives	5
make the company's spaces available to organize events for third sector associations	S	external relationships management	charities		5
support for typical local activities (e.g., companies that produce food and wine products or other typical local agricultural products) through the purchase of products (e.g., to create Christmas gifts) or directly by employees	S	external relationships management	local community	number of businesses supported quantity of products purchased	5
realize landscape redevelopment of the territory	E	external relationships management	environment	allocated budget (€)	5
transfer parts of the production process (e.g. product packaging) to social cooperatives (which favour the inclusion of disabled people or valorise the work of prisoners, or which employ refugee women) or create particular product lines realised by social cooperatives	S	production	charities		5
donate reusable water bottles to children of sport centres	S	external relationships management	local community	quantity of products donated	4
donate part of the profits to non-profit organizations and associations	S	external relationships management	charities	% profits donated	4
donate unsold products close to expiration or production surpluses to the food bank or other charities	S	product/ service sale management	charities	quantity of products donated	4
establish a foundation linked to the company which carries out philanthropic activities	S	external relationships management	citizens		3
donate books and/or materials to schools	S	external relationships management	local community	quantity of products donated	3
make a donation to support serious emergencies in the local or national territory (e.g., earthquakes, floods)	S	external relationships management	local community	donated amount (€)	3
establish an award for degree theses that propose innovative solutions to combat climate change or that focus on the theme of sustainability	E/S	external relationships management	universities/research institutions	allocated budget (€) number of degree thesis awarded	3
raise citizens' awareness of environmental issues and climate change through the organization of particular initiatives (e.g., floral installations in the square on the topic of bees highly	E	external relationships management	citizens	number of initiatives undertaken number of citizens involved/reached by	3

Practice	Sustainability dimension	Business process	Stakeholder	KPI	Number of BCs adopting practice
threatened by climate change, organization of days dedicated to the topic of climate change, participation in Earth Day)				the initiatives undertaken	
donate % of revenues from sale to environmental protection associations	E	product/ service sale management	environmental protection associations	% sales revenue donated	3
activate home delivery service of products	S	product/ service sale management	customers		2
choose local transport providers	E/S	logistic and warehousing	local community	% local transport service suppliers	2
establish an award aimed at local businesses that have distinguished themselves for environmental sustainability and the protection of the territory	E	external relationships management	citizens	allocated budget (€) number of participating companies	2
provide mentorship service for innovative start-up or support for innovative start-up through prizes	S	external relationships management	citizens	number of businesses supported	2
sell charities' products among employees and donate the amount raised to the charities	S	external relationships management	charities	donated amount	2
activate suspended shopping service	S	product/ service sale management	local community		1
donate food and essentials to the food bank	S	external relationships management	charities	quantity of products donated	1
donate toys to hospitals	S	external relationships management	healthcare institutions	quantity of products donated	1
establish a fund to support micro entrepreneurship in Africa	S	external relationships management	developing countries	allocated budget (€)	1
activate psychological counselling open to the community	S	external relationships management	local community	invested amount (€) number of citizens involved	1
donate defibrillator to the community	S	external relationships management	local community	quantity of products donated	1
organize first aid courses open to the community	S	external relationships management	local community	number of courses activated number of citizens involved	1
donate products during charity events	S	external relationships management	charities	quantity of products donated	1
compensate employees' water footprint by donating water to areas where families do not have access to drinking water	S	employees' management	developing countries	allocated budget quantity of donated water	1
substitute traditional search engine with a socially sustainable search engine (e.g., web browser that uses advertising revenues to support social enterprises, social inclusion initiatives for the weakest group of the population)	S	resources and inputs management	weaker group of the population		1

Practice	Sustainability dimension	Business process	Stakeholder	KPI	Number of BCs adopting practice
launch product lines specifically designed for the elderly and disabled	S	production	customers		1
donate psychological therapy sessions to clients	S	product/ service sale management	customers	number of services donated	1
sell products at controlled prices (e.g. para pharmaceutical products) to benefit the weakest groups of the population	S	product/ service sale management	weaker group of the population		1
sell products on online platform which is specifically aimed at small businesses that operate in a sustainable manner	S	product/ service sale management	local community		1

Table 4.12. Practices in the impact area Environment

Practice	Sustainability dimension	Business process	Stakeholder	KPI	Number of BCs adopting practice
substitute conventional energy with energy (electricity and gas) produced from renewable sources and from certified suppliers with guarantee of origin (GO)	E	resources and inputs management	environment	% energy requirement covered by purchases of energy from renewable sources CO2 emissions saved energy deriving from renewable sources used (KW)	70
reduce the use of plastic (by eliminating disposable plastic from offices and/or the canteen, eliminating plastic water bottles and installing drinking water dispensers in the offices; installing bulk drink dispensers in the offices; by using only coffee in compostable grains or pods)	E	resources and inputs management	environment	Kg plastic saved	54
dispose wastes correctly (by installing containers for separate waste collection)	E	facilities management	environment	number of containers for separate waste collection installed KG separated waste	53
install a photovoltaic system	E	facilities management	environment	installed power (KW) m2 panels installed CO2 eq saved % energy produced by photovoltaic system % energy requirement covered by the system	43
collect customers' feedback on the level of satisfaction related to products/services	S	product/ service sale management	customers	number or feedback collected	41
compensate for C02 emissions through tree planting and reforestation works	E	facilities management	environment	number of trees planted/year KG CO2 compensated	40
achieve buildings' energy efficiency (through the installation of windows with lower thermal transmissibility, insulated panels, replacement of gas boilers with heat pumps, replacement of heating/cooling systems with more energy efficient ones, relamping or	E	facilities management	environment	KW of energy saved KG CO2 not released/saved	36

Practice	Sustainability dimension	Business process	Stakeholder	KPI	Number of BCs adopting practice
replacement of incandescent lights with LED lights)					
substitute traditional company vehicles with ecological vehicles (electric, hybrid or at least Euro6)	E	resources and inputs management	environment	number of ecological vehicles adopted number of ecological vehicles purchased/year	34
reduce paper consumption (by digitizing documents, dematerialising communication in shops by replacing advertising billboards or price signs with digital monitors, replacing paper pay slips with digital pay slips, dematerialising production documentation such as product technical data sheets or production orders on workstations)	E	resources and inputs management	environment	Kg paper saved	32
purchase eco-friendly packaging (in recycled paper/FSC certified paper, in biodegradable plastic, in recycled plastic, in compostable material)	E	purchasing management	environment	% eco-friendly packaging	30
develop eco-sustainable packaging solutions (e.g., by replacing plastic with glass; by creating packaging solutions that do not have disposable parts with instructions printed directly on the packaging and inks from renewable sources, favouring recycled materials, by reducing weight/quantity of materials used to create the packaging or reduction of overpackaging)	E	production	environment	Kg of plastic saved kg of materials saved	28
monitor and reduce water consumption (by installing monitoring software; by installing low-flow water dispensers in buildings; by using groundwater or rainwater recovery for irrigation needs)	E	resources and inputs management	environment	liters of water saved	21
use eco-friendly paper (recycled, FSC certified, derived from sugar cane)	E	resources and inputs management	environment		20
purchase eco-friendly consumables (recycled paper/unbleached paper/FSC certified paper; plastic free consumables; consumables/stationery made from recycled plastic)	E	purchasing management	environment	% eco-friendly consumables	20
purchase environmentally friendly raw materials (e.g., recycled raw materials; FSC certified in the case of paper or wood; organic in the case of agricultural and food products)	E	purchasing management	environment	% eco-friendly raw materials	18
reduce energy consumption in the offices (by installing presence/movement sensors for the lighting system; by installing an automatic control unit for automatic switching on/off of the heating/cooling systems when the offices are manned/remote control of the heating and cooling systems; by modulating the temperature in the working	E	resources and inputs management	environment	KW of energy saved kg CO2 not released/saved	17

Practice	Sustainability dimension	Business process	Stakeholder	KPI	Number of BCs adopting practice
environments; by installing large windows to exploit natural light)					
install charging stations for electric vehicles	E	facilities management	environment	Number of charging points installed	16
conduct differentiation and recycling of production wastes	E	production	environment	% production waste recycled	15
adopt ethical marketing (ethical communication towards customers by avoiding redundant push messages, advertising emails, guarantee privacy and security for customers' data)	S	product/service sale management	customers		14
reuse processing waste to produce energy (e.g. from biomass/biogas) to power production plants or recover and reintroduce production waste into production	E	production	environment	% energy produced by recovering processing waste (KW) quantity of processing waste recovered and reintroduced into production	14
compensate for CO2 emissions by purchasing carbon credits or financing carbon offset projects (which generate certified carbon credits)	E	facilities management	environment	number of funded projects Kg CO2 compensated	13
adopt product labelling (including digital with QR code) which provides information relating to the environmental sustainability of the product and the correct disposal of the product and/or packaging or which reports environmental issues to make consumers reflect	E	product/ service sale management	customers		12
launch product lines made with environmentally friendly materials (e.g., organic materials, recycled materials, waste materials, or waste food raw materials because they are not suitable for large-scale distribution)	E	production	customers	% eco-friendly products included in the offer	11
obtain environmental certification for products (e.g, organic certification, gluten free certification, FSC certification of wood/paper products)	E	production	customers	number of environmental certifications obtained	11
use only ecological and natural products and multipurpose rags to clean spaces	E	facilities management	environment		10
realize green areas in the company headquarters and place green plants in the offices	E	facilities management	environment	m^2 green area	8
redevelop buildings through the use of eco-sustainable materials (e.g. eco-sustainable paints, photocatalytic paints, furnishings made of eco-sustainable materials such as wood, seat fabrics made from recycled materials, soundproof floors; office furniture made with recycled and eco-compatible materials)	E	facilities management	environment		8
establish company headquarters in a co-working building	E	facilities management	environment		8
analyse the social and environmental impacts of products (e.g., using SLCA methodology)	E/S	production	environment		8

Practice	Sustainability dimension	Business process	Stakeholder	KPI	Number of BCs adopting practice
compensate for products sold (e.g. by planting a tree every time a certain quantity of products sold is reached; collecting of a quantity of plastic equivalent to the quantity of products sold; planting a tree for each new affiliated seller; planting a tree for each new contracted service/customer)	E	product/ service sale management	environment	number of trees planted/year kg of plastic collected	7
adopt good practices in deliveries (optimization of deliveries by using fully loaded vehicles, replacing road transport with less impactful rail and/or maritime transport, use of intermodal transport)	E	logistic and warehousing	environment	KG CO2 non released/saved	7
purchase energy star electronic equipment (such as PCs), with low energy consumption and with automatic stand-by systems	E	purchasing management	environment		7
obtain LEED (Leadership in Energy and Environmental Design) certification for buildings and production plants/offices	E	facilities management	environment		6
achieve buildings' energy efficiency by installing an energy consumption monitoring system	E	facilities management	environment		5
monitor buildings' greenhouse gas emissions (through dedicated software installation)	E	facilities management	environment		5
replace machinery with others that are more efficient in terms of energy and/or material consumption	E	resources and inputs management	environment		5
purify the waste water from the production process and reintroduce the purified water into the environment or into the production process	E	production	environment	% water purified	5
substitute digital service provider (such as email hosting) with an environmentally sustainable server provider (e.g. which offsets its CO2 emissions, which has a plan to reduce its carbon footprint or whose data centers run only on electricity from renewable sources)	E	resources and inputs management	environment		5
purchase raw materials/consumables or products for sale with Fair Trade certification	S	purchasing management	citizens	% certified raw materials/consumables	5
obtain socially responsible product certifications (e.g., fair trade, Kosher, Halal, VeganOk)	S	production	customers	number of social certifications obtained	5
recover abandoned industrial sites to avoid the consumption of virgin land for the construction of new production sites or recover new production spaces from the redevelopment of existing and disused spaces	E	facilities management	environment	m^2 of land saved	4
use carriers and transport services that reduce polluting emissions or carriers that offset their environmental impact (by requiring an additional cost to cover the costs of CO2 compensation)	E	logistic and warehousing	environment	number of carriers carrying out emissions compensation/tot carriers	4

Practice	Sustainability dimension	Business process	Stakeholder	KPI	Number of BCs adopting practice
recover energy waste (e.g. hot air) and reuse for heating buildings	E	production	environment	% energy recovered	4
compensate for CO2 emissions deriving from internet use/access to the company website by planting trees	E	resources and inputs management	environment	number of trees planted/year KG CO2 compensated	4
involve customers in the product/service design	S	research and development	customers		4
treat customers equally	S	product/ service sale management	customers		3
monitor transport emissions	E	logistic and warehousing	environment		3
use eco-sustainable tertiary packaging (by replacing plastic packaging with cardboard packaging, using recycled or biodegradable packaging materials, eliminating adhesive labels, using recycled plastic materials as package filler)	E	logistic and warehousing	environment	kg of plastic saved % recycled plastic in the packaging % biodegradable plastic in the packaging	3
maintain periodically machinery	E/S	resources and inputs management	environment		3
purify the water used during production processes and reuse it for activities that do not require specific quality requirements (e.g. cleaning of environments)	E	production	environment	% water purified	3
purchase certified animal raw materials (for example certified cruelty free which guarantee animal welfare or which are not tested on animals)	S	purchasing management	animals	% certified animal raw materials	3
create rechargeable products	E	production	environment	Number of rechargeable products included in the offer	3
reuse packaging (in internal processes for the production of new packaging)	E	production	environment	% of packaging reused	3
obtain environmental certification of the production process (e.g. organic production certification, production to protect biodiversity)	E	production	customers	number of environmental certifications obtained	3
create products that can be dismantled and have separable components to encourage correct recycling of the components	E	production	environment	number of products with separable components	3
sell products in bulk or with reusable packaging (e.g., fabric shopping bags)	E	product/ service sale management	environment	% products in bulk or with reusable packaging sold	2
compensate for vehicles CO2 emissions by purchasing climate-neutral fuel paper (managed by a third-party company which, based on fuel consumption, finance CO2 offset projects)	E	facilities management	environment	Kg CO2 compensated	2
use electric tools and/or eco-sustainable products for greenery maintenance	E	facilities management	environment		2
optimize tertiary packaging (minimization of package dimensions, use of narrower packages that can be placed in greater numbers on pallets)	E	logistic and warehousing	environment	Kg of materials saved	2

Practice	Sustainability dimension	Business process	Stakeholder	KPI	Number of BCs adopting practice
install print management software to monitor paper consumption in the offices	E	resources and inputs management	environment		2
use eco-friendly institutional communication fonts (i.e., which require less ink for printing)	E	resources and inputs management	environment		2
purchase refurbished PCs for offices	E	purchasing management	environment		2
repair PCs and IT tools	E	production	environment		2
promote product repairability	E	production	environment		2
collect, recycle and recover end-of-life products from customers	E	reverse logistic	customers	% of end-of-life products collected and recycled/recovered	2
collect end-of-life products and destine them to charities (also with the provision of a digital interface that allows customers to track the destination of the products, as in case of clothes)	E/S	reverse logistic	customers	% of end-of-life products collected and donated to charities	2
compensate for CO2 through environmental reclamation works	E	facilities management	environment	KG CO2 compensated number of funded projects	1
establish company headquarters in a building built according to energy saving criteria	E	facilities management	environment		1
install indoor pollutant detection sensors in offices	E	facilities management	environment		1
rent pallets (instead of purchasing pallets) to reduce environmental impact	E	logistic and warehousing	environment		1
install trigeneration system for self-production of electrical, thermal and cooling energy	E	facilities management	environment	energy produced (KW)	1
substitute conventional energy with energy produced from biomass	E	resources and inputs management	environment	% energy produced from renewable sources (KW)	1
compensate for paper consumption by planting trees	E	resources and inputs management	environment	number of trees planted/year kg CO2 compensated	1
replace old machinery washing systems with a more efficient systems to reduce water consumption	E	resources and inputs management	environment		1
install systems to reduce greenhouse gas emissions in chimneys	E	facilities management	environment		1
install timers for switching on/off machinery	E	resources and inputs management	environment		1
install timers and valves to reduce water consumption in the production process	E	resources and inputs management	environment		1
implement website standby page after a few minutes of inactivity	E	resources and inputs management	environment		1
adopt cloud sharing instead sending emails	E	resources and inputs management	environment		1
substitute traditional search engine with an environmentally sustainable search	E	resources and inputs management	environment		1

Practice	Sustainability dimension	Business process	Stakeholder	KPI	Number of BCs adopting practice
engines (e.g. search engine which uses advertising revenues to plant trees)					
purchase company gadgets at zero km, purchased locally to support the local economy	S	purchasing management	local community		1
launch product lines whose production uses waste from other processes (e.g., purified water) and which contribute to capturing the CO2 emitted	E	production	customers	kg CO2 captured quantity of products produced	1

Table 4.9 lists practices in the impact area Governance, namely those practices which BCs implement to achieve a transparent, inclusive, and ethical governance; note that no sustainability dimension has been associated to governance practices. In such impact area, the practices "map stakeholders and engage stakeholders (e.g., through virtual platforms, focus groups or interviews) to conduct a participatory materiality analysis and impact assessment" and "prepare ethical code" are the most adopted practices. Table 4.10 lists practices in the impact area Workers that refer to the practices that BCs implement to manage the relationships with their employees in a sustainable manner. The practice "provide employees with professional training" followed by the practice "introduce smart working" are the most adopted practices in the impact area Workers. Also, practices "pursue gender equality in hiring", and "collect employees' feedback" are very common practices in the impact area Workers. Table 4.11 lists sustainable practices referred to impact area Other stakeholder that includes all practices through which BCs manage the relationships with the external stakeholders (e.g., local community, suppliers, citizens). The practice "collaborate and support through donations non-profit associations that operate to support disadvantaged categories" is the most adopted practice in such impact area. Also, the business practices "collaborate with universities to produce degree theses and/or training internships", "conduct supplier assessment according to environmental and social sustainability criteria", "provide pro-bono services (e.g., aimed at NGOs or local charities)" are practices implemented by many BCs to manage the relationships with the external stakeholders. Table 4.12 lists the practices in the impact area Environment that, according to the Italian BC legislation, refers to all practices related to the life cycle of goods and services, the exploitation of resources, energy, commodities, production, logistics and distribution processes. Practices related to purchasing process such as "purchase raw materials/consumables with Fair Trade certification", and "purchase certified animal raw materials (for example certified cruelty free which guarantee animal welfare or which are not tested on animals)", and "collect customers' feedback on the level of satisfaction related to products/services" are included in such impact area. Such practices, however, enable to pursue social sustainability rather than environmental sustainability. This implies that the impact area Environment, as it is called in the Italian legislation, is misleading in the sense that it can erroneously lead BCs to implement and measure only environmental practices while ignoring those practices that allow to make business processes socially sustainable.

The analysis of the adoption of sustainable practices by BCs belonging to different ATECO macro sectors reveals that some practices are transversal as they are adopted by BCs that operate in almost all the considered ATECO macro sectors; for example, the environmental practice "substitute conventional

energy with energy (electricity and gas) produced from renewable sources and from certified suppliers with guarantee of origin (GO)" is adopted by BCs that operate in all ATECO macro sectors; similarly, the social practices "introduce smartworking", "collect employees' feedbacks (on the company climate, level of satisfaction) through internal surveys or other tools", "pursue gender equality in hiring", "provide employees with professional training" are transversal to BCs that operate in the different ATECO macro sectors. Obviously, some identified sustainable practices can be implemented only by BCs that operate in particular macro sectors (for instance, the environmental practices "install timers for switching on/off machinery", "purify the wastewater from the production process and reintroduce the purified water into the environment or into the production process", "create rechargeable products" can be implemented only by BCs that operate in the ATECO macro sector C, namely manufacturing companies). A deeper analysis to detect sustainable practices specifically referred to different productive sectors is needed.

All sustainable practices described in the two academic contributions that analysed practices that BCs implement to achieve their sustainability goals (Cetindamar, 2015; Wilburn et al., 2019), have been also identified in this analysis conducted on Italian BCs. Also, the conducted analysis has identified additional sustainable practices that BCs implement to achieve their sustainability goals.

RQ1.2 - How do benefit corporations measure their impact in terms of environmental and social performance of their business processes?

The content analysis of BC's sustainability reporting documents reveals that the majority of BCs included in the sample (144 out of 239) published sustainability reporting documents which include indicators to measure the sustainability performance of business processes. BCs that publish sustainability reporting documents with a qualitative approach are also included in the sample.

As to the impact assessment method that BCs adopt to conduct the impact assessment, the analysis demonstrates that 104 BCs (equal to 43.5% of the BCs included in the sample) do not adopt any method to assess their impact. Among BCs that declare to refer to an impact assessment method to measure their sustainability performance, 85 BCs adopt the B Impact Assessment (BIA) (B Lab, 2023c), a method that helps companies to measure their impact on five dimensions (governance, environment, customer, workers, community); the method is based on a digital survey and the achievement of a minimum score of 80 points is the first step for obtaining the BCORP certification. The BIA standard is adopted transversally by BCs in all macro sectors with a prevalence of companies in the macro sector M (professional, scientific and technical activities). Such a result confirms the results already obtained by some scholars that conducted empirically studies on American BCs (Cetindamar, 2018) and in the Italian context (Mion, 2020). Both these scholars, indeed, empirically demonstrated that the BIA is the most adopted impact assessment method by BCs.

It is worth to note that, among BCs included in the sample that are also certified BCORP (87 BCs), 26 BCs do not adopt any method for the impact assessment, and 43 BCs declare to apply the BIA standard to measure and report their sustainability performance. This implies that also BCs that do not adopt BIA obtain the BCORP certification; additionally, in the analysed sample there are BCs that are not certified BCORP but adopt the BIA method to measure and report their sustainability performance.

A limited number of BCs included in the sample (24 BCs) declare to adopt the SDG Action Manager as referring method for the impact assessment and the reporting of sustainability performance. The SDG Action Manager is a self-assessment tool recently introduced (launched in 2020) by B Lab and the United

Nations Global Compact that allows companies to plan, implement, and measure their activities for the achievement of the UN's Sustainable Development Goals (SDGs) and to measure their performance in terms of the achievement of SDGs (B Lab, 2023c).

As to sustainability reporting standard, 55 BCs out of 239 BCs included in the sample declare to prepare the sustainability reporting documents (both in the case of impact reports and in the case of sustainability reports) in accordance with GRI standards, the most widely sustainability reporting standard that allows companies to quantify, measure and communicate the economic, social, and environmental impact of their activities (GRI, 2023). As to the reporting approach, only 72 out of 239 BCs (equal to 30%) declare to make a materiality analysis to compile the sustainability document. In all the considered macro sectors, a predominance of BCs that do not perform a materiality analysis is highlighted.

The KPIs adopted by BCs to measure environmental and social performance have been also retrieved. Table 4.10, 4.11 and 4.12 lists the KPIs associated to each sustainable practice, if any. The collected KPIs allow to quantitatively measure the environmental and social impact of the implemented sustainable practices. For instance, the KPI "number of ecological vehicles adopted" allows to quantify the achieved environmental impact with the implementation of the practice "substitute traditional company vehicles with ecological vehicles (electric, hybrid or at least Euro6)"; however, in many cases, BCs report the absolute number of ecological vehicles they have, without quantify the environmental impact in relative terms (e.g., by providing the per cent of company's ecological vehicles); the adoption of relative indicators would allow the comparison of environmental impacts achieved by two (or more) BCs which, by now, is not always possible.

A similar consideration can be made for KPIs measuring the impact of some practices aimed to employees. Among these, the impact of the practice "provide vouchers and discounts for supermarkets, shops, restaurants, gyms, fuel, other leisure and cultural activities" is generally measured by reporting the number of employees receiving the vouchers/discounts in absolute terms, so hampering an easy comparison with the social performance achieved by other BCs, for example, in the same macro sector. Definitively, although BCs adopt KPIs to measure the environmental and social impacts of their business processes, a shift from a reporting of KPIs in the only absolute terms to a reporting of KPIs in more relative terms is required to improve the comparability of the achieved impacts.

RQ1.3 - How do the environmental and social practices that benefit corporations implement evolve over time?

An analysis of the evolution over time of sustainable practices BCs adopt to achieve their sustainability goals has been also carried out. To that end, a sub sample of BCs that, in the considered period (from 2017 to 2021), published at least four sustainability documents was analysed. Tables from Table D1 to Table D26 in Appendix report details on the sustainable practices that the 26 BCs implement over time. A Boolean notation is adopted to specify if a practice is adopted in the year (1 indicates that the practice is implemented, 0 indicates that the practice is not implemented in the year).

The evolution over time of the environmental and social practices cannot be always significantly analysed as, in many cases, the analysed BCs do not uniformly report their environmental and social practices in the published sustainability documents. For instance, Chiesi Farmaceutici Spa, in 2021, published a more synthetic sustainability report with respect to those published in the previous years; similarly, Ayming Italia Srl, a company that operates in the macro sector M (professional, scientific and technical activities), in 2021, published a very short sustainability report with respect to those published

before; also, other companies (i.e., Sagelio Srl, Slow Food Promozione Srl and Omal Spa) present the same behaviour; this behaviour may be due to the 2021 pandemic situation which may have diverted companies' attention from sustainability reporting. More investigations on this aspect are therefore needed. Beyond the extraordinary situation related to pandemic that could have affected BCs' sustainability reporting, the fact that a BC in a year does not report a sustainable practice that has been reported in the previous years can signify that the company no longer implements such a practice or that such a practice is no longer reported in the sustainability reporting documents, maybe because it is no longer considered relevant. To more in-depth investigate how environmental and social practices evolve over time, the adoption of other qualitative approaches, such as interviews or surveys to be submitted to benefit corporations, is required.

Despite the non-uniformity in the sustainability disclosure over time, some considerations can be made on the basis of the number of the environmental and social practices implemented by BCs in each year considered in the analysis. For the sake of brevity, only the evolution over time of sustainable practices observed for BCs that operate in the macro sectors A (agriculture activities) and in the macro sector C (manufacturing) are here depicted through the graphs in Figure 4.14 and Figure 4.15.A similar trend can be observed for companies in the other macro sectors. Figure 4.14 shows the evolution over time of the environmental practices adopted over the years by BCs in terms of number of implemented practices; if, the year 2021 is not considered for those BCs (i.e., Chiesi Farmaceutici and Omal Spa) that in the 2021 published a very short version of sustainability documents, a growing number of adopted practices over the years is highlighted. This means that BCs tend to increase the number of practices through which they achieve environmental sustainability goals over time. A different trend can be observed in the evolution over time of social practices (Figure 4.15); the evolution over time of social practices follows a more constant trend as only two companies (Andriani Spa and Aboca Spa) always increase the number of implemented social practices over the years; all the other companies (Figure 4.15) have a constant or even a decreasing trend in the number of social practices adopted; for instance, Paradisi Srl presents a significant decreasing number of social practices implemented in the years 2020 and 2021 with respect to the number of social practices implemented until 2019 (when the trend was increasing). This decreasing trend in the adoption of social practices may be related to the pandemic situation that may have conducted BCs to reduce the implementation of some practices, for instance those that implies the interactions with external people.

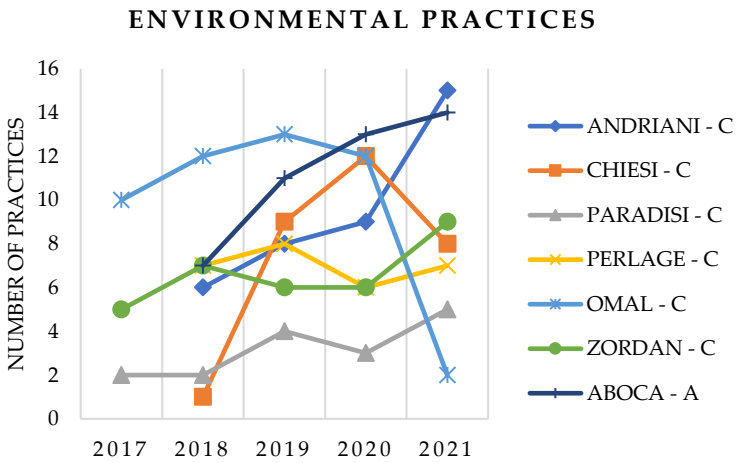

Figure 4.14. Evolution over time of environmental practices implemented by BCs in the macro sectors A and C

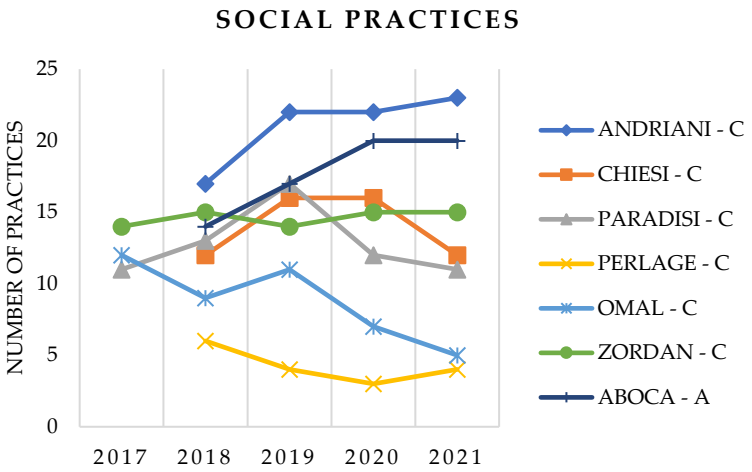

Figure 4.15. Evolution over time of social practices implemented by BCs in the macro sectors A and C

Some consideration can be made for those companies that transformed into benefit corporation and for which also sustainability reporting documents published before the transformation have been analysed. Seven BCs fall into this case: Andriani Spa (transformed into BC in 2020), Chiesi Farmaceutici (transformed into BC in 2019), Perlage Srl (transformed into BC in 201), Omal Spa (transformed into BC in 2021), ForGreen Spa (transformed into BC in 2019), Save the Duck Spa (transformed into BC in 2019), and Evolvere Spa (transformed into BC in 2019). By looking to the number of environmental and social practices adopted over the years by these companies, it can be noted that they already have adopted sustainable practices before transforming into a benefit corporation. Such a result, although based on not always complete data, confirms the results presented in the academic literature on benefit corporations by those scholars that, by surveying and interviewing non-native BCs, demonstrated that one of the main motivations for the transformation into a benefit corporation is the need to formalize the pre-existing orientation toward sustainability (Del Baldo, 2019; Nigri et al., 2020a; Marchini et al., 2023).

RQ1.4 - Can sustainability practices be traced back to process patterns?

As discussed in Section 1.3.5, a process pattern provides reusable and practice-based solutions to a problem. The practice-oriented feature of patterns implies that they are based on practices performed by organizations, and they are derived from a careful examination of such practices.

The sustainability practices performed by benefit corporations - that are companies that pursue economic purpose together with environmental and social purpose to create a positive impact on economy, society and environment - constitute a practical basis for the derivation of sustainable process patterns.

The sustainability practices identified through content analysis of BCs' sustainability documents have been analysed to determine problems they are able to address; the sustainability practices that provide solutions to the same problem have been reconducted to the same sustainable process pattern.

4.4.2 Sustainable process patterns

RQ: *What sustainable (green and social) process patterns may companies adopt to design and redesign their business processes to make them more sustainable so implementing a sustainable transformation? How are these patterns adopted in the time to achieve a sustainable transformation of business processes?*

A total number of thirty sustainable process patterns have been derived. As shown in Figure 4.16, the identified sustainability patterns have been classified into eight domains (i.e., governance, external relationships, facilities and buildings, human resources, resources and inputs, production and product, and value chain). Sustainable process pattern in green colour in Figure 4.16 are Green process patterns as they enable the pursuing of environmental sustainability; those in yellow colour are Social process patters as they refer to social dimension of sustainability; patterns coloured in light blue are hybrid patterns as they include practices to achieve both environmental and social sustainability; patterns in grey are refereed to governance domain and no sustainability dimension has been associated to these patterns.

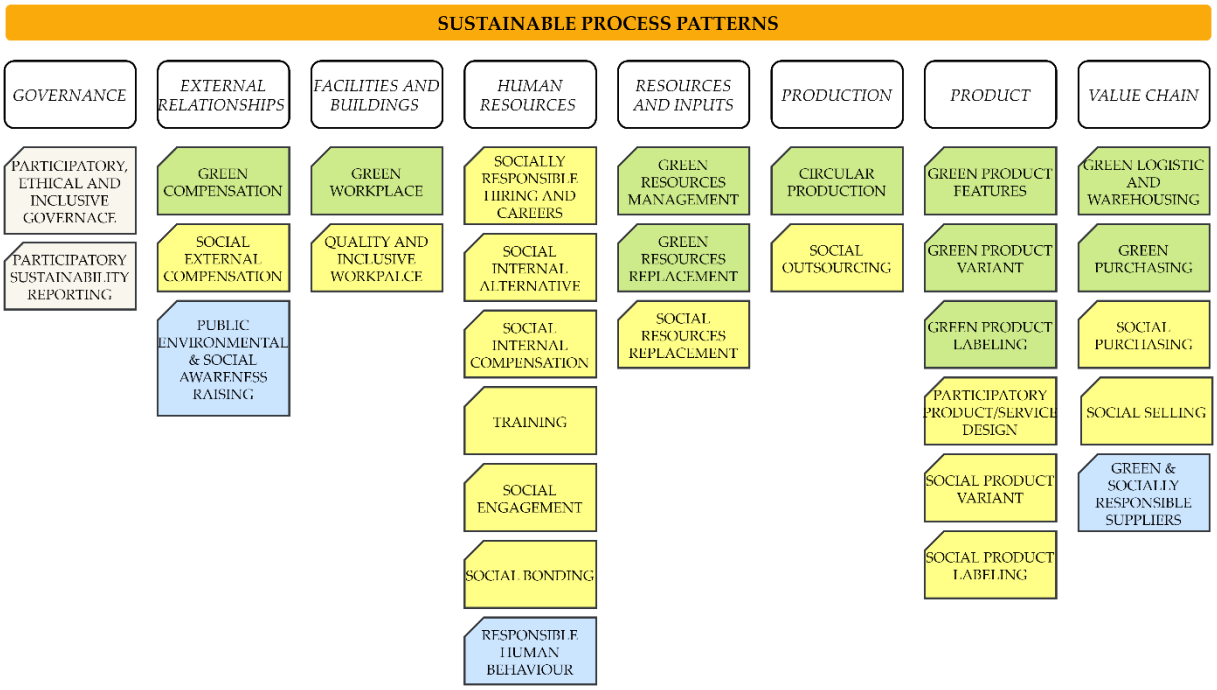

Figure 4.16. Sustainable process patterns

Sustainable process patterns have been described by adopting the attributes for describing process patterns presented in Section 1.5.3 (Table 1.2). The examples, i.e., the BCs that adopted each practice are reported in bracket with italic character.

To characterize the sustainable process patterns and the context in which each pattern is applicable the CATWOE, a tool that Checkland (1985) suggests to succinctly describe a problematic situation, has been adopted and adapted to properly describe patterns' context. The tool has been proposed within the Soft System Methodology (SSM), one of the best known soft operational research methods used to address complex problematic situations (Checkland, 1985). In the acronym CATWOE, C stands for customer (the person or organization to whom/which the output is delivered); A stand for actors (the persons that carry out the activities to deliver the output); T stands for transformation (an inputs that transform into an output); W stands for worldview (reasons why the transformation makes sense); O refers to the owner, i.e., the person/organization that has the power to terminate the transformation; E stands for environment and refers to the elements that characterize the transformation but are not under the owner's control.

To describe sustainable process patterns' context, the CATWOE has been adapted as follows: C refers to the stakeholders who benefit from the pattern' s solutions; A refers to the actors, i.e., the business

functions or roles responsible for the implementation of the pattern' s solutions; T is the sustainable transformation that the pattern allows to achieve when it is implemented; W refers to the motivation at the basis of the pattern' s adoption; O is the owner, and E refers to the external constraints and conditions that are difficult to modify that can influence the application of the pattern. In all sustainable patterns the owner is always the company owner as only the company owner can decide to implement the pattern or to terminate the adoption of a pattern; in all sustainable patterns the worldview is always the necessity to address and solve the problem (stated in the attribute problem for each pattern); so, the elements O and W are omitted in the description of sustainable process patterns' CATWOE.

List of sustainable process patterns

Table 4.13 and Table 4.14 present the sustainable process patterns in the domain governance. Table 4.15, Table 4.16 and Table 4.17 describe sustainable patterns in the domain external relationships. Table 4.18 and Table 4.19 describe the sustainable process patterns referred to the domain facilities and building. Table 4.20, Table 4.21, Table 4.22,Table 4.23, Table 4.24, Table 4.25, Table 4.26 present patterns in the domain human resources. Table 4.27, Table 4.28, and Table 4.29 refer to sustainability pattern in the domain resource and inputs. Table 4.30 and Table 4.31 presents patterns in the domain production.
Table 4.32, Table 4.33, Table 4.34, Table 4.35, Table 4.36, and Table 4.37 present pattern referred to product domain. Table 4.38, Table 4.39, Table 4.40, Table 4.41, and Table 4.42 present sustainable patterns in the domain value chain.
In the tables describing sustainable process patterns, the pattern name (the first raw of each table) is coloured in green, yellow, light blue or grey according to the dimension of sustainability to which each process pattern refers and, for each pattern an acronym has been defined: the acronym includes a first letter which refers to the pattern's domain, the second part of the acronym refers to the pattern name.

Table 4.13. Participatory, ethical and inclusive governance

PARTICIPATORY, ETHICAL AND INCLUSIVE GOVERNANCE	**G-PEIG**
PROBLEM	to achieve sustainability goals, company may not consider governance aspects, such as those aspects related to the distribution of roles, power and responsibilities in the company management as well as the involvement of stakeholders in the company management
CONTEXT	C: management, all stakeholders A: board of directors, company owner T: no responsible company governance → more responsible company governance E: owner sensibility
SOLUTION	to manage company in a more transparent, inclusive, and responsible manner, company may implement some practices to rearrange governance system
Practices	**KPI**
prepare ethical code [*Andriani spa, Way2Global srl, Bringme slr*]	-
involve stakeholders and collect stakeholders' feedback (sharing company results with stakeholders and collecting feedback and ideas for improving the company strategy or investments to be made, to identify stakeholders' needs and expectations) [*Antica Erboristeria, Andriani spa, GoodPoint srl, Tangible srl*]	-
establish a Whistleblowing system to monitor discrimination and detrimental behaviour of the human dignity by encouraging employees to anonymously report any violations, illicit, incorrect, discriminatory and harmful internal behaviour [*Assimoco spa, Save the Duck, Cariplo Factory srl, Cereal Docks spa*]	-
appoint an impact manager [*Ponti spa, Phacelia srl, Primate srl, Fastweb spa*]	-
promote female leadership [*Pettenon Cosmetics spa, Chiesi Farmaceutici spa, Kolinpharma spa*]	%women in managerial roles
involve stakeholders using social network platforms [*Yves Rocher srl, ReSolution Hub srl]*	-
create committee for gender equality, inclusion and diversity [*Chiesi Farmaceutici, Vector spa*]	-

PARTICIPATORY, ETHICAL AND INCLUSIVE GOVERNANCE	G-PEIG
adopt Holocracy type governance system (power distributed in defined roles related to a specific company objective, organization of roles in circles that bring together different roles and responsibilities, flattening of the organizational chart, empowerment and delegation of roles) [*DE-LAB srl, Way2Global srl*]	-
sign a document on the conflict of interest by the members of board [*Ayming Italia srl, Fastweb spa*]	-
create specific corporate division aimed at disseminating common well-being [*Nympha Lab*]	-
adopt a sociocratic governance system (based on distribution of power and responsibilities, equality of roles, teamwork and objective-based work) [*Mondora srl*]	-
rotate periodically senior resources in coordination roles [*Acube srl*]	-
guarantee the presence of representatives of other stakeholders (e.g., workers' representatives) who are not shareholders in the board of directors [*Operari srl*]	-

Table 4.14. Participatory sustainability reporting

PARTICIPATORY SUSTAINABILITY REPORTING	G-PSR
PROBLEM	in some cases, company may consider the sustainability reporting as a mere compilation exercise and not as an accountability process that allows company to assess their sustainability performance and improve their sustainability performance
CONTEXT	C: all stakeholders A: sustainability manager T: not participatory sustainability reporting process → more participatory sustainability reporting process E: time availability
SOLUTION	to implement a transparent and effective sustainability reporting process and be accountable for the achievement of sustainability goals, stakeholders have to be involved in the sustainability reporting process
Practices	**KPI**
map stakeholders and engage stakeholders (e.g., through virtual platforms, focus groups or interviews) to conduct a participatory materiality analysis and impact assessment [*Andriani spa, Paradisi srl, Poliste srl*]	-
collect stakeholders feedback on the sustainability reporting document [*Labomar spa, Tirelli*]	-

Table 4.15. Green compensation

GREEN COMPENSATION	ER-GC
PROBLEM	all business processes can have detrimental environmental impacts; even when business processes are hard to modify, their environmental impacts should be compensated
CONTEXT	C: environment, local community A: managers of all company's functions/processes T: environmental impact of business processes assessed → environmental impact of business processes compensated E: financial availability
SOLUTION	environmental compensation practices can be implemented to improve and compensate (part of) the environmental impact of business processes; the compensation practices do not reduce the negative effect of the processes but compensate them with positive effects on the society
Practices	**KPI**
Green Compensation - Preserve the ecosystem and the biodiversity	
compensate for CO_2 emissions through tree planting and reforestation works [*Davines spa; Jonix spa, Pasticceria Filippi srl, Perlage srl, GreenGo srl, Fileni spa, Garc Ambiente spa*]	number of trees planted/year
plant a tree for each employee (e.g., on the occasion of birthday) or for each new member of the company community [*Fitt spa, Labomar spa, Pasticceria Filippi srl, Ayming Italia srl*]	
compensate for CO_2 emissions deriving from internet use/access to the company website by planting trees [*Antica Erboristeria spa, Omal spa, DE-Lab srl, Oneclick srl*]	kg CO_2 compensated
compensate for paper consumption by planting trees [*Istituto Ganassini spa, Labomar spa*]	
compensate for products sold by planting trees (e.g., by planting a tree every time a certain quantity of products sold is reached; collecting of a quantity of plastic equivalent to the quantity of products sold; planting a tree for each new affiliated seller; planting a tree for each new contracted service/customer) [*Effe Diligence srl, Fedabo spa, Mazzini Lab srl, Sagelio srl*]	number of trees planted kg plastic collected

GREEN COMPENSATION	ER-GC
implement initiatives to promote the biodiversity of the area (planting trees of various species in the area, adopting beehives and placing hives in the area to encourage biodiversity) [*Damiano spa, Palm spa, Unifarco spa, Riva e Maraini spa, Avignonesi, NWG Energia spa]*	number of initiatives undertaken allocated budget (€)
Green Compensation - Support environmental protection associations	
collaborate with non-profit associations that work to protect the environment and biodiversity (e.g., associations that operate to reduce waste such as plastic, to protect the sea, that promote organic and sustainable agricultural practices) [*Ferrarelle spa, Labomar spa, Aboca spa, Nodoubt srl*]	number of collaborations undertaken
make donation to non-profit associations that work to protect the environment [*Green Evolution srl, Lato srl*]	donated amount (€)
donate % of revenues from sale to environmental protection associations [*Antica Erboristeria spa, Dermophisiologique srl, Davines spa*]	% sales revenue donated
Green Compensation - Purchase carbon credits and finance offset projects	
compensate for CO_2 emissions by purchasing carbon credits or financing carbon offset projects (which generate certified carbon credits) [*Arca Etichette spa, Piomboleghe spa, Ponti spa, Lifegate spa*]	number of funded projects kg CO_2 compensated
compensate for vehicles CO_2 emissions by purchasing climate-neutral fuel paper (managed by a third-party company which, based on fuel consumption, finance CO2 offset projects) [*Fitt spa, Tangible srl*]	kg CO_2 compensated
Green Compensation - Urban redevelopment	
realize landscape redevelopment of the territory [*Novamont spa, Ferrarelle spa, Stanhome spa*]	allocated budget (€)
realize environmental reclamation works to compensate for CO_2 emissions [*Levico Acque srl*]	kg CO_2 compensated allocated budget (€)

Table 4.16. Social external compensation

SOCIAL EXTERNAL COMPENSATION	ER-SEC
PROBLEM	all business processes have impact on the society in which company operates; even when business processes are hard to modify, their social impacts should be compensated
CONTEXT	C: local community; charities; developing countries; weaker groups of the population; citizens; young A: managers of all company's functions/processes T: social impact of business processes assessed → social impact of business processes compensated E: financial availability
SOLUTION	social compensation practices, aimed to external stakeholders, can be implemented to improve the social impact of business processes; the compensation practices do not reduce the negative effect of the processes but compensate them with positive effects on the society
Practices	**KPI**
Social External compensation - support charities, frail and disadvantage people, local community and developing countries	
collaborate and support (through donations) non-profit associations that operate to support disadvantaged categories (minors, migrants, homeless people, prisons, women victims of violence) or to support vulnerable people (disabled, elderly, people suffering from serious illnesses) [*Acquaviva spa, Box Marche spa, Outset srl, Pasticceria Filippi srl, Pragmetica srl*]	donated amount (€)
make a donation to hospitals and healthcare/rehabilitation facilities [*Alisea srl, Pergemine spa*]	
make a donation to support serious emergencies in the local or national territory (e.g., earthquakes, floods) [*De-Lab srl, Paradisi srl*]	
sell charities' products among employees and donate the amount raised to the charities [*Fitt spa*]	
involve employees in volunteering activities (e.g., in the support of the elderly, the poor, the vulnerable, in tree planting activities, plastic collection and cleaning of the area, blood donation) also through collaboration with non-profit organizations [*Danone spa, Davines spa, Jonix spa, Lam Consulting spa, Garc Ambiente spa*]	number of employees involved hours of volunteering carried out
provide pro-bono services (e.g., aimed at NGOs or local charities) [*ARB spa, Cariplo Factory srl, Pogesto srl, Way2Global srl*]	hours of services provided

SOCIAL EXTERNAL COMPENSATION	ER-SEC
donate products (e.g., unsold food products or production surpluses, or processing scraps, or medicines to the community (schools, local charities and associations, schools) [*Fratelli Carli srl, Ponti spa, Aboca spa*]	quantity of products donated
donate PCs (even used in the office) to local charities [*Tangible srl, Way2Global srl*]	
donate unsold products close to expiration or production surpluses to the food bank or other charities [*Danone spa, Pasticceria Filippi srl*]	
donate food and essentials to the food bank [*Pmg Italia srl*]	
donate products during charity events [*Domori spa*]	
donate toys to hospitals [*Andriani spa*]	
implement and finance urban redevelopment interventions in the municipality in which the company operates, restoration of works of art with historical or social interest (e.g., schools) [*Paradisi srl, Perlage srl, Maccarese spa, Plusvalue Italy srl, Almo Nature spa*]	allocated budget (€)
establish a fund to support micro entrepreneurship in Africa [*Fit srl*]	
donate revenues (or % of them) deriving from the sale of a particular product line to finance non-profit associations and charities (including those for the protection of animals) / donate revenues (or % of them) deriving from a certain number of shopping days (e.g. Black Friday) to finance associations and charities/ donate revenues (or % of them) deriving from the sale of products to finance social initiatives (e.g. construction of wells and water purification plants in water-critical areas, financing of scholarships in Africa) [*Davines spa, Korff srl, Acqua dell' Elba srl*]	% sales revenue donated
implement initiatives to support developing countries (e.g., construction of schools, health facilities, infrastructure to make drinking water accessible) through collaboration with non-profit associations that operate to support the populations of developing countries [*Alsa Lab srl, Korff srl, Wami srl*]	number of initiatives undertaken allocated budget (€)
activate technical/professional training courses for fragile and disadvantaged people (disabled, unemployed, migrants and refugees) aimed at job placement and job accompaniment [*Etifix srl, Ferrarelle spa, Izmade srl*]	number of training courses activated number of citizens involved
make Christmas gifts to employees from charities [*Fratelli Carli srl, ForGreen spa*]	% Christmas gifts from charities
make the company's spaces available to organize events for third sector associations [*Effe Dilignece srl, Bibendum Group srl*]	-
donate part of the profits to non-profit organizations and associations *[LookAround srl, Hospitality teams srl]*	% profits donated
establish a foundation linked to the company which carries out philanthropic activities [*Fileni spa*]	-
compensate employees' water footprint by donating water to areas where families do not have access to drinking water [*Pettenon Cosmetics spa*]	quantity of donated water
Social External Compensation - young's skills and knowledge development	
collaborate with universities to produce degree theses and/or training internships [*Alisea srl, Damiano spa, Andriani spa*]	number of degree theses completed number of internships activated
activate school-work alternation courses and training internships [*Ponti spa, Omal spa, Zordan srl, Fastweb spa*]	number of internships/school-work alternation paths activated number of students involved
activate training courses for citizens/young people living in the area to encourage the acquisition of particular skills (e.g., linguistic skills, digital skills, correct use of the web, coding, entrepreneurship, other technical and professional skills) also in collaboration with schools and training institutions) [*Cereal Dock spa, Novamont spa, Mondora srl*]	number of courses activated number of citizens involved
activate partnerships with universities to finance university degree and master's degrees [*Labormar spa, ADL consulting srl, Novamont spa*]	allocated budget (€)

SOCIAL EXTERNAL COMPENSATION	ER-SEC
provide scholarships to local students [*Alisea srl, Fastweb spa, Fileni spa*]	allocated budget (€) number of students involved"
donate books and/or materials to schools [*Acqua dell'Elba srl, Outset srl*]	quantity of products donated
provide mentorship service for innovative start-up or support for innovative start-up through prizes [*Labomar spa, Davines spa*]	number of businesses supported
Social External compensation - support local typical activities, sport and culture	
support (through donations or sponsorships) local cultural initiatives (e.g., literary prizes, theatre companies, village festivals) [*Cereal Dock spa, Labomar spa, Aboca spa*]	allocated budget (€)
support (through donations or sponsorship) local sport associations [*Alsa lab spa, Zordan srl*]	
support for typical local activities (e.g., companies that produce food and wine products or other typical local agricultural products) through the purchase of products (e.g., to create Christmas gifts) or directly by employees [*Mondora srl, Vantea Smart spa*]	
organize cultural events (e.g., exhibitions, book presentations) [*Aboca spa, Bibendum Group srl*]	allocated budget (€) number of funded initiatives"
donate reusable water bottles to children of sport centres [*Labomar spa, Omal spa*]	-
Social External Compensation - public health promotion	
promote the adoption of healthy and correct lifestyles (through nutrition education in the schools, launch of contests, participation/organization of events, launch of communication campaigns, publication of books) [*Danone spa, Florim Ceramiche, Labomar spa, Greenapes srl*]	number of training courses activated number of activities undertaken number of citizens involved
organize first aid courses open to the community [*Pasticceria Filippi srl*]	
activate psychological counselling open to the community [*Cereal Dock srl*]	invested amount (€) number of citizens involved
donate defibrillator to the community [*Uomo e Ambiente srl*]	quantity of products donated
Social External Compensation - academic research support	
collaborate and finance universities/research institutions to carry out research projects [*Fratelli Carli spa, Chiesi Farmaceutici spa*]	invested amount (€)

Table 4.17. Public environmental and social awareness raising

PUBLIC ENVIRONMENTAL & SOCIAL AWARENESS RAISING		ER-PE&SAR
PROBLEM	company has a role in the society in which it operates in terms of citizens' awareness raising; this role should be manged in responsible manner	
CONTEXT	C: society, citizens, local community A: sustainability manager T: public environmental and social awareness raising planned → public environmental and social awareness raising achieved E: financial availability, time availability, managers' sensitivity	
SOLUTION	public environmental/social awareness raising practices imply the fulfilment of initiatives to improve the public awareness on the topic of sustainability (environmental and social) issues; the addition of this practices modifies the process of external relationships management and make the process more sustainable	
Practices		**KPI**
participate in conferences, lectures and workshops (at universities or schools or public events) to explain and disseminate the sustainable business model or the BCORP and benefit corporation model to generate and increase awareness among citizens and consumers regarding sustainable business [*Alisea srl, Box Marche spa, Andriani spa, Zordan srl, Nativa srl, Sagelio srl*]		number of initiatives undertaken number of people involved/reached by the initiatives
establish challenges/contests/hackathons/social challenges open to the community to raise citizens' awareness of environmental issues (e.g., climate change, challenges for plastic collection		

PUBLIC ENVIRONMENTAL & SOCIAL AWARENESS RAISING	ER-PE&SAR
and land cleaning, reduction of the environmental impacts of behaviours, challenge to encourage the adoption of ethically and environmentally sustainable behaviors and purchases) [*Davines spa, Labomar spa, ForGreen spa, Onde Alte srl*]	
raise citizens' awareness of environmental issues and climate change through participation/organisation of dedicated public events, meetings and debates on the topic [*Ayming Italia srl, Spazio Noprofit srl, PMG Italia spa*]	
raise citizens' awareness on recycling and separate waste collection through dedicated initiatives (e.g., by providing recycled products at public events) [*Arbos srl, Box Marche spa*]	
raise citizens' awareness of environmental issues and climate change through the organization of particular initiatives (e.g., floral installations in the square on the topic of bees highly threatened by climate change, organization of days dedicated to the topic of climate change, participation in Earth Day) [*Perlage srl, Greenapes srl*]	
activate training courses (both in schools and aimed at the community) on environmental sustainability issues (e.g., energy management, waste recycling and differentiation, environmental education) [*Andriani spa, Hidra srl, Ricehouese srl*]	number of courses activated number of citizens involved
establish an award for degree theses that propose innovative solutions to combat climate change or that focus on the theme of sustainability [*Aequilibria srl, Save the Duck spa*]	allocated budget (€) number of degree thesis awarded
establish an award aimed at local businesses that have distinguished themselves for environmental sustainability and the protection of the territory [*Maccarese spa, Ayming Italia srl]*	allocated budget (€) number of participating companies
open of the production plant to school visits [*Arbos srl, Novamont spa, Euro Company srl*]	number of students involved
open of the production plant to visits by citizens [*Arbos srl, Cereal Dock spa, Florim Ceramiche spa*]	number of citizens involved

Table 4.18. Green workplace

GREEN WORKPLACE		FB - GW
PROBLEM	all buildings, offices and production plants produce negative environmental impacts that should be reduced and mitigated	
CONTEXT	C: environment A: facilities managers T: environmental impact of building/workplace assessed → environmental impact of building/workplace reduced E: financial availability	
SOLUTION	green building practices implies the introduction of systems and/or the adoption of adequate tools and technologies to reduce the environmental impacts of business processes that are fulfilled in the buildings, offices and production plants	
Practices		**KPI**
dispose wastes correctly (by installing containers for separate waste collection) [*Zordan srl, Ponti spa, Interconsulting srl, Assimoco spa, Danone spa*]		number of containers for separate waste collection installed kg separated waste
install a photovoltaic system [*Damiano spa, Ferrarelle spa, Box Marche spa, Andriani spa, Zordan srl, Fileni spa, Vector spa, Leotron srl*]		installed power (KW) m2 panels installed CO_2 eq saved % energy produced by photovoltaic system % energy requirement covered by the system)
achieve buildings' energy efficiency (through the installation of windows with lower thermal transmissibility, insulated panels, replacement of gas boilers with heat pumps, replacement of heating/cooling systems with more energy efficient ones, relamping or replacement of incandescent lights with LED lights) [*Arca Etichette spa, Andriani spa, Aboca spa*]		KW of energy saved kg CO_2 not released/saved

GREEN WORKPLACE	FB - GW
install charging stations for electric vehicles [*Florim Ceramiche spa, Outset srl, Aboca spa*]	number of charging points installed
use only ecological and natural products and multipurpose rags to clean spaces [Outset srl, Progesto srl, Aton spa]	-
realize green areas in the company headquarters and place green plants in the offices [Andriani spa, Zordan srl, ARB spa]	m^2 green areas realized
redevelop buildings through the use of eco-sustainable materials (e.g. eco-sustainable paints, photocatalytic paints, furnishings made of eco-sustainable materials such as wood, seat fabrics made from recycled materials, soundproof floors; office furniture made with recycled and eco-compatible materials) [*Andriani spa, Chiesi Farmaceutici spa, Progesto srl*]	-
obtain LEED (Leadership in Energy and Environmental Design) certification for buildings and production plants/offices [*Antica Erboristeria spa, Davines spa*]	-
achieve buildings' energy efficiency by installing an energy consumption monitoring system [*Way2Global srl, ICEL spa, Assimoco spa*]	-
monitor buildings' greenhouse gas emissions (through dedicated software installation) [*Cereal Dock spa, ICEL spa*]	-
use electric tools and/or eco-sustainable products for greenery maintenance [Tecnosystemi spa]	-
establish company headquarters in a building built according to energy saving criteria [*Greenapes srl*]	-
install indoor pollutant detection sensors in offices [*Evolvere spa*]	-
install trigeneration system for self-production of electrical, thermal and cooling energy [*Andriani spa*]	energy produced (KW)

Table 4.19. Quality and inclusive workplace

QUALITY AND INCLUSIVE WORKPLACE		FB - GW
PROBLEM	all buildings, offices and production plants may have negative social impacts in terms of quality and inclusiveness of the workplace in which business processes are fulfilled that should be improved and mitigated	
CONTEXT	C: workers A: facilities manager T: social impact of building/workplace assessed → social impact of building/workplace improved E: financial availability, managers' sensitivity	
SOLUTION	quality and inclusive workplace practices imply the adoption of arrangements to improve the quality of the workplace and make it more inclusive in terms of consideration of human-specific needs and different sensitivity in order to allows all people to fulfil their work in an inclusive and quality workplace	
Practices		**KPI**
provide free canteen service [*Korff srl, Andriani spa, Omal spa*]		-
set up kitchen space for employees who spend their lunch break in the company [*Zordan srl, Acube srl, ArtAttack Group srl*]		-
use inclusive language (e.g., through illustrations that portray people without distinction of gender, ethnicity and any possible diversity, publishing content with subtitles or lis language) among employees [*Nodoubt srl, Fastweb spa*]		-
organize open space workplaces to facilitate interaction between employees and teamwork [*Andriani spa, Fit srl, Spazionoprofit srl*]		-
create a pet friendly office [*Sottosopra sas, Uomo e Ambiente srl*]		-
eliminate architectural barriers to make offices/buildings accessible to all [*Acube srl*]		-
adopt genderless bathrooms [*ArtAttack Group srl*]		-
install works of art in the offices and common areas [*Fit srl]*		-
organize failure party (celebration of failures that an employee may encounter) [*Mondora srl*]		-
implement alias professional career for trans people [*Ferrarelle spa*]		-
provide APP for menu booking with nutritional and allergy information on dishes [*Consortium for Genomic Technologies srl*]		-

Table 4.20. Socially responsible hiring and careers

SOCIALLY RESPONSIBLE HIRING AND CAREERS	**HR - RHC**
PROBLEM	when the hiring process and the employees' careers are manged with little attention paid to some social values (such as inclusivity, gender equality, privacy) the company may be not able to attire talents
CONTEXT	C: employees A: HR managers T: not socially sustainable hiring and careers → more socially sustainable hiring and careers E: managers' sensitivity
SOLUTION	socially responsible hiring and careers practices imply the adoption of arrangements that modify the way of managing the hiring process and make it and the employees' careers more socially sustainable
Practices	**KPI**
pursue gender equality in hiring [*Acqua dell'Elba srl, Fratelli Carli spa, Operari srl*]	% female employees
hire permanent employees [Korff srl, Fratelli Carli spa, Save the Duck spa, Evolvere spa]	% employees with permanent contracts
pursue gender equality in wages [*Ponti spa, ARB spa, Primate srl, Endelea srl*]	male/female pay gap gross annual salary ratio man/woman
introduce onboarding programs for new employees [*Alessi spa, Antica Erboristeria spa, Good Point srl*]	number of employees involved
hire workers from disadvantaged categories (ex-prisoners, refugees, immigrants, people with disabilities or unemployed women over 50) [*Rigeneriamo srl, Box Marche spa, Ponti spa*]	number of workers from disadvantaged categories hired
hire young people [*Acquainbrick srl, Alessi spa, Paradisi srl*]	number of workers under 30 hired
hire workers from the area in which the company operates [*Andriani spa, Aboca spa, ARB spa*]	% of new hires in the year from the local area % employees coming from the local area
promote an inclusive recruitment (including a message in job adverts affirming your commitment to diversity, equity and inclusion) [*Up2you srl, Kolinpharlma spa*]	-
assign an impact project to each newly hired worker (linked to each individual's sensitivity and possibilities, e.g., waste collection, digital literacy projects) to be carried out, measured and reported [*Mondora srl*]	-
recruit and hire young employees who are sensitive to environmental issues, social responsibility and inclusiveness [*Nativa srl*]	-
valorise internal skills (internal search for the skills needed before carrying out external personnel searches) [*Tecnosystemi spa, Ponti spa*]	-
promote salary transparency (internal salary sharing) [*Mondora srl*]	-

Table 4.21. Social internal alternative

SOCIAL INTERNAL ALTERNATIVE	**HR - SIA**
PROBLEM	the employees' performance may be affected by a not adequate management of working time which challenges the balance of working and private life
CONTEXT	C: employees A: HR manager T: employees work life balance not adequately managed → employees work life balance improved E: type of job carried out
SOLUTION	social internal alternative practices imply the introduction of an additional process alternative or path that employees may choose to adopt without change the core process of employees' management
Practices	**KPI**
introduce smart working [*Alessi spa, Andriani spa, Davines spa, Hidra srl, Poliste srl, Doorway srl, Mondora srl, Oneclick srl*]	% hours worked in smart working
introduce flexible working hours (flexible entry/exit times, 7-hours working day, light Friday, afternoon free, part-time hours) [*Damiano spa, Labomar spa, Onde Alte srl, Bringme srl*]	number of workers taking advantage of flexible working hours

Table 4.22 Social internal compensation

SOCIAL INTERNAL COMPENSATION	**HR - SIC**
PROBLEM	employee's management process may have negative social impacts; even when the employees' management process is hard to modify, its impact should be compensated, without changing the core structure of the process
CONTEXT	C: employees A: HR managers T: social impact of employees' management process assessed → social impact of employees' management process compensated/improved E: financial availability
SOLUTION	social internal compensation practices improve and compensate (part of) the negative social impact of the management of employees; the compensation practices do not eliminate the negative effect of the process but compensate them with positive effects on the employees
Practices	**KPI**
Social Internal Compensation - additional benefit/bonuses	
provide vouchers and discounts for supermarkets, shops, restaurants, gyms, fuel, other leisure and cultural activities (travel, cinema, theatres, wellness centres, purchasing books) and other services [*Ambro sol srl, Fitt spa, Fratelli Carli spa, Palm spa, Nodoubt srl, Euro Company srl, Assimoco spa*]	number of employees receiving the vouchers/discounts number of agreements with other companies activated
provide bonuses/prizes on employee pay (often linked to the achievement of objectives) [*Alessi spa, Pasticceria Filippi srl, Piomboleghe srl, Nativa srl, Stanhome spa, Emsibeth spa*]	average amount paid per employee allocated budget to bonuses number of employees receiving the bonuses
provide meal vouchers [*Acube srl, Cariplo Factory srl, Ayming Italia srl, Fastweb srl*]	value of vouchers provided
provide Christmas gifts to employees (in money, in products from local charities or local gastronomic businesses, or cultural gifts such as tickets for cultural events) [*Palm spa*]	number of employees receiving Christmas gifts allocated budget
set up an online platform to provide welfare tools [*Fitt spa, Fratelli Carli spa, Bizaway srl*]	
guarantee employees' technological equality (by providing cash bonuses for the purchase of equipment, furniture and software to work from home) [*Korff srl, Andriani spa, Nodoubt srl*]	allocated budget (€) number of employees receiving bonuses
provide cash bonuses and/or leave on the occasion of employees' weddings or civil unions [*Domori spa, Florim Ceramiche spa, Aboca spa*]	
provide bonuses to cover expenses for employees who study at university [Mondora srl]	
provide employees with a card to recharge their electric vehicle for free at affiliated charging stations or at home at a reduced price [*Fastweb spa*]	
allow employees to purchase company products/services or company shares at discounted prices [*Danone spa, Florim Ceramiche spa*]	-
provide salary advances, TFR and/or the 14th month's salary [*Fastweb spa, NWG spa*]	number of employees receiving the disbursements
reimburse employees for their own transport costs [*Avignonesi srl*]	allocated budget (€) number of employees receiving reimbursements
distribute share of profits to employees [*Illy caffè spa*]	number of employees receiving share of profit
Social Internal Compensation - health promotion	
activate supplementary pension, insurance (e.g., life insurance) and/or health insurance (which covers medical expenses incurred by employees) [*Alsa Lab srl, Fitt spa, Apoteca Natura spa*]	number of employees covered allocated budget (€)
provide health services to employees (e.g., 24-hour medical assistance, physiotherapy service, nutritional and psychological consultancy) [*Novamont spa, Ponti spa, Up2you srl, Fastweb spa, Assimoco spa*]	allocated budget (€) number of services provided

SOCIAL INTERNAL COMPENSATION	HR - SIC
	number of employees who use the services
activate disease screening programs for employees (through agreements with non-profit associations, blood donors, or with hospitals and analysis laboratories to allow employees and, in some cases, family members, to benefit from free screening) [*Florim Ceramiche spa, Fratelli Carli spa, Vantea Smart spa, Fileni Alimentare spa*]	number of agreements with healthcare facilities activated number of employees who use the services
reimburse of health expenses incurred by employees [*Palm spa, Pasticceria Filippi srl, Tecnostile Contract srl*]	allocated budget (€) number of employees receiving reimbursements
supply free covid PPE and covid screening to employees [*Florim Ceramiche spa, ICEL spa*]	allocated budget (€)
communicate to employees the risks associated with smoking through dedicated campaigns [*Andriani spa, Chiesi Farmaceutici spa*]	-
provide free flu vaccines to employees [*Arca Etichette spa, Florim Ceramiche spa*]	allocated budget (€) number of employees who use the services
install defibrillator in workplaces [*Florim Ceramiche spa*]	-
introduce healthier, low-impact company canteen menus [*ICMA srl*]	-
Social Internal Compensation - family support	
introduce leaves, paid time off and reduced working hours for employees with children (e.g., new parents, parents with children up to 6/7 years old, baby week) [*Box Marche spa, Danone spa, Fitt spa, Way2Global srl, Doxee spa*]	days of paid leave/leave available for each employee number of beneficiary employees
provide services for employees' children (e.g., scholarships, summer camps for children, scholastic support for children such as mathematics enhancement courses, homework help, remedial courses, consultancy for children with learning disabilities, support in preparation for university tests, job orientation consultancy, activation of theatre and artistic workshops) [*Box Marche spa, Andriani spa, Chiesi Farmaceutici spa, Fastweb spa*]	allocated budget (€) number of employees who use the services
provide contributions and vouchers for the purchase of children's products, or for babysitting services, or for the payment of nursery school and summer camp fees, contributions or reimbursements for children's education expenses [*Fratelli Carli spa, Paradisi srl, Assimoco spa*]	allocated budget (€)
provide baby bonuses (in case of maternity and paternity of employees) [*Danone spa, Levico Acque srl, Omal spa, Acquaviva spa*]	number of employees receiving bonuses
support financially employees who find themselves in difficult (for personal and/or family issues) [*Fitt spa, Damiano spa*]	allocated budget (€) number of beneficiary employees
provide counselling and psychological support to new parents [*Danone spa, Chiesi Farmaceutici spa*]	
introduce slow working when female employees return from maternity leave [*Way2Global srl, GoodPoint srl*]	
provide services to support employees who are also caregivers of non-self-sufficient people (e.g., by providing the caregiver employee with support from specialized operators who listen to their needs and offer the most appropriate assistance services such as research carer, RSA facilities, disabled transport services) [*Fastweb spa*]	number of beneficiary employees
provide additional leave in case of serious illness of children/family members [*Ponti spa*]	
provide leave for extended periods for foreign (non-EU) workers to encourage reconciliation with family members [*Fitt spa*]	
Social Internal Compensation - additional services	
activate company gym and wellness areas [*Labomar spa, Andriani spa, Way2Global srl*]	
activate free tax consultancy/assistance service for employees [*Florim Ceramiche spa, Fastweb spa, Pasticceria Filippi srl*]	allocated budget (€)

SOCIAL INTERNAL COMPENSATION	HR - SIC
provide microcredit for employees [*Ecor Natura sì srl*]	number of employees who use the services
activate company library with free access for employees [*Out of srl, Palm spa, Omal spa*]	-
provide time-saving services for employees (possibility for employees to receive groceries or medicines in the company, laundry service with collection and return in the company, car washing service in the company, ironing service) [*Fedabo spa, Way2Global srl*]	number of employees who use the services
organize meditation courses for employees [*Mondora srl*]	

Table 4.23. Training

TRAINING		HR - T
PROBLEM	employees may have not adequately level of skills, both professional and transversal skills, to appropriately fulfil their tasks and participate in business processes as well as to manage situations outside the company; also, company that does not provide training to advance employees' skills and knowledge may be not able to attire talents	
CONTEXT	C: employees A: HR managers T: employees not adequately trained → employee's skills and knowledge improved E: financial availability, time availability	
SOLUTION	training practices provide with employee's skills and knowledge to make them able to properly fulfil their tasks in the business processes as well as to adequately deal with situations outside the company; the addition of training activities modifies the employees' management process and make it more socially sustainable	
Practices		**KPI**
provide employees with professional training [*Davines spa, Damiano spa, Florim Ceramiche spa, Fitt spa, Ponti spa, Omal spa, Maccarese spa, Green Evolution srl, Hidra srl, Aton spa*]		
provide employees with transversal training (sustainability, CSR, circular economy, biodiversity, benefit corporation and bcorp system) [*Alsa lab spa, Antica Erboristeria spa, Braida srl, Newmi srl, Up2you srl, Nativa srl, Save NGR srl*]		
provide employees with transversal training (soft skills including public speaking, effective communication, time and stress management) [*Fratelli Carli spa, Labomar spa, Levico Acque spa, Hospitality Team srl*]		
provide employees with transversal training (e.g., philosophy workshops, first aid courses, courses for caregivers, courses on complementary pensions and conscious management of savings, or other unspecified transversal skills) [*Pasticceria Filippi srl, Effe Dilignece srl, ARB spa*]		hours of training provided
provide employees with transversal training (English and foreign languages) [*Alessi spa, Labomar spa, Andriani spa, Tangible srl*]		average hours of training received by each employee
provide employees with transversal training (skills on project management, leadership and change management, problem solving, negotiation) [*Davines spa, Pettenon Cosmetic spa, Fratelli Carli spa, Omal spa, Aton spa*]		% of employees who received training
provide employees with transversal training (digital knowledge e.g., digital skills, cybersecurity) [*Fitt spa, Florim Ceramiche spa, Andriani spa, Crabiz spa*]		allocated budget (€)
provide employees with transversal training (courses on female empowerment, gender identity, education and prevention of feminicide and violence against women, prejudices, stereotypes, diversity and inclusiveness and equity) [*Danone spa, Andriani spa, Cariplo Factory srl, Assimoco spa*]		
provide employees with transversal training (courses on generation gap, parent-child relationship and conflict, emotional intelligence) [*Chiesi Farmaceutici spa, Fastweb spa]*		
provide employees with transversal training (knowledge on healthy lifestyle and correct diet) [*Chiesi Farmaceutici spa, Ayming Italia srl*]		
provide employees training by developing skills externally (through participation in courses, conferences or online courses) [*SEAY srl, Zordan srl*]		-
set up corporate academy and/or learning platforms [*Fitt spa, Cereal Dock spa, Panino Giusto spa*]		-
provide online professional training courses to reduce the environmental impact of travel [*Pergemine spa*]		-

Table 4.24. Social engagement

SOCIAL ENGAGEMENT	**HR - SE**
PROBLEM	employees may be not engaged properly in the company's management and this lack of involvement may affect their performance
CONTEXT	C: employees A: HR manager T: employees not adequately engaged in the company management → employees more engaged in in the company management E: managers' sensitivity, time availability, financial availability
SOLUTION	social engagement practices imply the adoption of arrangements to better involve employees in the management of company; the addition of these activities modifies the employees' management process and make it more socially sustainable
Practices	**KPI**
collect employees' feedback (on the company climate, level of satisfaction) through internal surveys or other tools (dedicated email address, boxes placed in common areas, dedicated section in the company APP, HR function dedicated to listening employees) [*Aboca spa, Box Marche spa, Labomar spa, Andriani spa, Zordan srl, Intexo srl, Operari srl*]	number of employees involved
organize moments of discussion between employees and company managers to share work or personal issues and problems, to provide suggestions, to provide feedback on the employees' performance and to identify improvements [*Cereal Dock spa, Novamont spa, Unifarco spa, Progesto srl*]	number of employees involved
communicate towards employees on corporate values and the results obtained by the company (e.g., through periodic meetings, newsletters, signage, noticeboards, digital screens, company magazines) [*Cereal Dock spa, Ferrarelle spa, Outset srl, Intexo srl, Andriani spa*]	number of periodic meetings held/year number of newsletters sent/year
communicate the environmental and social sustainability practices implemented through the company website or newsletter sent to employees [*Tecnosystemi spa, Paolini srl, Reti srl*]	number of newsletters sent/year
involve employees in the company decision making [*Mondora srl, Plastic Free srl, Next Social Commerce srl]*	number of employees involved
introduce reverse mentoring [*Chiesi Farmaceutici spa, Way2Global srl*]	number of implemented initiatives
create a corporate APP to encourage the engagement of the corporate community [*Aboca spa*]	-

Table 4.25. Social bonding

SOCIAL BONDING	**HR - SB**
PROBLEM	employees establish relationships in the workplace that might be weak and that should be enforced to make them more socially sustainable and improve employees' performance
CONTEXT	C: employees A: HR managers T: employees' weak bonding identified → more strong bonding between employees achieved E: financial availability, time availability, managers' sensitivity
SOLUTION	social bonding practices imply the introduction of all those activities and moments of sharing between employees able to create a strong team cohesion in the company community; all these activities modify the employees' management process and make it more socially sustainable
Practices	**KPI**
organize moments of sharing between employees (periodic moments of conviviality e.g., at festivity, also providing employees with a specific budget to organize such events between colleagues and/or making company spaces available for the organization of convivial events) [*Davines spa, Palm spa, Andriani spa, Paradisi srl, Omal spa, Bottega Filosofica srl, IET srl*]	number of events organised/year
organize leisure/sport activities/moments of reflection and debate on topics of common interest and team building activities (e.g., Lego Serious Play activities, escape rooms, outdoor activities) [*Andriani spa, Zordan srl, ARB spa, Lookaround srl*]	number of employees involved
organize events open to employees' families (e.g., family day-event) [*Andriani spa, Zordan srl, Hidra srl*]	
organize moments of internal discussion between employees [*Up2you srl, Tangible srl*]	number of employees involved

SOCIAL BONDING	HR - SB
establish a solidarity bank/hours fund (possibility for employees to transfer vacation days to other colleagues free of charge) [*Domori spa, Chiesi Farmaceutici spa, Aboca spa, Mondora srl*]	number of employees involved
establish solidarity fund (into which employees/managers can voluntarily pay sums of money which will be donated free of charge to support the employees in case of need) [*Aboca spa, Zordan srl, Ecor Natura sì spa*]	-
provide parachutes for employees who intend to carry out work experience abroad (giving them the possibility of carrying out the experience abroad and returning to the company after a year under the same economic conditions) [*Mondora srl*]	-
establish a community with former employees (by involving former employees in moments of discussion and/or company events, by providing Christmas gifts also for former employees) [*ICMA srl, Mondora slr*]	-

Table 4.26. Responsible human behaviour

RESPONSIBLE HUMAN BEHAVIOUR		HR - RHB
PROBLEM	employees may adopt unresponsible behaviour that can have negative environmental and social impacts and that should be correct	
CONTEXT	C: employees A: HR manager T: employees' not responsible behaviour identified → more responsible employee's behaviour achieved E: financial availability, managers' sensitivity	
SOLUTION	responsible human behaviour practices imply the adoption of arrangements to change employee's behaviour and make their work habits more environmentally and socially sustainable	
Practices		**KPI**
encourage environmentally sustainable employees' home-work travel (by encouraging the use of bicycles by making bicycles available, providing vouchers for the purchase of bicycles, setting up a reward mechanism for those who use bicycles, making electric cars/bikes/scooters available, encouraging the use of public transport by providing green mobility bonuses and subsidizing public transport passes) [*Andriani spa, ARB spa, Good Point srl, Hidra srl, Newmi srl*]		allocated budget (€) number of employees receiving bonuses/services
deliver reusable water bottles to each collaborator [*Korff srl, Pettenon Cosmetics spa*]		allocated budget (€)
optimize and reduce employees travel also by encouraging the use of remote working [*Flash Innovation srl, Chiesi Farmaceutici spa, Cariplo Factory srl, Ventitrenta srl*]		-
encourage eco-sustainable employees' travel (preferring public transport over one's own transport and preferring less impactful means such as the train rather than the plane, or purchasing plane tickets from companies that compensate the emissions) [*ARB spa, Cariplo Factory srl, Crabiz srl, Goforbenefit srl, Poliste srl*]		-
organize car sharing or company car pooling or shuttle service for employees [*Chiesi Farmaceutici spa, Aboca spa, Pergemine spa, Intexo srl*]		number of employees involved
draft the energy saving manual/waste reducing guide and distribute it in offices [*Florim Ceramiche spa, NWG Energia spa*]		-
recommend a list of environmentally sustainable and/or ethical suppliers for the purchase of home office furniture and equipment [*Mondora srl*]		-
encourage employees to stay in family-run or AirBnB structures when work traveling to support the local economy of the territories [*Mondora srl*]		-

Table 4.27. Green resources management

GREEN RESOURCES MANAGEMENT		RI - GRM
PROBLEM	to realize output, company adopts different resources (e.g., land, water, energy, paper, machinery) whose use and consumption can have negative environmental impact so reducing the company's environmental performance	
CONTEXT	C: environment A: managers of all company's functions/processes T: not environmentally friendly resources use/consumption → more environmentally friendly resources use/consumption E: financial availability, resources availability	
SOLUTION	green resources management practices imply a more responsible, rational, and environmentally friendly use and consumption of productive resources (land, water, paper, energy, machinery) in all business processes; these	

GREEN RESOURCES MANAGEMENT	RI - GRM
	practices do not modify the business process structure but make the consumption of resources of each process more sustainable
Practices	**KPI**
reduce the use of plastic (by eliminating disposable plastic from offices and/or the canteen, eliminating plastic water bottles and installing drinking water dispensers in the offices; installing bulk drink dispensers in the offices; by using only coffee in compostable grains or pods) [*Damiano spa, Korff srl, Mediamo srl, Service Vending srl, Save the Duck spa*]	kg plastic saved
reduce paper consumption (by digitizing documents, dematerialising communication in shops by replacing advertising billboards or price signs with digital monitors, replacing paper pay slips with digital pay slips, dematerialising production documentation such as product technical data sheets or production orders on workstations) [*Fratelli Carli spa, Amapola srl, Zordan srl, Goldman&Partners srl, Tirelli srl*]	Kg paper saved
monitor and reduce water consumption (by installing monitoring software; by installing low-flow water dispensers in buildings; by using groundwater or rainwater recovery for irrigation needs) [*Box Marche spa, Florim Ceramiche spa, Unifarco spa, Nodoubt srl, Assimoco spa*]	liters of water saved
use eco-friendly paper (recycled, FSC certified, derived from sugar cane) [*Fitt spa, Outset srl, ARB spa, SG Company spa, Huky srl, Onde Alte srl*]	-
reduce energy consumption in the offices (by installing presence/movement sensors for the lighting system; by installing an automatic control unit for automatic switching on/off of the heating/cooling systems when the offices are manned/remote control of the heating and cooling systems; by modulating the temperature in the working environments; by installing large windows to exploit natural light) [*Pettenon Cosmetics spa, Andriani spa, Cariplo Factory srl, Way2Global srl*]	KW energy saved kg CO_2 not released or saved
recover abandoned industrial sites to avoid the consumption of virgin land for the construction of new production sites or recover new production spaces from the redevelopment of existing and disused spaces [*Aboca spa, Healty Aging Research Group srl, Reti spa*]	m^2 of land saved
establish company headquarters in a co-working building [*Acube srl, Fenice spa, Goforbenefit srl, Newmi srl, Primate srl*]	-
maintain periodically machinery [*ICMA srl, Fitt spa*]	-
install print management software to monitor paper consumption in the offices [*Cereal Dock spa, ICMA srl*]	-
use eco-friendly institutional communication fonts (i.e., which require less ink for printing) [*Lato srl, DE-Lab srl*]	-
repair PCs and IT tools [*Aton spa, Assimoco spa*]	-
install timers for switching on/off machinery or valves to close machinery and reduce water consumption [*Ponti spa*]	-
implement website standby page after a few minutes of inactivity [*Florim Ceramiche spa*]	-

Table 4.28. Green resources replacement

GREEN RESOURCES REPLACEMENT	RI - GRR
PROBLEM	to realize output, company adopts different resources (land, water, paper, ICT, machinery) which are generally chosen only on the basis of economic efficiency criteria; choose resources only according to economic criteria may have negative impacts in terms of environmental performance
CONTEXT	C: environment A: managers of all company's functions/processes T: resources chosen only on the basis of economic criteria → resources replaced by more environmentally friendly resources E: financial availability, resources availability
SOLUTION	green resources replacement practices imply the replacement of production resources chosen only on the basis of economic criteria with more environmentally friendly resources, chosen by considering also the environmental impact of each resource; the business process structure is not modified but the adoption of more environmentally friendly resources makes it more environmentally sustainable
Practices	**KPI**
substitute conventional energy with energy (electricity and gas) produced from renewable sources and from certified suppliers with guarantee of origin (GO) [*Acquaviva spa, Arca Etichette spa, Box Marche spa, Andriani spa, Korff srl, Piomboleghe srl, Omal spa, Avignonesi srl, Cariplo Factory srl, Fastweb spa, Danone spa, Sagelio srl, Oneclick srl*]	% energy requirement covered by purchases of energy from renewable sources

GREEN RESOURCES REPLACEMENT	RI - GRR
	CO_2 emissions saved energy deriving from renewable sources used (KW)
substitute conventional energy with energy produced from biomass [*Cereal Docl spa*]	% energy produced from renewable sources (KW)
substitute traditional company vehicles with ecological vehicles (electric, hybrid or at least Euro6) [*Alsa Lab srl, Ambrosol srl, Fitt spa, ICMA srl, Cortilia spa, Aboca spa, Sthanhome spa, Convergenze spa*]	number of ecological vehicles adopted number of ecological vehicles purchased/year
replace machinery with others that are more efficient in terms of energy and/or material consumption [*Antica Erboristeria spa, Etifix srl, Korff srl*]	-
replace old machinery washing systems with a more efficient systems to reduce water consumption [*Aboca spa*]	-
substitute digital service provider (such as email hosting) with an environmentally sustainable server provider (e.g., which offsets its CO2 emissions, which has a plan to reduce its carbon footprint or whose data centers run only on electricity from renewable sources) [*Leotron srl, Mondora srl, Alterevo srl, Canino srl*]	-
substitute traditional search engine with an environmentally sustainable search engines (e.g., search engine which uses advertising revenues to plant trees) [*De-Lab srl*]	-
adopt cloud sharing instead sending emails [*Primate srl*]	-

Table 4.29. Social resources replacement

SOCIAL RESOURCES REPLACEMENT		RI - SRR
PROBLEM	to realize output, company adopts different resources (e.g., ICT, machinery) which are generally chosen only on the basis of economic efficiency criteria; choose resources only according to economic criteria may have negative impacts in terms of social performance	
CONTEXT	C: workers A: managers of all company's functions/processes T: resources chosen only on the basis of economic criteria → resources replaced by more socially responsible resources E: financial availability, resources availability	
SOLUTION	social resources replacement practices imply the replacement of production resources chosen only on the basis of economic criteria with more socially responsible resources, chosen by considering also the social impact of each resource; the business process structure is not modified but the adoption of more socially responsible resources makes it more socially sustainable	
Practices		**KPI**
replace old desks and workstation with more comfortable desks and workstations (e.g., height-adjustable, large PC screens) [*Andriani spa, Chiesi Farmaceutici spa, Fenice spa, Canino srl*]		number of ergonomic workstations installed
replace old machinery with automatic machinery to improve the ergonomics of workstations and reduce repetitive workloads [*Antica Erboristeria spa, Paradisi srl, Pasticceria Filippi srl*]		number of machineries replaced
substitute traditional search engine with a socially sustainable search engine (e.g., web browser that uses advertising revenues to support social enterprises, social inclusion initiatives for the weakest group of the population) [*De-Lab srl*]		-

Table 4.30. Circular production

CIRCULAR PRODUCTION		PR - CP
PROBLEM	company which adopts a linear production model has negative environmental performance	
CONTEXT	C: environment A: production manager T: not environmentally sustainable production → more environmentally sustainable production W: financial availability, technical process' constraints	

CIRCULAR PRODUCTION	PR - CP
SOLUTION	circular production practices imply the adoption of a circular approach in terms of reusing of production wasted, refurbishment of materials and recovering of end-of-life products to make the production process more environmentally sustainable
Practices	**KPI**
conduct differentiation and recycling of production wastes [*Braida srl, Fratelli Carli spa, Illy caffè spa, Omal spa, Paradisi srl, Zordand srl*]	% production waste recycled
reuse processing waste to produce energy (e.g., from biomass/biogas) to power production plants or recover and reintroduce production waste into production [*Damiano spa, Braida srl, Ferrarelle spa, ICMA srl, Pettenon Cosmetics spa, Maccarese spa*]	% energy produced by recovering processing waste quantity of processing waste recovered and reintroduced into production
purify the waste water from the production process and reintroduce the purified water into the environment or into the production process [*ICMA srl, Perlage srl, Omal spa, Aboca spa*]	% water purified
purify the water used during production processes and reuse it for activities that do not require specific quality requirements (e.g. cleaning of environments) [*Florim Ceramiche spa, Pettenon Cosmetics spa, Piomboleghe spa*]	
recover energy waste (e.g. hot air) and reuse for heating buildings [*Florim Ceramiche spa, Novamont spa, Fileni Alimentare spa, Omal spa*]	% energy recovered
reuse packaging (in internal processes for the production of new packaging) [*Fitt spa, Unifarco spa*]	-
collect, recycle and recover end-of-life products from customers [*Acquaviva spa, Levico Acque srl*]	% of end-of-life products collected and recycled/recovered
collect end-of-life products and destine them to charities (also with the provision of a digital interface that allows customers to track the destination of the products, as in case of clothes) [*Out of srl, Seay srl*]	% of end-of-life products collected and donated to charities

Table 4.31. Social outsourcing

SOCIAL OUTSOURCING	PR - SO
PROBLEM	when a company is not able to fulfil part of some processes in socially sustainable manner, the production process may have a negative social impact
CONTEXT	C: weaker groups of population A: production manager T: not socially sustainable production → more socially sustainable production E: financial availability, technical process' constraints
SOLUTION	social outsourcing practices imply the transfer of some activities or parts of the process to external companies/organizations which are able to carry out such activities in more socially sustainable manner in order to improve the company's social impact
Practices	**KPI**
transfer part of processes to partners who share the same values (e.g., transfer the cleaning of spaces to social cooperatives or social companies that operate in socially sustainable manner) [*Alisea srl, Antica Erboristeria spa, Pasticceria Filippi srl, Nodoubt srl, Primate srl]*	-
transfer parts of the production process (e.g., product packaging) to social cooperatives (which favour the inclusion of disabled people or valorise the work of prisoners, or which employ refugee women) or create particular product lines realised by social cooperatives [*Jonix spa, Pergemine spa, Endelea srl*]	-

Table 4.32 Green product features

GREEN PRODUCT FEATURES	P - GPF
PROBLEM	when company's products offering has negative environmental impacts, the company reputation may be damaged, and company may face difficulties in obtaining a competitive advantage (as it may not be able to reach customers that are interested in environmentally friendly products)
CONTEXT	C: customers A: product manager T: not environmentally friendly product → more environmentally friendly product

GREEN PRODUCT FEATURES	P - GPF
	E: technical characteristics of the product, financial availability
SOLUTION	company identifies and implements some products' features and eco-design approach to make the products offering more environmentally friendly
Practices	**KPI**
develop eco-sustainable packaging solutions (e.g., by replacing plastic with glass; by creating packaging solutions that do not have disposable parts, with instructions printed directly on the packaging and inks from renewable sources, favouring recycled materials, by reducing weight/quantity of materials used to create the packaging or reduction of overpackaging) [*Ambro Sol srl, Davines spa, Domori spa, Labomar spa, Palm spa, Aboca spa*]	Kg of plastic saved Kg of materials saved
analyse the social and environmental impacts of products (e.g., using SLCA methodology) [*Zordan srl, Chiesi Farmaceutici spa*]	-
create rechargeable products [*Davines spa, Pettenon Cosmetics spa*]	number of rechargeable products included in the offer
create products that can be dismantled and have separable components to encourage correct recycling of the components [*Fitt spa, Illy caffè spa, Omal spa*]	number of products with separable components
promote product repairability [*Fitt spa, Out of srl*]	-
sell products in bulk or with reusable packaging (e.g., fabric shopping bags) [*Endelea srl, Ecor Natura sì spa*]	% products in bulk or with reusable packaging sold

Table 4.33. Green product variant

GREEN PRODUCT VARIANT	P - GPV
PROBLEM	when company's product offering has negative environmental impacts and the products features may be not modified, company may face difficulties in obtaining a competitive advantage (as it may not be able to reach customers that are interested in environmentally friendly products)
CONTEXT	C: customers A: product manager T: not environmentally friendly offering → more environmentally friendly offering E: technical characteristics of the product, financial availability
SOLUTION	company introduces an additional variant of product with more environmentally friendly characteristics; the conventional product remains but the company allows customers to choose a more sustainable product variant
Practices	**KPI**
launch product lines made with environmentally friendly materials (e.g., organic materials, recycled materials, waste materials, or waste food raw materials because they are not suitable for large-scale distribution) [*Davines spa, Korff srl, Ponti spa*]	% eco-friendly products included in the offer
launch product lines whose production uses waste from other processes (e.g., purified water) and which contribute to capturing the CO_2 emitted [*Andriani spa*]	kg CO_2 captured quantity of products produced

Table 4.34. Green product labelling

GREEN PRODUCT LABELLING	P - GPL
PROBLEM	when company's products have environmentally friendly characteristics, company should exploit them to obtain competitive advantage
CONTEXT	C: customers A: product manager T: product' s environmentally friendly characteristics not disclosed → product's environmentally friendly characteristics disclosed E: financial availability
SOLUTION	company discloses the product's environmentally friendly characteristics by labelling product with corresponding environmental certificates
Practices	**KPI**
adopt product labelling (including digital with QR code) which provides information relating to the environmental sustainability of the product and the correct disposal of the product and/or packaging or which reports environmental issues to make consumers reflect [*Davines spa, ICEL srl, Levico Acque srl, Ponti spa, Maccarese spa, Fratelli Carli spa*]	-

GREEN PRODUCT LABELLING	P - GPL
obtain environmental certification for products (e.g., organic certification, gluten free certification, FSC certification of wood/paper products) [*Damiano spa, Palm spa, Andriani spa*]	number of environmental certifications obtained
obtain environmental certification of the production process (e.g., organic production certification, production to protect biodiversity) [*Aboca spa, Boniviri srl, Cortilia spa*]	

Table 4.35. Participatory product/service design

PARTICIPATORY PRODUCT/SERVICE DESIGN	P-PPD
PROBLEM	when company designs a product/service and define its functionalities, also in terms of sustainable features, should involve stakeholders that have suitable skills and knowledge as well as customers to consider their needs and expectations
CONTEXT	C: customers, universities and research institutions A: product manager T: customers' needs and expectations not considered → customers' needs and expectations considered E: time availability
SOLUTION	to design a product/service whose features and functionalities are able to respond to customers' needs and expectations, company may actively involve customers in the product/service design; also, to design products services with sustainable characteristics company may implement a collaboration with universities and research institutions
Practices	**KPI**
collaborate with universities/research institutions to develop innovative and sustainable products/processes [*Ceral Docks spa, Pettenon Cosmetics spa, Illy caffè spa*]	number of collaborations undertaken
involve customers in the product/service design [*Arché srl, Way2Global srl, Leotron srl*]	-

Table 4.36. Social product variant

SOCIAL PRODUCT VARIANT	P-SPV
PROBLEM	when company has a product offering with characteristics that make it not adequate for particular categories of people (for instance elderly or disabled) the company may have a negative reputation and may have a weak social performance
CONTEXT	C: customers A: product manager T: not socially responsible offering → more socially responsible offering E: technical characteristics of the product, financial availability
SOLUTION	company introduces an additional variant of product with more socially responsible characteristics; the conventional product remains but the company allows customers to choose a more sustainable product variant
Practices	**KPI**
launch product lines specifically designed for the elderly and disabled [*Alessi spa*]	-

Table 4.37. Social product labelling

SOCIAL PRODUCT LABELLING	P-SPL
PROBLEM	when company's products have socially responsible characteristics, company should exploit them to obtain competitive advantage
CONTEXT	C: customers A: product manager T: product' s socially responsible characteristics not disclosed → product' s socially responsible characteristics disclosed E: financial availability
SOLUTION	company discloses the product' s socially responsible characteristics by labelling product with corresponding social certificates
Practices	**KPI**
obtain socially responsible product certifications (e.g., fair trade, Kosher, Halal, VeganOk) [*Alsa Lab srl, Korff srl, Ponti spa, Andriani spa*]	number of social certifications obtained

Table 4.38. Green logistic and warehousing

GREEN LOGISTIC AND WAREHOUSING	VC-GLW
PROBLEM	logistic processes are impactful processes as they include activities (such as transports of goods and materials) that can have relevant negative environmental impacts related to polluting emissions; also warehousing processes can have relevant negative environmental impacts related, for instance, to products' tertiary packaging and products' movement; these impactful processes may determine an environmental performance deterioration that should be mitigated
CONTEXT	C: environment A: logistic manager T: not environmentally sustainable logistic and warehousing processes → more environmentally sustainable logistic and warehousing processes E: financial availability; technical constraints
SOLUTION	green logistic and warehousing practices imply the adoption of arrangements to more environmentally manage transport of goods, delivery of products as well as the packaging of products
Practices	**KPI**
adopt good practices in deliveries (optimization of deliveries by using fully loaded vehicles, replacing road transport with less impactful rail and/or maritime transport, use of intermodal transport) [*Cereal Docks spa, ICEL srl, Chiesi Farmaceutici spa, Euro Company srl*]	kg CO2 non released/saved
use carriers and transport services that reduce polluting emissions or carriers that offset their environmental impact (by requiring an additional cost to cover the costs of CO2 compensation) [*Flash Innovations srl; Chiesi Farmaceutici spa, Euro Company srl*]	number of carriers carrying out emissions compensation/tot carriers
monitor transport emissions [*Seay srl, Fratelli Carli spa*]	-
use eco-sustainable tertiary packaging (by replacing plastic packaging with cardboard packaging, using recycled or biodegradable packaging materials, eliminating adhesive labels, using recycled plastic materials as package filler) [*Fratelli Carli spa, Seay srl, Out of srl*]	kg of plastic saved % recycled plastic in the packaging % biodegradable plastic in the packaging
optimize tertiary packaging (minimization of package dimensions, use of narrower packages that can be placed in greater numbers on pallets) [*Fitt spa, Davines spa*]	Kg of materials saved
rent pallets (instead of purchasing pallets) to reduce environmental impact [*Euro Company srl*]	-

Table 4.39. Green purchasing

GREEN PURCHASING	VC-GP
PROBLEM	business processes may have a negative environmental impact due to the purchasing of not environmentally friendly materials, raw materials, consumables, electronic equipment
CONTEXT	C: environment A: purchasing manager/buyer T: not environmentally sustainable purchases → more environmentally sustainable purchases E: financial availability, availability of green materials that have the technical requirements
SOLUTION	green purchasing practices rely on a more attention paid to environmental characteristics of materials, raw materials, consumables purchased; the structure of purchasing process remains the same, but the materials purchased are more environmentally friendly
Practices	**KPI**
purchase eco-friendly packaging (in recycled paper/FSC certified paper, in biodegradable plastic, in recycled plastic, in compostable material) [*Antica Erboristeria spa, Damiano spa, Labomar spa, Ponti spa, Aboca spa, Apoteca Natura spa, Stanhome spa, Yves Rocher srl*]	% eco-friendly packaging purchased
purchase eco-friendly consumables (recycled paper/unbleached paper/FSC certified paper; plastic free consumables; consumables/stationery made from recycled plastic) [*Tecnosystemi spa, Omal spa, Nativa srl, Primate srl, Service Vending srl, Evolvere spa*]	% eco-friendly consumables purchased
purchase environmentally friendly raw materials (e.g., recycled raw materials; FSC certified in the case of paper or wood; organic in the case of agricultural and food products) [*Damiano spa, Fitt spa, Piomboleghe srl, Ponti spa*]	% eco-friendly raw materials purchased
purchase energy star electronic equipment (such as PCs), with low energy consumption and with automatic stand-by systems [*Good Point srl, Uomo&Ambiente srl, Assimoco spa*]	-
purchase refurbished PCs for offices [*Progesto srl, Ventitrenta srl*]	

Table 4.40. Social purchasing

SOCIAL PURCHASING	**VC - SP**
PROBLEM	business processes may have a negative social impact due to the purchasing of not socially and ethically responsible materials, raw materials, consumables
CONTEXT	C: local community, society A: purchasing manager/buyer T: not socially sustainable purchases → more socially sustainable purchases E: financial availability, availability of socially responsible materials that have the technical requirements
SOLUTION	social purchasing practices rely on a more attention to social and ethical characteristics of materials, raw materials, consumables purchased; the structure of purchasing process remains the same, but the materials purchased are more socially sustainable
Practices	**KPI**
purchase raw materials/consumables or products for sale with Fair Trade certification [*Damiano spa, Next Social Commerce srl, Service Vending srl*]	% certified raw materials/consumables
purchasing food to consume in the company (e.g., during meetings) from catering services that operate in a socially sustainable manner or from food delivery services/platforms against food waste [*ARB spa, Up2you srl, Service Vending srl*]	-
purchase certified animal raw materials (for example certified cruelty free which guarantee animal welfare or which are not tested on animals) [*Pasticceria Filippi srl, Save the Duck spa*]	% certified animal raw materials
purchase company gadgets at zero km, purchased locally to support the local economy [*Bizaway srl*]	-

Table 4.41. Social selling

SOCIAL SELLING	**VC - SS**
PROBLEM	when company manages sales in a not socially responsible manner may lose competitive advantage as it is not able to attract those customers that are sensitive to social issues
CONTEXT	C: customers A: sales manager T: not socially sustainable sales → more socially sustainable sales E: financial availability, managers' sensitivity
SOLUTION	social selling practices imply the adoption of arrangements to make the sales more socially sustainable; in some cases, the structure of selling process is modified as other activities may be added
Practices	**KPI**
collect customers' feedback on the level of satisfaction related to products/services [*Alessi spa, Outset srl, Paradisi srl, Hidra srl, Lam Consulting srl, Nodoubt srl*]	number of collected feedback
adopt ethical marketing (ethical communication towards customers by avoiding redundant push messages, advertising emails, guarantee privacy and security for customers' data) [*Box Marche spa, Ponti spa, Andriani spa, Hidra srl, Treebu srl*]	-
treat customers equally [*Fastweb spa, Doxee spa, Convergenze spa*]	-
activate home delivery service of products [*Levico Acque srl, Farmacie Fiorentine spa*]	-
activate suspended shopping service [*Ecor Natura sì spa*]	-
donate psychological therapy sessions to clients [*Korff srl*]	-
sell products at controlled prices (e.g., para pharmaceutical products) to benefit the weakest groups of the population [*Farmacie Fiorentine spa*]	-
sell products on online platform which is specifically aimed at small businesses that operate in a sustainable manner [*Rigeneriamo spa*]	-

Table 4.42. Green and socially responsible suppliers

GREEN&SOCIALLY RESPONSIBLE SUPPLIERS	**VC-G&SRS**
PROBLEM	suppliers may not be socially and environmentally sustainable; in a supply chain, an inadequate suppliers' sustainability performance can affect the sustainability performance of the other companies
CONTEXT	C: suppliers A: purchasing manager/buyer T: not environmentally and socially sustainable suppliers → more environmentally and socially sustainable suppliers

GREEN&SOCIALLY RESPONSIBLE SUPPLIERS	VC-G&SRS
E: financial availability, availability of more sustainable suppliers	
SOLUTION green and socially responsible suppliers practices imply the adoption of social and environmental standards that have to be followed in the choice of suppliers as well as in their assessment; these practices modify the way of suppliers detection and the management of the relationships with them	
Practices	**KPI**
choose local suppliers to support the local economy and reduce transport CO2 emissions [*Alisea srl, Andriani spa, Braida srl, Box Marche spa, Davines spa, Unifarco spa, De-Lab spa*]	% local suppliers % purchases from local suppliers
choose Italian suppliers [*Fitt spa, Pasticceria Filippi srl, Ponti spa, Bibendum Group srl*]	% Italian suppliers % purchases from Italian suppliers
choose suppliers which have environmental certifications [*Alisea srl, Cereal Docks spa, Unifarco spa, Zordan srl*]	% suppliers with environmental certifications
conduct supplier assessment according to environmental sustainability criteria [*Davines spa, KF srl, Labomar spa, Ponti spa, Paradisi srl, Pergemine spa*]	% suppliers evaluated % suppliers who responded to the questionnaire
conduct supplier assessment according to social sustainability criteria [*Davines spa, KF srl, Andriani spa, Labomar spa, Ponti spa, Pettenon Cosmetics spa, Omal spa*]	% suppliers who comply with environmental/social sustainability requirements
prepare supplier code of conduct including criteria (e.g., product quality, ethical, environmental and social principles) that suppliers are required to respect [*Andriani spa, Chiesi Farmaceutici spa, Omal spa, Save the Duck spa, Euro Company srl*]	-
engage and raise awareness among suppliers to guide them in improving environmental sustainability performance (e.g., on the issues of climate change, eco-friendly packaging, use of renewable energy, low environmental impact transport) and social sustainability performance [*Ponti spa, Andriani spa, Effe Diligence srl, Aboca spa, Way2Global srl*]	number of awareness-raising initiatives undertaken number of suppliers involved

Sustainable process patterns: adoption in the Italian BCs

Figure 4.17 shows the distribution of sustainable process patterns adopted by the analysed Italian BCs. The social process pattern "Social external compensation" is absolutely the most adopted process pattern, followed by "Training" and "Social internal compensation". This demonstrates the strong attention paid by the analysed BCs to the management of external relationships and the sustainable management of employees. Among green process patterns, the "Green workplace" pattern is the most adopted by BCs, followed by "Green resources management", "Green resources replacement" and "Green Compensation". Governance process patterns are adopted by a more limited number of BCs.

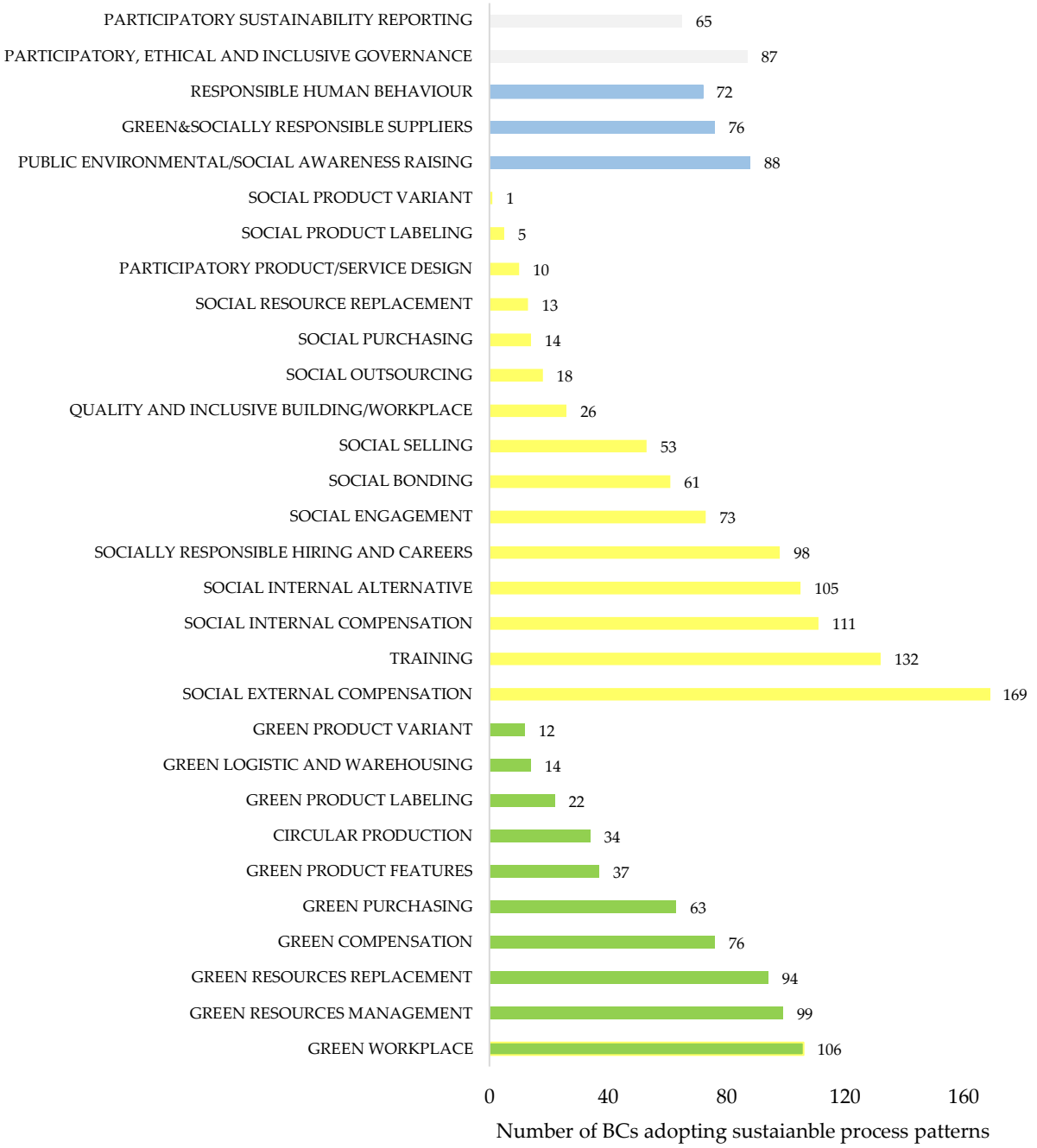

Figure 4.17. Adoption of sustainable process patterns by Italian Benefit corporations

Figure 4.18 and Figure 4.19 show the adoption of green and social process patterns in the three productive sectors (primary, secondary and tertiary sectors) to which the analysed BCs belong. For each green pattern and for each social pattern the percentage of BCs that adopt the pattern in each productive sector is shown.

Figure 4.18 shows that "Geen workplace" is the most adopted green process pattern by BCs that operate in the primary and secondary sectors; the green pattern "Green compensation" is adopted above all by BCs that operate in the secondary sector (as 29 BCs out of 58 BCs that operate in the secondary sector adopt the pattern).

As to social patterns, "Socia external compensation" pattern is almost equally adopted by BCs that operate in the primary and secondary sectors (83% of BCs that operate in the primary sector and 84% of

those that operate in the secondary sector adopt the pattern) and less adopted in the tertiary sector (in which the 66% of BCs adopt the pattern).

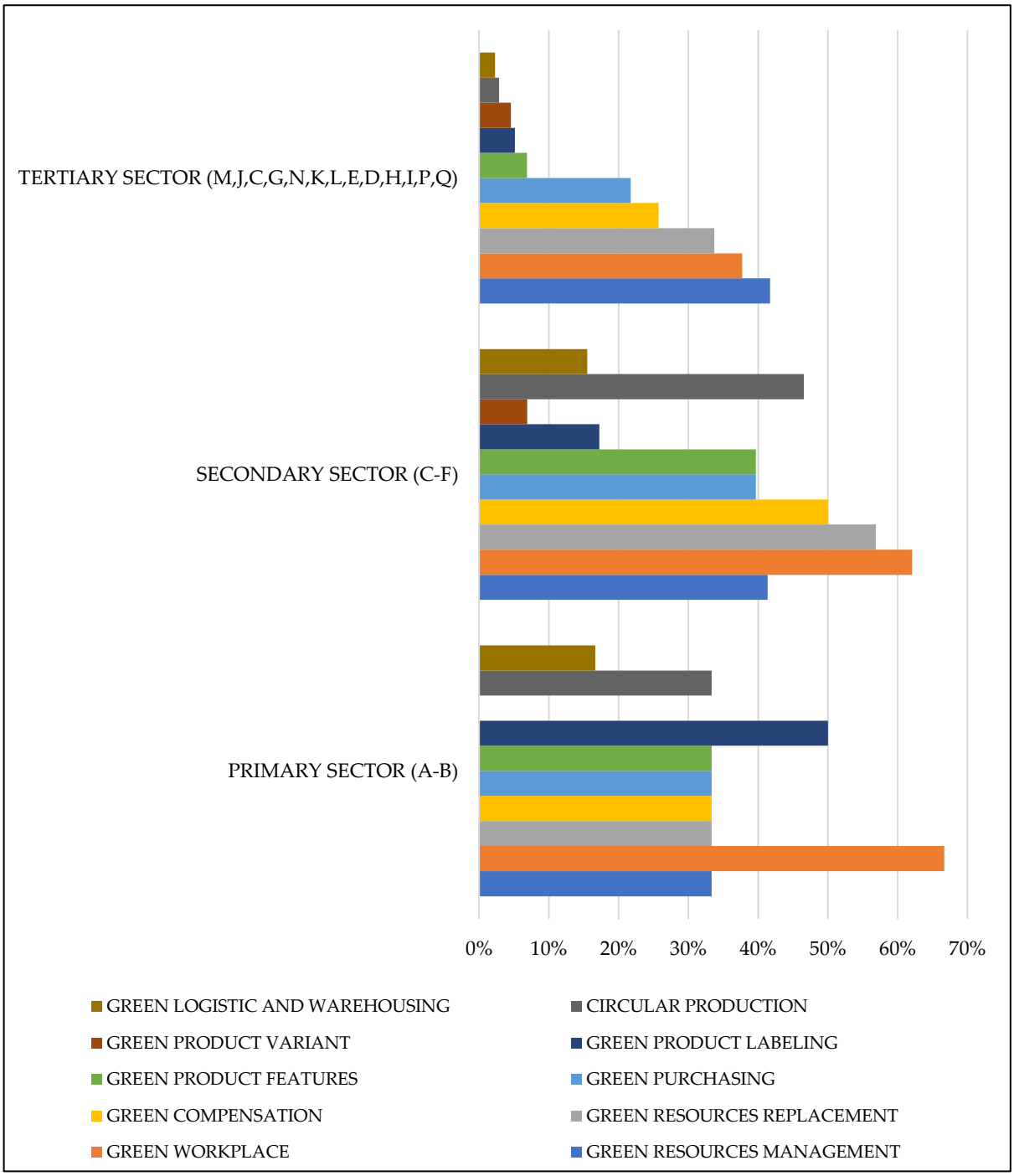

Figure 4.18. Adoption of Green process patterns in the three productive sectors

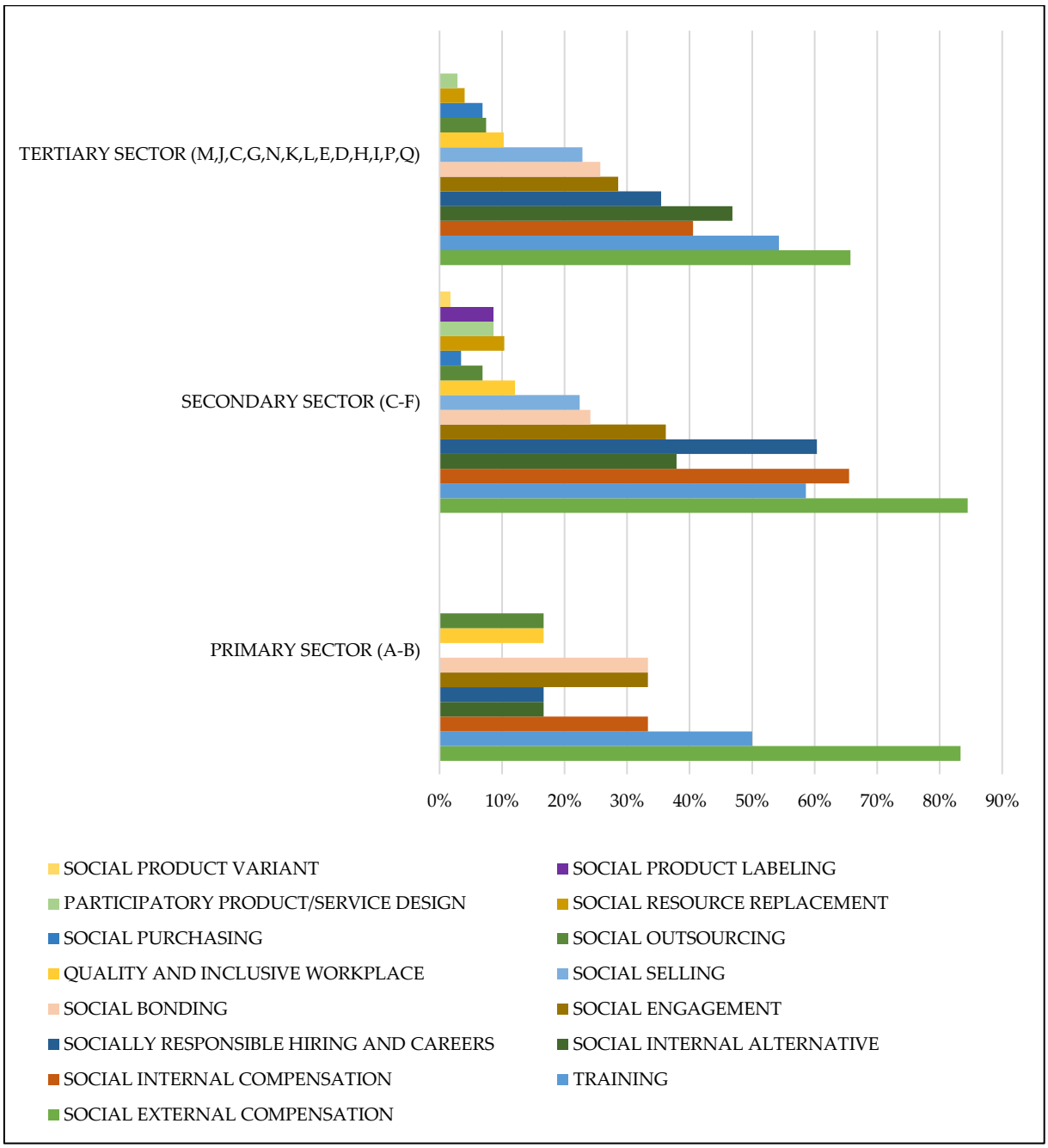

Figure 4.19. Adoption of Social process patterns in the three productive sectors

Sustainable process patterns: stakeholders and business processes

As to stakeholders to whom green and social process patterns address, Figure 4.20 shows that by adopting green process patterns, companies may have impact on the environment above all (as 88% of practices included in the green process patterns have the environment as stakeholder); by adopting social process patterns, companies turn to workers above all (as 61% of practices included in the social process patterns have workers as stakeholders); social process patterns also benefit charities, local community, citizens, developing countries, healthcare institutions, universities and research institutions, animals, suppliers, and customers. Hybrid patterns – those that include both environmental and social business practices – refer to workers above all and to suppliers, citizens, local community and research institutions. Governance patterns refer to the company management, workers and all

company's stakeholders (participatory sustainability reporting pattern refers to all stakeholders that should be involved in the sustainability reporting process).

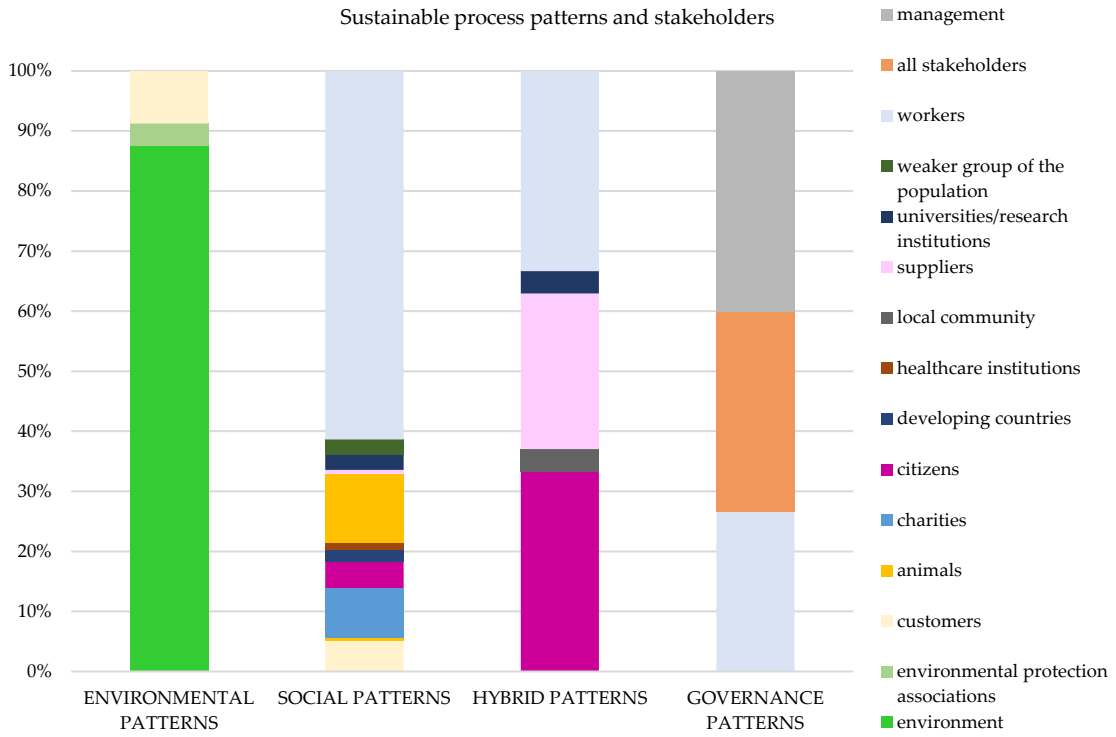

Figure 4.20. Stakeholders and sustainable process patterns

Figure 4.21 shows the distribution of sustainable practices included in the green, social, hybrid and governance process patterns on the basis of the business process to which each practice refers. It can be noted that, green process patterns allow to environmentally improve business processes that goes from the management of resources and inputs, the production process, the sale process, the purchasing process, to the external relationships management process. Social process patterns allow to manage in a socially sustainable manner the employees' management process and the external relationships management process, above all, but also the sale process, the purchasing process and the facilities management process. For instance, the social process pattern "Quality and inclusive workplace" includes social practices (e.g., eliminate architectural barriers to make offices/buildings accessible to all; adopt genderless bathroom, install works of art in the offices and common areas) that allow to make the facilities management more socially sustainable.

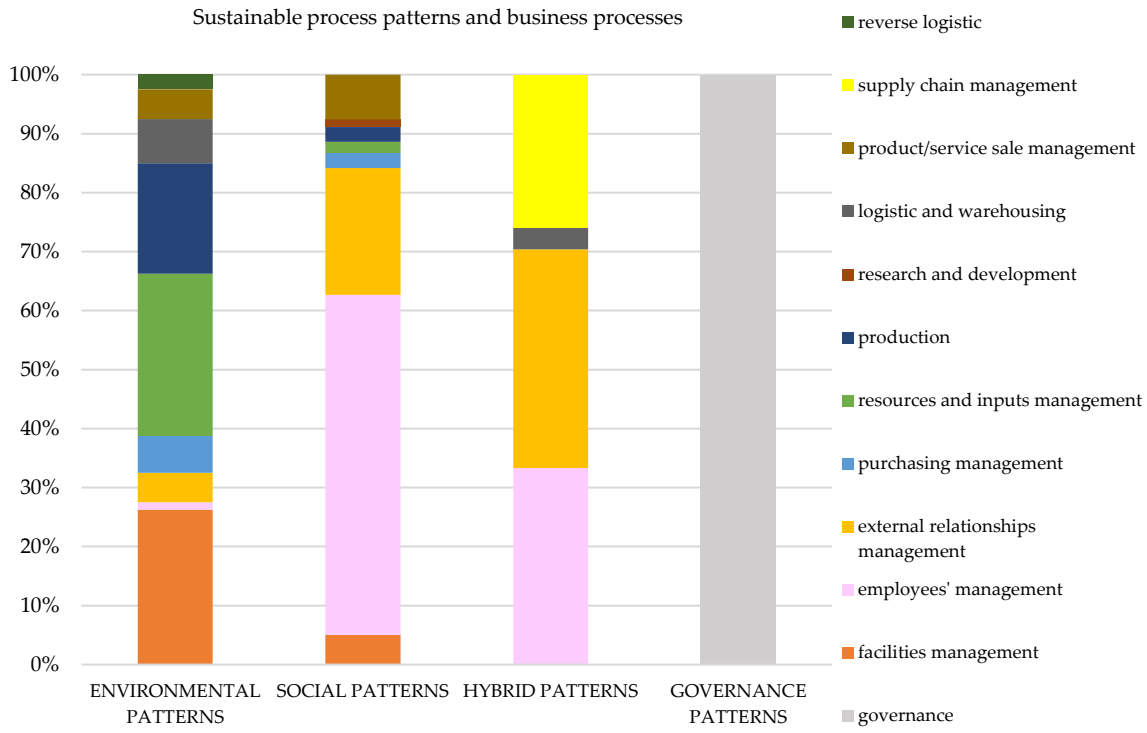

Figure 4.21. Business processes and sustainable process patterns

Table 4.43 details, for each identified process pattern, the stakeholders to whom the practices included in the pattern refer. For instance, a company that wants to improve its impact on the environment may implement one or more process patterns among Green Workplace, Circular production, Green Compensation, Green Logistic and warehousing, Green Product Features, Green Purchasing and Green Resources Management; similarly, if a company intends to improve its impact on local community may choose among social process patterns, namely Social External Compensation, Socially Responsible Hiring and Careers, Social Purchasing and Social selling.

The tool presented in Table 4.43 allows company to select the appropriate sustainable process pattern on the basis of the stakeholder to whom it intends to benefit, so supporting companies in the detection of sustainable process patterns to be implemented to redesign their business processes making them more environmentally and socially sustainable.

Table 4.44 relates sustainable process patterns and business processes, so providing companies with a tool to identify and select the appropriate sustainable patterns to (re)design their business processes and make them more sustainable. Once the company has selected the process pattern to be applied, the process pattern provides a set of practices that can be implemented.

For instance, a company that wants to make more sustainable the employees' management process may adopt a set of social process patterns (e.g., Social Internal Alternative, Social Bonding, Socially responsible hiring and careers) to make the process more socially sustainable, and the green pattern "green compensation" to make it more environmentally sustainable. The Green Compensation pattern includes the practice "plant a tree for each employee (e.g. on the occasion of a birthday) or for each new member of the company community" that refer to employees' management process.

Similarly, if a company wants to redesign the sale process, it may adopt social patterns (e.g., Social selling and Social external compensation) to make the sale process more socially sustainable as well as

green patterns (e.g., Green compensation, Green product labelling) to make it more environmentally sustainable. For example, adopt the pattern "social external compensation" to redesign the sale process implies adopt practices as "donate revenues (or % of them) deriving from a certain number of shopping days s (e.g. Black Friday) to finance associations and charities" or "donate revenues (or % of them) deriving from the sale of products to finance social initiatives (e.g. construction of wells and water purification plants in water-critical areas, financing of scholarships in Africa)"; such social practices refers to sale process and allow to make it more socially sustainable. Also, adopting the process pattern Green Compensation to redesign the sale process means introducing some environmental compensation activities related to the products/services sales (e.g., by planting trees every time a certain quantity of products sold is reached; by collecting of a quantity of plastic equivalent to the quantity of products sold; by planting a tree for each new affiliated seller; by planting a tree for each new contracted service/customer).

Table 4.43. Relationships between sustainable process patterns and stakeholders

Sustainable Process Patterns	Environment	Environmental protection associations	Customers	Animals	Charities	Citizens	Developing countries	Healthcare institutions	Local community	Suppliers	Universities research institutions	Weaker groups of the population	Workers	Management	All stakeholders
CIRCULAR PRODUCTION	•		•												
GREEN WORKPLACE	•														
GREEN COMPENSATION	•	•													
GREEN LOGISTIC AND WAREHOUSING	•														
GREEN PRODUCT FEATURES	•		•												
GREEN PRODUCT LABELLING			•												
GREEN PRODUCT VARIANT			•												
GREEN PURCHASING	•														
GREEN RESOURCES MANAGEMENT	•														
GREEN RESOURCES REPLACEMENT	•														
PARTICIPATORY PRODUCT/SERVICE DESIGN			•								•				
QUALITY AND INCLUSIVE WORKPLACE													•		
SOCIAL BONDING													•		
SOCIAL ENGAGEMENT													•		
SOCIAL EXTERNAL COMPENSATION					•	•	•	•	•		•	•	•		
SOCIAL INTERNAL ALTERNATIVE													•		
SOCIAL INTERNAL COMPENSATION															
SOCIAL OUTSOURCING					•					•					
SOCIAL PRODUCT LABELLING			•												

Sustainable Process Patterns	Environment	Environmental protection associations	Customers	Animals	Charities	Citizens	Developing countries	Healthcare institutions	Local community	Suppliers	Universities research institutions	Weaker groups of the population	Workers	Management	All stakeholders
SOCIAL PRODUCT VARIANT			•												
SOCIAL PURCHASING				•		•			•						
SOCIAL RESOURCES REPLACEMENT												•	•		
SOCIAL SELLING			•						•			•			
SOCIALLY RESPONSIBLE HIRING AND CAREERS						•			•			•	•		
TRAINING													•		
GREEN&SOCIALLY RESPONSIBLE SUPPLIERS									•	•					
PUBLIC ENVIRONMENTAL & SOCIAL AWARENESS RAISING						•					•				
RESPONSIBLE HUMAN BEHAVIOUR													•		
PARTICIPATORY, ETHICAL AND INCLUSIVE GOVERNANCE													•	•	•
PARTICIPATORY SUSTAINABILITY REPORTING															•

Table 4.44. Relationships between sustainable process patterns and business processes

Sustainable Process Patterns	Governance	Facilities management	Employees' management	External relationships management	Purchasing management	Resources and inputs management	Production	Research and development	Logistic and warehousing	Product/service sale management	Supply chain management	Reverse logistic
CIRCULAR PRODUCTION							•					•
GREEN WORKPLACE		•										
GREEN COMPENSATION		•	•	•		•				•		
GREEN LOGISTIC AND WAREHOUSING									•			
GREEN PRODUCT FEATURES							•			•		
GREEN PRODUCT LABELLING							•			•		
GREEN PRODUCT VARIANT							•					
GREEN PURCHASING					•							
GREEN RESOURCES MANAGEMENT		•				•						
GREEN RESOURCES REPLACEMENT						•						
PARTICIPATORY PRODUCT/SERVICE DESIGN								•				
SOCIAL EXTERNAL COMPENSATION				•						•		
QUALITY AND INCLUSIVE WORKPLACE		•	•									
SOCIAL BONDING			•									
SOCIAL ENGAGEMENT			•									
SOCIAL INTERNAL ALTERNATIVE			•									
SOCIAL INTERNAL COMPENSATION			•									
SOCIALLY RESPONSIBLE HIRING AND CAREERS			•									
TRAINING			•									
SOCIAL PURCHASING					•							

Sustainable Process Patterns	Governance	Facilities management	Employees' management	External relationships management	Purchasing management	Resources and inputs management	Production	Research and development	Logistic and warehousing	Product/service sale management	Supply chain management	Reverse logistic
SOCIAL PRODUCT VARIANT												
SOCIAL PRODUCT LABELLING												
SOCIAL OUTSOURCING												
SOCIAL RESOURCES REPLACEMENT						•						
SOCIAL SELLING										•		
GREEN&SOCIALLY RESPONSIBLE SUPPLIERS									•		•	
PUBLIC ENVIRONMENTAL & SOCIAL AWARENESS RAISING				•								
RESPONSIBLE HUMAN BEHAVIOUR			•									
PARTICIPATORY, ETHICAL AND INCLUSIVE GOVERNANCE	•											
PARTICIPATORY SUSTAINABILITY REPORTING	•											

Sustainable process patterns: evolution over time

The evolution over time of green and social process patterns has been analysed, by adopting the already mentioned sub sample of 26 BCs. Table 4.45 shows the evolution of sustainable process patterns for the 26 BCs.

Sustainable process patterns are generally implemented constantly over time; in other words, sustainable process patterns are consecutively adopted over the years. For instance, although with some differences among different companies, when a BC adopts a green pattern (e.g., circular production, or green resource management) such a pattern continues to be adopted also in the following years. Some exceptions, however, exist. For example, a more irregular adoption of some social patterns (e.g., social engagement) is highlighted for some companies (Chiesi Farmaceutici spa and Andriani spa) in the years 2020-2021, maybe for the pandemic situation.

In general terms, BCs tend to increase the number of patterns adopted over the years, demonstrating an increasing attention towards sustainability.

As to the adoption over time of sustainable process patterns, the conducted analysis reveals some recurring evolution models for some process patterns. For the governance process patterns, the conducted analysis reveals that in many cases (e.g., for Aboca spa, Chiesi Farmaceutici spa, Paradisi srl, Ayming Italia srl, De-Lab srl, Way2Global srl, Forgreen spa) the governance pattern "Participatory sustainability reporting" is adopted in a second moment with respect the governance pattern "Participatory, ethical and inclusive governance". This implies that BCs first adopt governance practices such as the adoption of ethical code, the appointment of an impact manager, and the adoption of particular governance systems, and in a second moment, undertake a participatory sustainability reporting process.

A similar trend over time is highlighted also for the green process pattern "Green Compensation". The conducted analysis, indeed, reveals that a considerable number of companies (i.e., Andriani spa, Paradisi srl, Perlage srl, Zordan srl, Izmade srl, Nativa srl, Dermophisiologique srl, Sagelio srl) introduce green compensation activities in a second moment; they first adopt other patterns (e.g., green resources management, green resources replacement, circular production, green workplace) to mitigate their environmental impacts, taking action into the production process, the eco-friendly management of buildings and productive resources, the environmentally sustainable management of purchasing, and then add green compensation activities, as a way to compensate the residual detrimental business processes' impacts on the environment.

This trend over time does not appear to be valid for the social compensation patterns (social internal compensation and social external compensation) as the analysed BCs generally adopt these social process patterns already in the early year considered in this analysis and in a continuative manner.

Such results have been achieved from the analysis of a limited number of companies (26 BCs) and they are not generalizable; however, such results may constitute hypothesis to be tested by adopting other qualitative methodology (e.g., surveys and interviews) to more in-depth investigate the adoption and the evolution over time of sustainable process patterns.

As already mentioned, BCs often not uniformly report their achieved impacts and sustainability goals over the years; so, the only adoption of qualitative content analysis is not always able to explain how sustainable practices and patterns evolve over time; more studies, based on surveys and interviews to be submitted to a wider sample of companies, are needed to better investigate such an aspect.

Table 4.45. Sustainable process patterns – evolution over time

Benefit Corporation	Business Activity	2017	2018	2019	2020	2021
ABOCA spa (for more details see Table D1)	development of innovative therapeutic solutions based on natural molecular complexes	-			G-PEIG	G-PEIG
		-				G-PSR
		-	ER-GC	ER-GC	ER-GC	ER-GC
		-	RI-GRR	RI-GRR	RI-GRR	RI-GRR
		-	PR-CP	PR-CP	PR-CP	PR-CP
		-	P-GPL	P-GPL	P-GPL	P-GPL
		-		FB-GW	FB-GW	FB-GW
		-		RI-GRM	RI-GRM	RI-GRM
		-			P-GPF	
		-			VC-GP	VC-GP
		-	ER- PE&SAR	ER- PE&SAR	ER- PE&SAR	ER- PE&SAR
		-		HR - RHB		
		-		VC-G&SRS	VC-G&SRS	VC-G&SRS
		-	ER-SEC	ER-SEC	ER-SEC	ER-SEC
		-	FB-Q&IW	FB-Q&IW	FB-Q&IW	FB-Q&IW
		-	HR-SIC	HR-SIC	HR-SIC	HR-SIC
		-	HR-SIA	HR-SIA	HR-SIA	HR-SIA
		-	HR-T	HR-T	HR-T	HR-T
		-	HR-SE	HR-SE	HR-SE	HR-SE
		-	HR-SB	HR-SB	HR-SB	HR-SB
		-			HR-RH&C	HR-RH&C
ANDRIANI spa (for more details see Table D2)	production and commercialisation, by own account and for third parties of biscuits, pasta and food products	-	G-PEIG	G-PEIG	G-PEIG	G-PEIG
		-	G-PSR	G-PSR	G-PSR	G-PSR
		-	RI-GRM	RI-GRM	RI-GRM	RI-GRM
		-	RI-GRR	RI-GRR	RI-GRR	RI-GRR
		-	PR-CP	PR-CP	PR-CP	PR-CP
		-	P-GPF	P-GPF	P-GPF	P-GPF
		-	P-GPL	P-GPL	P-GPL	P-GPL
		-			P-GPV	P-GPV
		-			ER-GC	ER-GC
		-				FB-GW
		-	HR - RHB	HR - RHB	HR - RHB	HR - RHB
		-	VC-G&SRS	VC-G&SRS	VC-G&SRS	VC-G&SRS
		-		ER- PE&SAR		ER- PE&SAR
		-	ER-SEC	ER-SEC	ER-SEC	ER-SEC
		-	P-SPL	P-SPL	P-SPL	P-SPL
		-	HR-RH&C	HR-RH&C	HR-RH&C	HR-RH&C
		-	HR-SB	HR-SB	HR-SB	HR-SB
		-	HR-T	HR-T	HR-T	HR-T
		-	HR-SE	HR-SE		
		-		FB-Q&IW	FB-Q&IW	FB-Q&IW
		-		HR-SIA	HR-SIA	HR-SIA
		-		HR-SIC	HR-SIC	HR-SIC
		-			RI-SRR	
CHIESI FARMACEUTICI spa (for more details see Table D3)	production of pharmaceutical products	-	G-PEIG	G-PEIG	G-PEIG	G-PEIG
		-		G-PSR	G-PSR	G-PSR
		-	FB-GW	FB-GW	FB-GW	FB-GW
		-		PR-CP	PR-CP	PR-CP
		-		P-GPF	P-GPF	P-GPF
		-		RI-GRM	RI-GRM	
		-		RI-GRR	RI-GRR	RI-GRR
		-		VC-GLW	VC-GLW	VC-GLW
		-		VC-G&SRS	VC-G&SRS	VC-G&SRS
		-		HR - RHB		HR - RHB
		-			ER- PE&SAR	ER- PE&SAR
		-	RI-SRR			
		-	ER-SEC	ER-SEC	ER-SEC	ER-SEC
		-	HR-SIA	HR-SIA	HR-SIA	HR-SIA
		-	HR-RH&C	HR-RH&C	HR-RH&C	HR-RH&C
		-	HR-SIC	HR-SIC	HR-SIC	
		-	HR-T	HR-T	HR-T	HR-T

Benefit Corporation	Business Activity	2017	2018	2019	2020	2021
		-		HR-SE		HR-SE
		-			HR-SB	
PARADISI srl (for more details see Table D4)	production of turned small parts and screws	G-PEIG	G-PEIG	G-PEIG	G-PEIG	G-PEIG
					G-PSR	G-PSR
		RI-GRR	RI-GRR	RI-GRR	RI-GRR	RI-GRR
				RI-GRM	RI-GRM	RI-GRM
					PR-CP	PR-CP
						FB-GW
						ER-GC
		VC-G&SRS	VC-G&SRS	VC-G&SRS	VC-G&SRS	VC-G&SRS
			ER- PE&SAR	ER- PE&SAR	ER- PE&SAR	ER- PE&SAR
				HR - RHB		
		ER-SEC	ER-SEC	ER-SEC	ER-SEC	ER-SEC
		RI-SRR	RI-SRR	RI-SRR	RI-SRR	
		HR-RH&C	HR-RH&C	HR-RH&C	HR-RH&C	HR-RH&C
		HR-SIC	HR-SIC	HR-SIC	HR-SIC	HR-SIC
		HR-T	HR-T	HR-T	HR-T	HR-T
				HR-SB		
					HR-SIA	HR-SIA
PERLAGE srl (*for more details see* Table D5)	production and sale of wines	-	VC-GP			
		-	FB-GW	FB-GW	FB-GW	FB-GW
		-	PR-CP	PR-CP	PR-CP	PR-CP
		-	P-GPF	P-GPF	P-GPF	P-GPF
		-	P-GPL	P-GPL	P-GPL	P-GPL
		-		ER-GC	ER-GC	ER-GC
		-	ER- PE&SAR	ER- PE&SAR		
		-	VC-G&SRS	VC-G&SRS	VC-G&SRS	VC-G&SRS
		-	HR-SIC	HR-SIC		
		-	ER-SEC	ER-SEC	ER-SEC	ER-SEC
		-	HR-RH&C	HR-RH&C	HR-RH&C	HR-RH&C
		-	HR-SB	HR-SB	HR-SB	HR-SB
OMAL spa (for more details see Table D6)	production of valves	G-PEIG	G-PEIG	G-PEIG	G-PEIG	G-PEIG
		G-PSR	G-PSR	G-PSR	G-PSR	
		ER-GC	ER-GC	ER-GC	ER-GC	ER-GC
		FB-GW	FB-GW	FB-GW	FB-GW	FB-GW
		RI-GRR	RI-GRR	RI-GRR	RI-GRR	RI-GRR
		RI-GRM	RI-GRM	RI-GRM	RI-GRM	
		PR-CP	PR-CP	PR-CP	PR-CP	
		VC-GP	VC-GP	VC-GP	VC-GP	
			P-GPF	P-GPF	P-GPF	
		VC-G&SRS	VC-G&SRS	VC-G&SRS	VC-G&SRS	
		ER- PE&SAR	ER- PE&SAR	ER- PE&SAR	ER- PE&SAR	
		ER-SEC	ER-SEC	ER-SEC	ER-SEC	ER-SEC
		HR-T	HR-T	HR-T	HR-T	HR-T
		FB-Q&IW	FB-Q&IW	FB-Q&IW	FB-Q&IW	
		HR-RH&C	HR-RH&C	HR-RH&C	HR-RH&C	
		HR-SIC		HR-SIC		
			HR-SB	HR-SB	HR-SB	HR-SB
						HR-SE
ZORDAN srl (for more details see Table D7)	production of furniture	FB-GW	FB-GW	FB-GW	FB-GW	FB-GW
		RI-GRR	RI-GRR	RI-GRR	RI-GRR	RI-GRR
		RI-GRM	RI-GRM	RI-GRM	RI-GRM	RI-GRM
		PR-CP	PR-CP		PR-CP	PR-CP
			P-GPF	P-GPF	P-GPF	P-GPF
			VC-GP	VC-GP	VC-GP	VC-GP
						ER-GC
		ER- PE&SAR	ER- PE&SAR	ER- PE&SAR	ER- PE&SAR	ER- PE&SAR
				VC-G&SRS	VC-G&SRS	VC-G&SRS
		ER-SEC	ER-SEC	ER-SEC	ER-SEC	ER-SEC
		FB-Q&IW	FB-Q&IW	FB-Q&IW	FB-Q&IW	FB-Q&IW

Benefit Corporation	Business Activity	2017	2018	2019	2020	2021
		HR-SIC	HR-SIC	HR-SIC	HR-SIC	HR-SIC
		HR-T	HR-T	HR-T	HR-T	HR-T
		HR-SB	HR-SB	HR-SB	HR-SB	HR-SB
		HR-SIA	HR-SIA		HR-SIA	HR-SIA
			HR-SE	HR-SE	HR-SE	HR-SE
AMAJOR srl (for more details see Table D8)	administrative and management consultancy	-		FB-GW	FB-GW	
		-		HR-T	HR-T	
		-		ER-SEC	ER-SEC	
AYMING ITALIA srl (for more details see Table D9)	administrative and management consultancy	-	G-PEIG	G-PEIG	G-PEIG	G-PEIG
		-				G-PSR
		-	ER-GC	ER-GC	ER-GC	ER-GC
		-	RI-GRM	RI-GRM	RI-GRM	RI-GRM
		-	RI-GRR	RI-GRR	RI-GRR	
		-	FB-GW	FB-GW	FB-GW	
		-	ER- PE&SAR	ER- PE&SAR	ER- PE&SAR	ER- PE&SAR
		-		VC-G&SRS	VC-G&SRS	
		-	HR-T	HR-T	HR-T	HR-T
		-	ER-SEC	ER-SEC	ER-SEC	
		-	HR-SE	HR-SE	HR-SE	
		-		HR-SIA	HR-SIA	HR-SIA
		-		HR-SIC	HR-SIC	HR-SIC
DE-LAB srl (for more details see Table D10)	communication agency	-		G-PEIG	G-PEIG	G-PEIG
		-			G-PSR	G-PSR
		-	RI-GRR	RI-GRR	RI-GRR	RI-GRR
		-	RI-GRM	RI-GRM	RI-GRM	RI-GRM
		-	VC-GP	VC-GP	VC-GP	VC-GP
		-		ER-GC	ER-GC	ER-GC
		-	ER- PE&SAR	ER- PE&SAR	ER- PE&SAR	ER- PE&SAR
		-	HR-RHB	HR-RHB	HR-RHB	HR-RHB
		-		VC-G&SRS	VC-G&SRS	VC-G&SRS
		-	ER-SEC	ER-SEC	ER-SEC	ER-SEC
		-	HR-SIA	HR-SIA	HR-SIA	HR-SIA
		-	HR-RH&C	HR-RH&C	HR-RH&C	HR-RH&C
		-	HR-T	HR-T	HR-T	HR-T
		-		RI-SRR		
HOSPITALITY TEAM srl (for more details see Table D11)	management consultancy	-	G-PSR	G-PSR	G-PSR	G-PSR
		-	FB-GW	FB-GW	FB-GW	FB-GW
		-			RI-GRM	RI-GRM
		-	VC-G&SRS	VC-G&SRS	VC-G&SRS	VC-G&SRS
		-	ER-SEC	ER-SEC	ER-SEC	ER-SEC
		-	RI-SRR			
		-	HR-RH&C	HR-RH&C	HR-RH&C	HR-RH&C
		-	HR-SB	HR-SB	HR-SB	HR-SB
		-	HR-SIA	HR-SIA	HR-SIA	
		-			HR-T	HR-T
IZMADE srl (for more details see Table D12)	management consultancy	-	G-PEIG	G-PEIG	G-PEIG	G-PEIG
		-			ER-GC	ER-GC
		-	ER-SEC	ER-SEC	ER-SEC	ER-SEC
NATIVA srl (for more details see Table D13)	sustainability consultancy	G-PEIG	G-PEIG	G-PEIG	G-PEIG	G-PEIG
			VC-GP	VC-GP		
			RI-GRM	RI-GRM		
						RI-GRR
						ER-GC
		ER- PE&SAR	ER- PE&SAR	ER- PE&SAR	ER- PE&SAR	ER- PE&SAR
				HR-RHB	HR-RHB	
		ER-SEC	ER-SEC	ER-SEC	ER-SEC	ER-SEC
		HR-SIA	HR-SIA	HR-SIA	HR-SIA	HR-SIA
		HR-SE		HR-SE	HR-SE	HR-SE
		HR-T	HR-T	HR-T	HR-T	HR-T
			HR-SB	HR-SB	HR-SB	HR-SB

Benefit Corporation	Business Activity	2017	2018	2019	2020	2021
			HR-SIC			
					HR-RH&C	HR-RH&C
			VC-SP	VC-SP		
PRIMATE srl (for more details see Table D14)	management consultancy	-	G-PEIG	G-PEIG	G-PEIG	G-PEIG
		-	FB-GW	FB-GW	FB-GW	FB-GW
		-	RI-GRM	RI-GRM	RI-GRM	RI-GRM
		-		RI-GRR	RI-GRR	RI-GRR
		-		VC-GP	VC-GP	VC-GP
		-		HR-RHB	HR-RHB	HR-RHB
		-				ER- PE&SAR
		-	ER-SEC	ER-SEC	ER-SEC	ER-SEC
		-		HR-SIA	HR-SIA	HR-SIA
		-		HR-RH&C	HR-RH&C	HR-RH&C
		-		PR-SO	PR-SO	PR-SO
VENTITRENTA srl (for more details see Table D15)	sustainability consultancy	-			G-PEIG	G-PEIG
		-	RI-GRR	RI-GRR	RI-GRR	RI-GRR
		-	RI-GRM	RI-GRM	RI-GRM	RI-GRM
		-	FB-GW	FB-GW	FB-GW	FB-GW
		-			VC-GP	VC-GP
		-	HR-RHB	HR-RHB	HR-RHB	HR-RHB
		-	VC-G&SRS	VC-G&SRS	VC-G&SRS	VC-G&SRS
		-			ER- PE&SAR	ER- PE&SAR
		-	HR-T	HR-T	HR-T	HR-T
		-			HR-SIA	HR-SIA
		-			HR-SB	HR-SB
WAY2GLOBAL srl (for more details see Table D16)	translation and interpreting services	G-PEIG	G-PEIG	G-PEIG	G-PEIG	G-PEIG
					G-PSR	G-PSR
		FB-GW	FB-GW	FB-GW	FB-GW	FB-GW
			RI-GRR	RI-GRR	RI-GRR	RI-GRR
			ER-GC	ER-GC		
				RI-GRM	RI-GRM	
			ER- PE&SAR	ER- PE&SAR	ER- PE&SAR	ER- PE&SAR
			HR-RHB	HR-RHB	HR-RHB	HR-RHB
			VC-G&SRS	VC-G&SRS	VC-G&SRS	VC-G&SRS
			ER-SEC	ER-SEC	ER-SEC	ER-SEC
			P-PPD	P-PPD	P-PPD	P-PPD
			VC-SS	VC-SS	VC-SS	VC-SS
			HR-SB	HR-SB	HR-SB	HR-SB
			HR-SE	HR-SE	HR-SE	HR-SE
			HR-SIA	HR-SIA	HR-SIA	HR-SIA
			HR-SIC	HR-SIC	HR-SIC	HR-SIC
			HR-RH&C	HR-RH&C	HR-RH&C	HR-RH&C
			HR-T	HR-T	HR-T	HR-T
GREENAPES srl (for more details see Table D17)	hardware and software consultancy services		FB-GW	FB-GW	FB-GW	FB-GW
		ER- PE&SAR	ER- PE&SAR	ER- PE&SAR	ER- PE&SAR	ER- PE&SAR
		ER-SEC	ER-SEC	ER-SEC	ER-SEC	ER-SEC
MONDORA srl (for more details see Table D18)	production of software				G-PEIG	G-PEIG
			VC-GP			
				RI-GRM	RI-GRM	RI-GRM
				RI-GRR	RI-GRR	RI-GRR
		HR-RHB	HR-RHB	HR-RHB	HR-RHB	HR-RHB
		ER- PE&SAR	ER- PE&SAR	ER- PE&SAR	ER- PE&SAR	ER- PE&SAR
			VC-G&SRS		VC-G&SRS	
		HR-SIC				
		HR-RH&C				
		ER-SEC	ER-SEC	ER-SEC	ER-SEC	ER-SEC
		HR-SIA	HR-SIA	HR-SIA	HR-SIA	HR-SIA
		HR-SE	HR-SE	HR-SE	HR-SE	HR-SE
			PR-SO			
			HR-SB	HR-SB	HR-SB	HR-SB
			HR-T	HR-T	HR-T	

Benefit Corporation	Business Activity	2017	2018	2019	2020	2021
				FB-Q&IW	FB-Q&IW	
DERMOPHISIOLOGIQUE S.R.L. (for more details see Table D19)	commercialisation of cosmetics	RI-GRM	-	RI-GRM	RI-GRM	RI-GRM
		P-GPF	-	P-GPF	P-GPF	P-GPF
			-	VC-GP	VC-GP	VC-GP
			-	ER-GC	ER-GC	ER-GC
		ER- PE&SAR	-	ER- PE&SAR		
		VC-G&SRS	-	VC-G&SRS	VC-G&SRS	VC-G&SRS
		ER-SEC	-	ER-SEC	ER-SEC	ER-SEC
		HR-SIC	-	HR-SIC	HR-SIC	HR-SIC
		HR-RH&C	-	HR-RH&C	HR-RH&C	HR-RH&C
		HR-T	-	HR-T	HR-T	HR-T
FARMACIE FIORENTINE spa (for more details see Table D20)	commercialisation of pharmaceutical products	-	ER- PE&SAR	ER- PE&SAR		
		-	ER-SEC	ER-SEC	ER-SEC	ER-SEC
		-		VC-SS	VC-SS	VC-SS
FORGREEN spa (for more details see Table D21)	commercialisation of photovoltaic systems	-	G-PEIG	G-PEIG	G-PEIG	G-PEIG
		-		G-PSR	G-PSR	G-PSR
		-	ER- PE&SAR	ER- PE&SAR	ER- PE&SAR	ER- PE&SAR
		-	ER-SEC	ER-SEC	ER-SEC	ER-SEC
		-		HR-SIC	HR-SIC	HR-SIC
		-			HR-SE	HR-SE
		-			HR-SIA	HR-SIA
		-				HR-T
SAVE THE DUCK spa (for more details see Table D22)	commercialisation of clothing	-	G-PEIG	G-PEIG	G-PEIG	G-PEIG
		-	G-PSR	G-PSR	G-PSR	G-PSR
		-	ER-GC	ER-GC	ER-GC	ER-GC
		-	FB-GW	FB-GW	FB-GW	FB-GW
		-	VC-GP	VC-GP	VC-GP	VC-GP
		-	P-GPV	P-GPV	P-GPV	P-GPV
		-		RI- GRM		
		-			RI-GRR	RI-GRR
		-				P-GPF
		-	VC-G&SRS	VC-G&SRS	VC-G&SRS	VC-G&SRS
		-		ER- PE&SAR	ER- PE&SAR	ER- PE&SAR
		-	ER-SEC	ER-SEC	ER-SEC	ER-SEC
		-	HR-SIC	HR-SIC	HR-SIC	HR-SIC
		-	HR-SE	HR-SE	HR-SE	HR-SE
		-	HR-RH&C	HR-RH&C	HR-RH&C	HR-RH&C
		-	HR-T	HR-T	HR-T	HR-T
		-			HR-SIA	HR-SIA
SAGELIO srl (for more details see Table D23)	development and production of a charging infrastructure for zero-emission vehicles	-			G-PEIG	G-PEIG
		-	RI-GRR	RI-GRR	RI-GRR	RI-GRR
		-			ER-GC	ER-GC
		-				VC-GLW
		-	ER- PE&SAR	ER- PE&SAR	ER- PE&SAR	ER- PE&SAR
		-		ER-SEC	ER-SEC	ER-SEC
SLOW FOOD PROMOZIONE srl (for more details see Table D24)	organization of food and wine events	-	FB-GW	FB-GW	FB-GW	-
		-	RI- GRM	RI- GRM	RI- GRM	-
		-	RI-GRR	RI-GRR	RI-GRR	-
		-		VC-GP		-
		-	HR-RHB			-
		-	ER-SEC	ER-SEC	ER-SEC	-
		-	HR-SIA	HR-SIA	HR-SIA	-
		-			HR-SB	-
EVOLVERE spa (for more details see Table D25)	production and sale of electricity from renewable sources	G-PEIG	G-PEIG	G-PEIG	G-PEIG	G-PEIG
		G-PSR	G-PSR	G-PSR	G-PSR	G-PSR
						FB-GW
						VC-GP
						RI- GRM
						ER- PE&SAR
		HR-SIA	HR-SIA	HR-SIA	HR-SIA	HR-SIA
		HR-SE	HR-SE	HR-SE	HR-SE	HR-SE

Benefit Corporation	Business Activity	2017	2018	2019	2020	2021
		HR-RH&C	HR-RH&C	HR-RH&C	HR-RH&C	HR-RH&C
		HR-T	HR-T			HR-T
				HR-SB		
					ER-SEC	ER-SEC
					HR-SIC	HR-SIC
			ER- PE&SAR			
PEOPLE MANAGEMENT LAB srl (for more details see Table D26)	training activity	HR-SIA	HR-SIA	HR-SIA	HR-SIA	HR-SIA
			ER-SEC	ER-SEC	ER-SEC	ER-SEC
				HR-SIC		HR-SIC
				HR-SE		
				HR-T	HR-T	HR-T

4.5 Discussion

The conducted content analysis of BCs' sustainability reporting documents has generated knowledge in terms of sustainable practices through which BCs achieve their sustainability goals and pursue their common benefit objectives.

The sustainable practices identified through the content analysis of BCs' sustainability documents have been classified in the four impact areas (governance, workers, other stakeholders, and environment) envisaged by Italian BC legislation. The classification revealed that "provide employees with professional training", "introduce smart working", "pursue of gender equality in hiring", "collect employees' feedback" are very common practices in the impact area Workers, demonstrating the high level of attention that BCs have towards employees; in the impact area Other stakeholders the most common business practices is "collaborate and support (through donations) non-profit associations that operate to support disadvantaged categories or vulnerable people. In the impact area Environment, practices related to the adoption of environmentally friendly inputs, resources, raw materials, consumables, as well as practices related to the eco-friendly and rational use of resources are very common practices adopted by BCs. Social practices (e.g., "purchase raw materials/consumables or products for sale with Fair Trade certification") are also included in the impact area Environment. In the impact area Governance, the practices "map stakeholders and engage stakeholders (e.g., through virtual platforms, focus groups or interviews) to conduct a participatory materiality analysis and impact assessment" and "prepare ethical code" are the most adopted.

Although some BCs adopt a purely qualitative approach to report their sustainability performance, the conducted analysis has identified KPIs that BCs use to measure their environmental and social impacts. The indicators may be useful also to other companies to measure their sustainability performance.

The conducted analysis reveals that Benefit Corporations adopt both environmental and social practices (with a slight prevalence of social practices over environmental ones) to pursue their dual purpose; by integrating sustainability in their value proposition and in the business processes through which they achieve goals, benefit corporations can be considered a promising business form to effectively pursue sustainability and sustainable development.

The knowledge on sustainable practices generated through the content analysis of BCs' sustainability reporting documents has been exploited to derive sustainable process patterns, that provide practice-based and reusable solutions to design and redesign sustainable business processes. A total number of thirty sustainable process patterns (ten green process patterns, 15 social process patterns, three hybrid process patterns and two governance process patterns) have been identified.

The identified patterns enlarge the existing list of green and social process patterns provided by academic literature in the field of S-BPM. Some new green patterns have been identified in this study

(i.e., Green purchasing, Green workplace, Circular production, Green logistic and warehousing, Green product labelling). Other green patterns (i.e., Green product feature, Green product variant and Green resource replacement) already existed in the literature, although with an identification name slightly different from those adopted in this study (for instance, the green pattern Green product feature was called green feature, and it was not possible to understand that the pattern refers to the product' s features). All these green patterns, together with the Green compensation pattern (that already existed in the literature) have been enriched with additional environmental practices derived from the sustainable practices implemented by BCs. No evidence of some existing green patterns (process automation, outsourcing and insourcing) has been identified in this study.

Also, social process patterns have been added to those already proposed in the academic literature. Social product variant, Social bonding, Social engagement, Social selling, Social purchasing, Training, Socially responsible hiring and careers, Participatory product/service design are new social patterns identified in the study. Social pattern as Social external compensation, Social internal compensation, Social internal alternative, and Social resources replacement already existed in the literature and have been enriched with more social practices. A pattern (Social-/human-centered individualization) referred to the adoption of practices for the integration of people with handicaps was replaced with the more complete social pattern called Quality and inclusive workplace which includes all those practices aimed to make the workplace more inclusive in terms of consideration of human-specific needs and different sensitivity. Additionally, some governance patterns that had not been detected in the existing academic literature, have been identified. Differently form green and social pattern proposed by existing academic literature, all sustainable process patterns derived in this study provide KPIs to measure the environmental and social impacts of each practice included in the patterns.

Additionally, the relationships between sustainable process patterns and business processes they refer, as well as the relationships between sustainable process patterns and the stakeholders to whom they refer have been identified. According to the business process that the company intends to make more environmentally and socially sustainable, the company may select the appropriate sustainable process patterns to redesign the business process; similarly, according to the stakeholders the company intends to address, it can choose the appropriate sustainable process patterns. For instance, a company that intends to redesign the sale process making it more sustainable, may adopt one or more social process patterns (e.g., social selling, social external compensation) as well as one or more green process patterns (e.g., green product labelling, green compensation). As to stakeholders, a company that wants to achieve sustainability by addressing local community, may adopt a set of sustainable process patterns which include practices referred to such a stakeholder (e.g., social external compensation, social selling, socially responsible hiring and careers).

Also, the evolution over time in the adoption of sustainable process patterns has been investigated on the basis of a sample of 26 BCs that published at least four sustainability documents. The analysis over time has revealed as BCs tend to increase the number of patterns adopted over the years, demonstrating an increasing attention towards sustainability. Also, some indications for companies that want to undertake a sustainable transformation have been provided; for instance, the analysis of the evolution of sustainable process patterns over time has revealed that companies first adopt green process patterns such as green resource management, circular production, green purchasing to make their internal processes more environmentally sustainable and, in a second moment, implement the green compensation pattern to compensate the residual environmental impact of their business processes.

The results related to the evolution over time of sustainable process pattern are based on a limited number of companies (26 BCs) and are not generalizable. Also, such results have been achieved by conducting a qualitative content analysis of BCs' sustainability reporting documents that, as already discussed, are often characterised by a non-uniformity in the reporting of sustainability practices over the years. However, the obtained results could be adopted as hypothesis to be tested by surveying and interviewing a larger sample of BCs.

4.6 Conclusions

In this study, a content analysis of Benefit Corporations' sustainability reporting documents has been conducted to identify sustainable practices that Benefit Corporations perform to achieve their dual purpose. The study results reveal that benefit corporations implement both social and environmental practices to achieve their purpose. In particular, a set of thirty sustainable (green, social, hybrid and governance) process patterns - describing practical solutions to analyse, design and redesign sustainable business processes - has been developed.

By analysing sustainability practices that benefit corporations implement, the study contributes to shed some light on how such innovative business form pursues sustainability goals, addressing a literature gap, namely the lack of empirical studies focusing on practices through which benefit corporations make their business processes environmentally and socially sustainable and on their impact assessment. The identified sustainable practices have constituted the practical basis for the derivation of sustainable process patterns.

This study also contributes to advance knowledge in the field of Sustainable Business Process Management, the research stream that provide methods, techniques, and approaches to manage business processes in a sustainable manner. Some knowledge gaps indeed exist in the academic literature on S-BPM. As discussed in Section 2.4.2 some scholars have already proposed pattern-based approach to embed sustainability in the management of business processes; however, the proposed sustainable process patterns lack performance indicators, they do not adequately present the relationships with business processes they intend to (re)redesign, as well as with the stakeholders to whom they refer; also, the derivation process of the patterns is not clear and properly described in the literature.

Sustainable process patterns identified in this study are based on a broader practical experience, as they have been derived from the content analysis of sustainability reporting documents published by a sample of 239 Italian Benefit Corporations. They also include the relationships with business processes that each sustainable pattern is able to (re)design and with the stakeholders they refer; the identified sustainable process patterns also provide companies with a set of indicators to measure the sustainability performance of their business processes.

Sustainable process patterns may be adopted to add the sustainability dimension to the business process design space, that Gross et al. (2021) have suggested as method to systematically support the business processes redesign, the value-added phase of BPM that lacks adequate methods and approaches to develop the to-be process alternatives and create the new redesigned to-be processes. Such a method includes some dimensions (e.g., customers, product/services, organization, technology) to be considered in the business processes' redesign, neglecting the sustainability of business processes.

Such an approach may also support the explorative BPM i.e., the approach that explores opportunity points and translate them into process improvements (Kohlborn, 2014).

As to managerial implications, the study provides companies with a handbook of sustainable practices, in the form of sustainable process patterns, that companies (not only BCs), and process analysts may adopt to analyse business processes from a sustainability perspective, and to design and redesign environmentally and socially sustainable business processes. According to the business processes that companies intend to make more sustainable, and the stakeholders to whom intend to address, the handbook allows to select the appropriate sustainable patterns to be implemented. The study also provides some indications related to the adoption of sustainable process patterns along time, so supporting companies in the sustainable transformation of their business processes.

This study is not without limitations. A first limitation refers to the availability of sustainability reporting documents on which the study is based. Indeed, only sustainability reporting documents published by Italian benefit corporations have been considered; also, such documents were searched and collected at the beginning of 2023, when only documents up to 2021 (and few documents related to 2022) were publicly available on companies' websites. This implies that some other sustainability reporting documents useful to identify sustainability practices may have been published in more recent period.

Additionally, the study explored BCs' sustainability practices by exclusively conducting a content analysis of secondary data (sustainability reporting documents). In this manner, some aspects cannot be in-depth investigated. For instance, the content analysis of sustainability reporting documents is not able to understand why a sustainable practice reported in one year is no longer reported in the sustainability documents published in the subsequent years. An analysis based on primary data and qualitative methodologies such as interviews and surveys to triangulate data and more in-depth investigate the sustainable practices' evolution over time is therefore required.

Future research will indeed include the investigation of BCs sustainable practices on the basis of interviews and surveys submitted to a larger sample of companies in order to extend the knowledge on sustainable practices they implement, as well as to better understand how such practices evolve over time. Additional studies to assess the alignment between the sustainable practices implemented by BCs and the common benefit objectives they declare are also needed.

Also, additional studies to refine the identified set of KPIs to measure environmental and social performance of business processes will be conducted.

The identified sustainable process patterns are general-purpose, as they have been derived from the analysis of Benefit Corporations that operate in several different productive sectors (e.g. manufacturing, consultancy, professional activities); indeed, sustainable process patterns include sustainability practices that are not applicable to all sectors and productive activities (e.g., the practice "purify the water used during production processes and reuse it for activities that do not require specific quality requirements" included in the green pattern Circular production can be adopted only by manufacturing companies). More analysis to derive a set of sustainable process patterns referred to specific sectors and productive activities are needed, in order to provide companies with a more specific tools to (re)design sustainable business processes.

Future research may also regard the investigation of sustainable practices performed by companies that are not benefit corporation but pursue sustainability goals. Conducting the same analysis on a sample of other sustainable companies could eventually confirm the obtained results and provide additional knowledge to further enrich the identified sustainable process patterns.

Conclusions

The goal of the present dissertation is to identify sustainable process patterns to which companies may refer to implement a sustainable transformation of the business processes carried out. To do so, the study focused on Benefit Corporations, innovative hybrid business forms that pursue profits and sustainability goals and are required to annually publish a sustainability reporting document to report their impacts and the achieved sustainability performance.

A qualitative content analysis of 328 Benefit Corporations' sustainability reporting documents has been carried out to identify sustainable practices that Benefit Corporations implement to achieve their sustainability goals. Such practices have constituted the practical base for the derivation of sustainable process patterns. A set of thirty sustainable process patterns, namely reusable and practice-based sustainable solutions to which companies (not only Benefit Corporations) may refer to environmentally and socially analyse and redesign their business processes, has been derived. The derived sustainable process patterns have been classified in green, social, hybrid and governance process patterns, according to the dimension of sustainability they refer, and characterized by adopting the CATWOE, a tool suggested to succinctly describe a problematic situation.

Ten green process patterns have been identified, namely Green Compensation, Green workplace, Green resources management, Green resources replacement, Circular production, Green product features, Green product variant, Green product labelling, Green logistic and warehousing, Green purchasing.

Fourteen social process patterns have been identified, namely Social external compensation, Quality and inclusive workplace, Socially responsible hiring and careers, Social internal alternative, Social internal compensation, Training, Social engagement, Social bonding, Social outsourcing, Participatory product/service design, Social product variant, Social product labelling, Social purchasing, and Social selling.

Public environmental and social awareness raising, Responsible human behaviour, and Green and socially responsible suppliers are hybrid process patterns. Participatory, ethical and inclusive governance, and Participatory sustainability reporting are governance patterns.

The study has some theoretical implications. The results of systematic literature reviews conducted on Sustainable Business Process Management and on Benefit Corporations contribute to shed the light on the state of the art in these fields, highlighting literature gaps to be addressed and solved.

The results of the content analysis of Benefit Corporations' sustainability reporting documents and the derived sustainable process patterns contribute to advance knowledge both in the field of Sustainable Business Process Management and in the field of Benefit Corporations.

The study contributes to advance knowledge in the field of Sustainable Business Process Management. Green and social process patterns have already proposed by scholars in the field of S-BPM; however, the existing patterns presented several critical points: they lacked performance indicators, they did not adequately present the relationships with business processes they intended to (re)redesign, as well as with the stakeholders to whom they referred. Finaly, the derivation process of patterns was not properly described in the literature.

In the study some new green, social, hybrid and governance process patterns have been identified; some other existing (green and social) patterns have been refined and improved through the addition of sustainable practices derived from the analysis of sustainable practices implemented by Benefit

Corporations. Sustainable process patterns identified in this study are based on a broader practical experience, as they have been derived from the content analysis of sustainability reporting documents published by a sample of 239 Italian Benefit Corporations. Additionally, by adopting the lens of process theory, the identified sustainable process patterns have been related with business processes they are able to (re)design; also, the stakeholders to whom they refer are included in the identified sustainable process patterns.

The study results also explored the sustainability (both environmental and social) practices Benefit Corporations implement to pursue their dual purpose; such corporations can be considered a promising business form to effectively pursue sustainability and sustainable development. The conducted analysis of sustainable practices implemented by Benefit Corporations contributes to address a literature gap, related to the absence of academic empirical studies that systematically and objectively analyse benefit corporations from the perspective of sustainable practices and business processes they implement to achieve their sustainability goals.

As to managerial implications, sustainable process patterns represent a valid approach to analyse, design and redesign sustainable business processes. By adopting sustainable process patterns, process analysts may analyse the as-is processes and detect critical points in terms of sustainability; also, process analysts may adopt sustainable process patterns to identify improvement opportunities to improve and redesign business processes, so obtaining more environmentally and socially sustainable business processes. The results of the dissertation provide companies, organizations and process analysts with a handbook of sustainable practices (in the form of sustainable process patterns) that can be adopted to analyse, design and redesign sustainable business processes. According to the business process that the company intends to make more environmentally and socially sustainable, the company may select the appropriate sustainable process patterns; similarly, according to the stakeholders the company intends to address, it can choose the appropriate sustainable process patterns. KPIs to measure the sustainability performance of business processes are provided in each sustainable pattern. Also, some indications related to the adoption of sustainable process patterns in the time are provided, so supporting companies in the sustainable transformation of their business processes.

A first limitation of this study refers to the search query adopted to retrieve academic contributions on S-BPM and Benefit Corporations; the identified keywords and the applied filters may have excluded some potential studies able to answer the posed review questions.

A limitation of this study refers to the availability of the analysed data. Indeed, only sustainability reporting documents published by Italian Benefit Corporations have been analysed; also, such documents are not very recent, as they have been published up to 2021. Some other sustainability reporting documents useful to generate knowledge on sustainable practices may have been published later. Additionally, this dissertation has adopted a single qualitative methodology – the content analysis – to generate knowledge and address the research questions; the methodology, although objectively and systematically analyses the content of sustainability reporting documents, is not always able to in-depth investigate some aspects of sustainability practices (for instance, their evolution over time).

Future research will deal with such limitations. A further investigation of sustainable practices implemented by Benefit Corporations will be conducted by collecting primary data, for instance through surveys and interviews. Also, a more in-depth analysis of sustainable practices implemented by Benefit Corporations, by analysing the alignment and the coherence of sustainable practices with the declared common benefit objectives, is needed. Further studies may be conducted to derive a set of

sustainable process patterns specifically referred to particular productive sectors, as the sustainable process patterns identified in this study are general-purpose (not all sustainable practices included in each sustainable process pattern are applicable to all productive sectors).

Future research will also include the analysis of sustainable practices implemented by other sustainable companies, not necessarily Benefit Corporations. Repeating the analysis on another sample of companies may be useful to eventually confirm the results obtained in this dissertation, as well as to provide additional knowledge to further extend the identified sustainable process patterns.

Appendix

Table A – Sustainable business process management SLR – classification and analysis of the dataset of academic studies

ID	Document type	Sustainability dimension	Type of study	Study aim	Methodology	Strategy	Governance	Methods	Information technology	People	Culture
1	Conference paper	Environmental	Position paper	to discuss the need to enrich existing sustainability-oriented process design methods by considering additional information form methods as life cycle assessment							
2	Article	Environmental	Conceptual	to develop a Green BPM maturity model based on process capabilities	survey	✓	✓			✓	✓
3	Article	Environmental	Conceptual	to analyse the effect of organization location, size, sector and competitiveness on Green BPM adoption; to detect which capabilities contribute more to the successful adoption of Green BPM	survey	✓	✓			✓	✓
4	Conference Paper	Environmental and social	Position paper	to develop a modelling method for Sustainable Business Process Management, which is based on life cycle thinking and integrates Organizational Life Cycle Assessment concepts							
5	Article	Environmental	Review	to evaluate the current state of Green BPM research, to find a valid definition of Green BPM, and identify differences between Green and conventional BPM	Systematic literature review						
6	Article	Environmental	Review	to explore BPM contributions to environmental sustainability (ES), with a focus on environmental performance indicators (EPIs) as well as relevant organizational factors related to ES and BPM	Systematic literature review						
7	Article	Environmental	Review	to systematic mapping study on Green BPM to evaluate five attributes of the research area: scope, discipline, accountability, researchers and quality control	Systematic literature review						
8	Article	Environmental	Review	to evaluate how Green BPM has evolved; identify the impact of the incorporation of Green aspects into the BPM lifecycle stages	Systematic literature review						
9	Conference paper	Social	Practical	to derive socially business process patterns, i.e., proven general solutions for achieve social sustainability	Literature review and experts' interviews; pattern approach			✓			

ID	Document type	Sustainability dimension	Type of study	Study aim	Methodology	Strategy	Governance	Methods	Information technology	People	Culture
10	Conference Paper	Environmental	Practical	to develop a novel approach for optimizing ecological footprint of business processes and design and implement an extension of ARIS BPM platform so as it can detect ecological shortcomings and foster improvement of the ecological footprint of a business process	Pattern approach and compliance checking			✓			
11	Conference Paper	Environmental and social	Review	to develop a taxonomy of approaches and principles for modelling sustainable business processes	Rigorous literature review						
12	Conference Paper	Environmental	Conceptual	to explore the concept of circular economy to concretize environmental sustainability at organizational level	Literature review, expert panels and case studies						
13	Conference Paper	Environmental	Position Paper	to classify performance measurements from the perspective of sustainability							
14	Conference Paper	Environmental	Practical	to provide a process modelling convention that align process models with Green BPM objectives				✓			
15	Conference Paper	Environmental	Practical	to incorporate gamification and develop a BPMS-Game, a tool that combines the concepts of gamification, sustainability, and business processes encouraging users of BPMS platforms to be more environmentally friendly in their daily work		✓	✓	✓	✓	✓	
16	Conference Paper	Environmental	Position Paper	to raise the discussion about how BPM can be extended to consider the direct and indirect effects of the business processes in the environmental, economic and social dimensions of sustainability							
17	Conference Paper	Environmental	Practical	to introduce the concept of sustainability patterns for the improvement of existing processes or for the design of new processes with consideration of ecological goals such as the reduction of resource consumption during the executing of administrative processes	Process models analysis and interviews Pattern approach			✓			
18	Conference Paper	Environmental	Review	to review existing literature on Green BPM and identify capabilities required in the adoption of Green BPM	Structured literature review						

ID	Document type	Sustainability dimension	Type of study	Study aim	Methodology	Strategy	Governance	Methods	Information technology	People	Culture
19	Conference Paper	Environmental	Practical	to introduce the concept of Ecological Workflow Patterns as a tool for decision-support in the domain of Green BPM	Process models analysis and literature review			✓			
20	Conference Paper	Environmental	Practical	to develop strategies and tools for raising collective awareness and supporting the direct involvement of all stakeholders in the analysis and redesign of processes from environmental perspective by introducing Collaborative Green BPM	Case study and interviews	✓			✓	✓	
21	Article	Environmental, social and economic	Conceptual	to create a conceptual proposal to guide the promotion and evolution of sustainability performance measurement from the perspective of business process management	Literature review	✓	✓				
22	Conference Paper	Environmental	Practical	to introduce the simulation approach in Green BPM	Case study			✓			
23	Conference Paper	Environmental	Review	to understand how BPM research contribute to environmental sustainability	Systematic literature review						
24	Conference Paper	Environmental	Conceptual	to discuss capabilities that organization should have to take advantage from Green BPM and develop a readiness model for Green BPM	Literature review	✓	✓	✓			✓
25	Conference Paper	Environmental	Practical	to provide a method for detect energy consumption of administrative business processes	Case study			✓	✓		
26	Conference Paper	Environmental	Review	to examine the literature concerning Green IS and Green BPM and develop multidimensional framework to guide future research	Structured literature review						
27	Book	Environmental	-	to examine the role of business processes and the contribution that the management of business processes can play for creating an environmentally sustainable society							
28	Conference Paper	Environmental	Practical	to propose a suitable methodology for the management and optimization of GHG emissions at business process level	Case study			✓			
29	Conference Paper	Environmental	Practical	to develop a method that guides stakeholders through the process of identifying suitable solutions, i.e., patterns, which properly fit to their domain of interest				✓			

ID	Document type	Sustainability dimension	Type of study	Study aim	Methodology	Strategy	Governance	Methods	Information technology	People	Culture
30	Conference Paper	Environmental	Practical	to propose an approach that supports stakeholders analysing their automated business processes with respect to their environmental impact and green business process reengineering				✓			
31	Conference Paper	Environmental	Conceptual	to provide a conceptualization of environmentally sustainable business processes and discuss the role of information system to make processes more environmentally sustainable	Literature analysis			✓			
32	Conference Paper	Environmental	Conceptual	to detect which process modelling languages and software tools are suitable for monitoring energy efficiency of business processes	Systematic literature review and criteria check list		✓	✓			
33	Conference Paper	Environmental	Review	to investigate how strongly the topic of sustainability is reflected in the BPM research	Structured literature review						
34	Book Chapter	Environmental	conceptual	to outline a set of methods for identifying the environmental impact of a business activity or a process				✓			
35	Book Chapter	Environmental	Practical	to propose innovative approaches for process modelling and analysis able to document and measure the carbon emissions producing during the execution of business processes				✓			
36	Book Chapter	Environmental	Conceptual	to explore the contributions that business process management can provide to creating environmentally sustainable organizations.							
37	Book Chapter	Environmental	Practical	to investigate both organizational and technological opportunities and challenges of Green BPM for the improvement of the sustainability of business activities				✓			
38	Article	Environmental	Practical	to propose the application of green process patterns to support developers in the ecological adaptation of cloud applications and services	Pattern approach			✓			
39	Conference Paper	Environmental	Practical	to develop a framework for modeling, measuring, analyse and reporting GHG emissions of business processes	Literature review and GHG Protocol analysis			✓			

ID	Document type	Sustainability dimension	Type of study	Study aim	Methodology	Strategy	Governance	Methods	Information technology	People	Culture
40	Conference Paper	Environmental	Conceptual	to investigate and identify differences and commonalities of green BPM compared to conventional BPM	Literature review	✓	✓				
41	Conference Paper	Environmental	Practical	to extend the previous work on ABNOBA framework by introducing a machinery for semi-automated process redesign				✓	✓		
42	Conference Paper	Environmental	Practical	to propose patterns which describe good solutions for green business process design	Pattern approach			✓			
43	Conference Paper	Environmental	Conceptual	to discuss opportunities and challenges of Green BPM based on conceptual considerations							
44	Article	Environmental	Position Paper	to discuss the reengineering of a green business from its process viewpoint				✓		✓	
45	Article	Environmental	Practical	to develop a framework for carbon-aware process management	Case study			✓			
46	Conference Paper	Environmental	Practical	to investigate how process can be informed with the associated emission impact				✓	✓		
47	Conference Paper	Environmental	Practical	to show how BPMN modelling, generally focus on functional aspects, can be enriched and further informed with qualitative annotation such as emission annotation; i				✓	✓		

Table B. Benefit corporation SLR – classification and analysis of the dataset of academic studies

ID	Type of Study	Methodology	Geographical location	BC & economy conception/ corporate theory	Strengths and weaknesses	Motivations and enabling factors	BC model adoption	Purpose/ common benefit	Accountability for what	Accountability to whom	Transparency
1	empirical	content analysis	Italy					✓			
2	theoretical		Italy	✓							
3	empirical	single case study (interviews and company documentation analysis)	USA				✓				
4	empirical	survey	Italy							✓	✓
5	empirical	content analysis, questionnaire, and interviews	Italy				✓	✓		✓	✓
6	empirical	content analysis	Italy								✓

ID	Type of Study	Methodology	Geographical location	BC & economy conception/ corporate theory	Strengths and weaknesses	Motivations and enabling factors	BC model adoption	Purpose/ common benefit	Accountability for what	Accountability to whom	Transparency
7	empirical	textual analysis	Italy					✓			
8	empirical	single case study (interviews and company documentation analysis)	USA				✓				
9	empirical	content analysis	Italy								✓
10	empirical	content analysis	Italy					✓			
11	empirical	single case study	Italy						✓	✓	
12	empirical	case study	Italy				✓				
13	theoretical		USA		✓						
14	empirical	ordinary least squares regression	Italy						✓		
15	empirical	single case study	Italy				✓		✓		
16	empirical	qualitative - best practices from case study	USA						✓		✓
17	empirical	case study	Italy								✓
18	empirical	survey	USA				✓				
19	theoretical		USA		✓						
20	theoretical			✓							
21	empirical	content analysis	USA					✓		✓	✓
22	empirical	single case study (interviews and company documentation analysis)	USA				✓				
23	theoretical		USA		✓						
24	theoretical				✓						
25	theoretical			✓							
26	theoretical					✓					
27	empirical	content analysis	USA					✓	✓		✓
28	theoretical			✓	✓						
29	theoretical		USA		✓						

ID	Type of Study	Methodology	Geographical location	BC & economy conception/ corporate theory	Strengths and weaknesses	Motivations and enabling factors	BC model adoption	Purpose/ common benefit	Accountability for what	Accountability to whom	Transparency
30	theoretical		USA	✓							
31	theoretical		USA			✓					
32	theoretical			✓							
33	theoretical		USA		✓						
34	theoretical		USA		✓						
35	theoretical		USA	✓	✓	✓					

Table C – Benefit corporations include in the analysed sample

Company Name	Activity	Region	Native Benefit	Year of starting activity as a BC	Cert Bcorp	Publication Year						Adopted Reporting Standard	Number of documents in the sample
						2022	2021	2020	2019	2018	2017		
M - ATTIVITÀ PROFESSIONALI, SCIENTIFICHE E TECNICHE													
ATTIVITÀ DI DIREZIONE AZIENDALE E DI CONSULENZA GESTIONALE													
ACUBE SOCIETÀ BENEFIT S.R.L.	consulenza gestionale	Lombardia	no	2020	no		RI	RI					1
AMAJOR S.R.L. SOCIETÀ BENEFIT	consulenza amministrativa e gestionale	Veneto	si	2017	no			RI	RI	RI	RI	BIA	4
ASHTART CONSULTANCY S.R.L. SOCIETÀ BENEFIT	agenzia di comunicazione	Veneto	no	2021	no		RI					BIA SDG Action Manager	1
AYMING ITALIA S.R.L. SOCIETÀ BENEFIT	consulenza amministrativa e gestionale	Lombardia	no	2018	no		RS	RS	RS	RS		BIA SDG Action Manager	4
B HEROES S.R.L. SOCIETÀ BENEFIT	consulenza amministrativa e gestionale	Lombardia	si	2017	no		RI	RI	RI			BIA	1
BOTTEGA FILOSOFICA S.R.L. SOCIETÀ BENEFIT	consulenza amministrativa e gestionale	Lazio	no	2019	si		RI	RI	RI			BIA-SABI	1
BRAINSCAPITAL S.R.L. SOCIETÀ BENEFIT	consulenza gestionale	Piemonte	no	2020	no		RI	RI				BIA	1
CARIPLO FACTORY S.R.L. SOCIETÀ BENEFIT	consulenza gestionale in ambito open innovation e responsabilità sociale d'impresa	Lombardia	no	2021	no		RI					BIA	1
CRABIZ S.R.L. S.B.	consulenza amministrativa e gestionale	Toscana	no	2021	si		RI						1
DE-LAB SRL SOCIETÀ BENEFIT	agenzia di comunicazione	Lombardia	si	2018	si		RI	RI	RI	RI		BIA	4

DESTINATION MAKERS	consulenza gestionale in ambito turistico	Puglia	no	2021	no		RI					BIA	1
EPRCOMUNICAZIONE SOCIETÀ BENEFIT	agenzia di comunicazione	Lazio	no	2021	si		RI						1
EX IDEA S.R.L. - SOCIETÀ BENEFIT	agenzia di comunicazione	Piemonte	si	2020	no		RS					GRI	1
FENICE S.P.A. SOCIETÀ BENEFIT	consulenza amministrativa e gestionale	Emilia Romagna	no	2020	no		RI	RI					1
GENERAS CORPORATE S.R.L. SOCIETÀ BENEFIT	private investments, public e private equity	Lombardia	no	2021	no		RI					BIA	1
GOFORBENEFIT S.R.L. SOCIETÀ BENEFIT	consulenza amministrativa e gestionale	Toscana	si	2019	no			RS	RI				1
GOOD POINT S.R.L SOCIETÀ BENEFIT	consulenza amministrativa e gestionale	Lombardia	no	2019	si		RI	RI				BIA&GRI	1
HAPPILY S.R.L.	consulenza gestionale	Liguria	no	2017	no		RS						1
HIDRA SRL SB	consulenza amministrativa e gestionale	F.V.G.	si	2019	si		IR	IR				GRI	1
HOPE SOCIETÀ DI INVESTIMENTO	consulenza gestionale	Lombardia	si	2021	no		RI						1
HOSPITALITY TEAM SRL-SOCIETÀ BENEFIT	consulenza gestionale	Veneto	si	2018	no		RI	RI	RI	RI			4
ITWILL S.R.L. SOCIETÀ BENEFIT	consulenza gestionale in ambito trasformazione digitale, strategia e marketing	Lombardia	si	2020	no		RI					BIA	1
JOIN GROUP S.R.L.	consulenza amministrativa e gestionale	Lazio	no	2020	no		RI	RI					1
LAM CONSULTING SRL SOCIETÀ BENEFIT	consulenza e formazione in ambito risorse umane	Emilia Romagna	no	2018	no			RI		RI			1
LIFEGATE S.P.A. SOCIETÀ BENEFIT	consulenza amministrativa e gestionale	Lombardia	no	2017	no		RI	RI					1
MY ADVISOR SOCIETÀ BENEFIT	consulenza gestionale	Lombardia	no	2021	no		RI						1
NODOUBT S.R.L.	consulenza amministrativa e gestionale	Lombardia	no	2021	no		RI					BIA	1
OPERARI S.R.L. SOCIETÀ BENEFIT	consulenza amministrativa e gestionale	Lombardia	no	2020	si		RI					BIA	1
PHACELIA SOCIETÀ BENEFIT	consulenza amministrativa e gestionale	Toscana	no	2021	no		RI						1
PLUSVALUE ITALY S.R.L. SOCIETÀ BENEFIT	consulenza strategica e direzionale	Lombardia	si	2021	no		RI						1
PRAGMETICA SOCIETÀ BENEFIT	consulenza amministrativa	Lazio	si	2019	si		RI						1
PRIMATE S.R.L. - SOCIETÀ BENEFIT	consulenza gestionale	Lombardia	si	2017	si		RI	RI	RI	RI		BIA	4
RE-SOLUTION HUB S.B.R.L.	consulenza amministrativa e gestionale	Lombardia	si	2020	no		RI	RI					1
SARA CIRONE GROUP SRL SOCIETÀBENEFIT	consulenza gestionale e direzionale	Emilia Romagna	si	2018	no				IR	RS			1

SG COMPANY SPA SOCIETÀ BENEFIT	consulenza gestionale	Lombardia	no	2020	no		RI							1
TEXTURE S.R.L. SOCIETÀ BENEFIT	consulenza amministrativa e gestionale	Lombardia	si	2017	no				RI	RI	RI	BIA		1
UOMO & AMBIENTE S.R.L. SOCIETÀ BENEFIT	consulenza gestionale e formazione in materiae di sicurezza, ambiente e qualità	Piemonte	no	2020	si		RI							1
WISE-ING SOCIETÀ BENEFIT	consulenza gestionale e direzionale	Lazio	si	2021	no		RI					SABI		1
ALTRE ATTIVITÀ PROFESSIONALI, SCIENTIFICHE E TECNICHE														
AEQUILIBRIA S.R.L. SOCIETÀ BENEFIT	consulenza alle imprese in materia ambientale	Veneto	no	2021	si		RI							1
AMAPOLA S.R.L. SOCIETÀ BENEFIT	agenzia di comunicazione e relazioni pubbliche, specializzata in comunicazione della sostenibilità ambientale, economica e sociale	Lombardia	no	2021	no		RI					GRI		1
APOTECA NATURA S.P.A.	servizi di assistenza, consulenza tecnica e commerciale e di formazione nei confronti di farmacie	Toscana	no	2018	no		RI	RI	RI			BIA SDG Action Manager		1
FEDABO S.P.A. SB	consulenza alle imprese in materia ambientale	Lombardia	no	2021	si		RI	RS				BIA		1
FILI PARI S.R.L. SOCIETÀ BENEFIT	ricerca e sviluppo di materiali innovativi per il settore tessile	Lombardia	si	2020	no		RS							1
GLAC-UP S.R.L. SOCIETÀ BENEFIT	consulenza alle imprese in materia ambientale	Lombardia	si	2021	no		RS							1
GOLDMANN & PARTNERS S.R.L. SOCIETÀ BENEFIT	consulenza strategica e project management	Lombardia	no	2020	si		RI	RI				BIA SDG Action Manager		1
GREEN EVOLUTION S.R.L. SOCIETÀ BENEFIT	consulenza alle imprese in materia ambientale	Lombardia	si	2019	no		RI	RI						1
GREENGO S.R.L. SOCIETÀ BENEFIT	consulenza alle imprese in materia ambientale	Veneto	si	2020	no		RI	RI						1
INFINITYHUB S.P.A. BENEFIT	finanziamento e realizzazione progetti di efficientamento energetico	T.A.A.	no	2021	no		RS					GRI		1
INTERCONSUL S.R.L. - SOCIETÀ BENEFIT	servizi di traduzione ed interpretariato	Emilia Romagna	no	2021	si		RS							1
INTEXO SOCIETÀ BENEFIT S.R.L.	consulenza in ambito healthcare	Lazio	no	2019	si		RI	RI	RI			BIA		1
IZMADE IMPRESA SOCIALE S.R.L.	servizi finalizzati alla salvaguardia e al miglioramento delle condizioni dell'ambiente e all'utilizzazione accorta e razionale delle risorse naturali	Piemonte	si	2016	no		BS	BS	BS	BS				4

LATO SRL - SOCIETÀ BENEFIT	design di moda e design industriale	Emilia Romagna	si	2019	no		RI	RI					1
NATIVA S.R.L. SOCIETÀ BENEFIT	consulenza alle imprese in ambito sostenibilità	Lazio	no	2016	si		RI	RI	RI	RI	RI	BIA GRI SDG Action Manager	5
TANGIBLE S.R.L. SB	consulenza commerciale	Emilia Romagna	no	2021	si		RI					BIA	1
VENTITRENTA S.R.L. SOCIETÀ BENEFIT	consulenza alle imprese in ambito sostenibilità	Lazio	si	2018	no		RI	RI	RI	RI		BIA SDG Action Manager	4
WAY2GLOBAL	servizi di traduzione ed interpretariato	Lombardia	si	2017	si		IR	IR	RI	RI	RI	BIA GRI SDG Action Manager	5
PUBBLICITÀ E RICERCHE DI MERCATO													
ARB SOCIETÀ BENEFIT PER AZIONI	consulenza e formazione in ambito sostenibilità	T.A.A.	no	2021	no		RS						1
ARTATTACK GROUP S.R.L.	pubblicità e ricerche di mercato	Lazio	no	2017	si			RI				BIA GRI SDG Action Manager	1
GOODIFY S.R.L. SOCIETÀ BENEFIT	pubblicità e ricerche di mercato	T.A.A.	no	2018	no		RI						1
HELLO TOMORROW S.R.L. SOCIETÀ BENEFIT	pubblicità e ricerche di mercato	Piemonte	si	2021	no		RS					GRI	1
LOOKAROUND S.R.L.	consulenza aziendale in ambito marketing	Lazio	no	2020	si		RI	RI					1
NEWMI S.R.L. - SOCIETÀ BENEFIT	pubblicità e ricerche di mercato	Lombardia	no	2020	no		RI	RI					1
P.M.G. ITALIA S.P.A.	pubblicità e ricerche di mercato	T.A.A.	no	2020	no		RI	RI				BIA-SROI	1
SOTTOSOPRA S.A.S. SOCIETÀ BENEFIT DI ELENA MILAZZO E C.	pubblicità e ricerche di mercato	Lombardia	no	2021	no		RS						1
TREEBU S.R.L. SOCIETÀ BENEFIT	pubblicità e ricerche di mercato	Veneto	si	2021	no		RI						1
UP2YOU SOCIETÀ A RESPONSABILITA LIMITATA	pubblicità e ricerche di mercato	Lombardia	si	2020	si		RS	RI					1
RICERCA SCIENTIFICA E SVILUPPO													
CONSORTIUM FOR GENOMIC TECHNOLOGIES SOCIETÀ	ricerca e sviluppo in ambito medico	Lombardia	no	2018	no		RI	RI	RI			GRI	1
FONDAZIONE GIACOMO BRODOLINI S.R.L. SB	ricerca e sviluppo in ambito scienze sociali ed umanistiche	Lazio	no	2020	no	RS	RS	RS					1
FRIECO SOCIETÀ BENEFIT S.R.L.	ricerca e sviluppo in ambito ingegneristico	Lombardia	si	2018	no		RI	RI			BIA		1

HEALTHY AGING RESEARCH GROUP SOCIETÀ BENEFIT S.R.L.	ricerca e sviluppo in ambito alimentazione per malati disfalgici	Lombardia	no	2020	no		RS	RS				GRI	1
KOLINPHARMA S.P.A.	ricerca e sviluppo in ambito nutraceutico	Lombardia	no	2021	no		RI	RS	RS			BIA	1
POLISTE SRL SOCIETÀ BENEFIT	ricerca e sviluppo in ambito scienze sociali ed umanistiche	Sardegna	no	2021	si		RI					BIA SDG Action Manager	1
TREEDOM S.R.L. SOCIETÀ BENEFIT	ricerca e sviluppo in ambito delle scienze naturali e dell'ingegneria finalizzate alla riduzione delle emissioni di carbonio	Toscana	no	2020	si		RI	RI				BIA	1
ATTIVITÀ DEGLI STUDI DI ARCHITETTURA E D'INGEGNERIA; COLLAUDI ED ANALISI TECNICHE													
PROGESTO SRL SOCIETÀ BENEFIT	Progettazione e produzione di dispositivi e soluzioni per satelliti	Veneto	no	2020	no		RI	RI					1
PLASTIC FREE CERTIFICATION SOCIETÀ BENEFIT A RESPONSABILITÀ LIM ITATA	servizio di certificazione del rispetto dello standard plastic free	Abruzzo	si	2019	no			RI					1
ATTIVITÀ LEGALI E CONTABILITÀ													
BBS-LOMBARD SRL STP SOCIETÀ BENEFIT	esercizio in forma associata della professione dei commercialisti	Lombardia	si	2018	no		RI						1
C - ATTIVITÀ MANIFATTURIERE													
FABBRICAZIONE DI PRODOTTI CHIMICI													
ACQUA DELL ELBA S.R.L. SOCIETÀ BENEFIT	produzione profumi	Toscana	no	2021	no		RI	RS					1
ALSA LAB S.R.L. SOCIETÀ BENEFIT	produzione cosmetici	Campania	no	2021	no		RI					BIA	1
AMBRO - SOL S.R.L. SOCIETÀ BENEFIT	produzione di prodotti chimici e aerosol	Lombardia	no	2021	si		RI					BIA	1
ANTICA ERBORISTERIA SB	produzione e commercializzazione prodotti per capelli	Lazio	no	2017	si		RI			RI		BIA	1
DAVINES S.P.A.	produzione cosmetici	Emilia Romagna	no	2019	si		RS	RS				SDG Action Manager	1
ISTITUTO GANASSINI S.P.A. DI RICERCHE BIOCHIMICHE	produzione cosmetici	Lombardia	no	2021	no		RS						1
KORFF S.R.L.	produzione cosmetici	Lombardia	no	2021	no		RI					BIA	1
L.M.P.E. S.R.L. S.B.	produzione materiali polimerici ecocompatibili	Toscana	no	2021	no			RS				GRI	1
NOVAMONT S.P.A.	produzione di detergenti, lubrificanti e materiali biodegradabili di origine naturale	Piemonte	no	2020	si		RI	RI				BIA	1

NYMPHA LAB SOCIETÀ BENEFIT	produzione cosmetici	Toscana	si	2020	no		RI	RI				BIA	1
PETTENON COSMETICS S.P.A. SOCIETÀ BENEFIT	produzione cosmetici	Veneto	no	2021	no		RI					BIA GRI	1
UNIFARCO S.P.A.	produzione cosmetici	Veneto	no	2021	no		RS					GRI	1
INDUSTRIE ALIMENTARI													
ANDRIANI S.P.A.	produzione e commercializzazione, per conto proprio e di terzi, di biscotti, pasta e prodotti affini	Puglia	no	2020	si		RI	RS	RS	RS		GRI SDG Action Manager	4
CEREAL DOCKS S.P.A.	produzione di oli grezzi da semi oleosi	Veneto	no	2021	no			RS				GRI	1
DAMIANO S.P.A.	conservazione e trasformazione di frutta, ortaggi e altri prodotti agricoli	Sicilia	no	2017	si		RS	RI				BIA GRI	1
DANONE S.P.A.	produzione e commercializzazione di prodotti lattiero-caseari	Lombardia	no	2020	si		RI	RI				BIA	1
DOMORI S.P.A.	produzione di cioccolato	Piemonte	no	2020	no		RI						1
FRATELLI CARLI	produzione di olio d'oliva	Liguria	no	2019	si		RS	RS				BIA GRI SDG Action Manager	1
ILLYCAFFE ' S.P.A.	torrefazione, conservazione e commercializzazione di caffè	F.V.G.	no	2019	si			RI					1
LABOMAR S.P.A.	sviluppo e produzione conto terzi di integratori alimentari, dispositivi medici, alimenti a fini medici, rientranti nel più ampio settore della nutraceutica	Veneto	no	2020	no		RI	RI				GRI	1
PASTICCERIA FILIPPI SRL SOCIETÀ BENEFIT	produzione e commercio al dettaglio di pasticceria	Veneto	no	2016	si		RI	RI				BIA GRI	1
PONTI S.P.A. SOCIETÀ BENEFIT	produzione di aceti, vino, conserve alimentari	Piemonte	no	2021	no		RS	RS				GRI	1
INDUSTRIA DELLE BEVANDE													
ACQUAINBRICK S.R.L. SOCIETÀ BENEFIT	produzione e commercializzazione acque minerali	Emilia Romagna	si	2019	no		RS					GRI	1
ACQUAVIVA S.P.A. SOCIETÀ BENEFIT	produzione e commercializzazione acque minerali	Lombardia	no	2021	no		RI						1
FERRARELLE - S.P.A.	produzione e commercializzazione acque minerali	Lazio	no	2021	no		RI		RS			BIA	1
LEVICO ACQUE SOCIETÀ A RESPONSABILITÀ LIMITATA BENEFIT	produzione e commercializzazione acque minerali	T.A.A.	no	2020	no		IR	IR				GRI	1
PERLAGE S.R.L.	produzione e vendita di vini	Veneto	no	2019	si		RS	RS	RS	RS		SDG Action Manager	4

FABBRICAZIONE DI CARTA E DI PRODOTTI DI CARTA													
ARBOS S.R.L. - SOCIETÀ BENEFIT	produzione di oggetti di cartotecnica, cancelleria e cartolibreria	Veneto	no	2021	si		RS					BIA&GRI	1
ARCA ETICHETTE SPA	fabbricazione di etichette autoadesive	Lombardia	no	2021	si			RI					1
BOX MARCHE S.P.A.	fabbricazione di imballaggi di cartone	Marche	no	2019	no		RS	RS	RS			GRI	1
ETIFIX S.R.L.	fabbricazione di etichette autoadesive	Lombardia	no	2021	no		RI						1
ICMA SRL SB	lavorazione e commercio carte metallizzate ed affini	Lombardia	no	2021	si		RI					BIA	1
FABBRICAZIONE DI MACCHINARI ED APPARECCHIATURE NCA													
JONIX S.P.A.	produzione di soluzioni per prevenire l'inquinamento indoor	Veneto	no	2021	no		RI					BIA SDG Action Manager	1
MAKER S.R.L.	costruzione, assemblaggio, montaggio, installazione, riparazione e manutenzione di macchine utensili	Lombardia	no	2020	si			RI					1
OMAL S.P.A. SOCIETÀ BENEFIT	produzione di valvole	Lombardia	no	2021	si		RI	RS	RS	RS	RS	GRI	5
TECNOSYSTEMI S.P.A. SOCIETÀ BENEFIT	produzione di attrezzature per la refrigerazione e la ventilazione	Veneto	no	2021	no		RI					BIA GRI	1
FABBRICAZIONE DI COMPUTER E PRODOTTI DI ELETTRONICA E OTTICA; APPARECCHI ELETTROMEDICALI, APPARECCHI DI MISURAZIONE E DI OROLOGI													
FLASH INNOVATIONS SRL SOCIETÀ BENEFIT	fabbricazione componenti elettronici	Emilia Romagna	si	2020	no		RI						1
KF S.R.L. SOCIETÀ BENEFIT	fabbricazione componenti elettronici	Emilia Romagna	no	2020	no			RI					1
OUTSET S.R.L. SOCIETÀ BENEFIT	produzione strumenti tecnologicamente avanzati adibiti all'ottimizzazione dei carichi sui veicoli industriali e sui mezzi del movimento terra	Veneto	no	2020	si		RI	RI				BIA	1
INDUSTRIE TESSILI													
(RI)GENERIAMO S.R.L. - SOCIETÀ BENEFIT	rigenerazione e recupero di prodotti tessili in disuso	Piemonte	si	2020	si		RI	RI					1
ARCHE' S.R.L. SOCIETÀ BENEFIT	produzione di manufatti tessili	Toscana	no	2021	no		RI						1
FABBRICAZIONE DI PRODOTTI IN METALLO (ESCLUSI MACCHINARI E ATTREZZATURE)													
ALESSI S.P.A. - SOCIETÀ BENEFIT	produzione di casalinghi, suppellettili ed accessori per la casa	Piemonte	no	2020	si		RI	RI				BIA	1
PARADISI - S.R.L.	produzione di minuterie e viterie tornite	Marche	no	2016	si		IR	IR	IR	IR	IR	GRI	5
ALTRE INDUSTRIE MANIFATTURIERE													

ALISEA S.R.L. SOCIETÀ BENEFIT	produzione di oggetti di comunicazione aziendale e promozionali	Veneto	no	2019	si		RI	RI	RI				1
OUT OF S.R.L.	produzione e commercializzazione id maschere da sci ed occhiali da sole	Lombardia	no	2021	no		RI						1
FABBRICAZIONE DI MOBILI													
BRAIDA SRL SB	fabbricazione di mobili	F.V.G.	no	2020	si		RI					GRI	1
ZORDAN S.R.L. SOCIETÀ BENEFIT	fabbricazione di mobili	Veneto	no	2016	si		RI	RI	RI	RI	RI		5
FABBRICAZIONE DI PRODOTTI FARMACEUTICI DI BASE E DI PREPARATI FARMACEUTICI													
CHIESI FARMACEUTICI S.P.A.	produzione prodotti farmaceutici e medicinali	Emilia Romagna	no	2019	si		RS	RS	RS	RS		BIA GRI SDG Action Manager	4
CONFEZIONE DI ARTICOLI DI ABBIGLIAMENTO; CONFEZIONE DI ARTICOLI IN PELLE E PELLICCIA													
SEAY S.R.L. SOCIETÀ BENEFIT	confezione articoli di abbigliamento	Veneto	si	2019	si		RI	RI				BIA	1
FABBRICAZIONE DI ARTICOLI IN GOMMA E MATERIE PLASTICHE													
FITT S.P.A.	fabbricazione di lastre, fogli, tubi e profilati in materie plastiche	Veneto	no	2020	no		RS	RS				GRI	1
FABBRICAZIONE DI ALTRI PRODOTTI DELLA LAVORAZIONE DI MINERALI NON METALLIFERI													
FLORIM CERAMICHE	fabbricazione di piastrelle e ceramiche	Emilia Romagna	no	2020	si		RS	RS				BIA GRI	1
METALLURGIA													
PIOMBOLEGHE S.R.L. SOCIETÀ BENEFIT	lavorazione di leghe metalliche e metalli ferrosi/non ferrosi	Lombardia	no	2021	no		RS					GRI	1
INDUSTRIA DEL LEGNO E DEI PRODOTTI IN LEGNO E SUGHERO (ESCLUSI I MOBILI); FABBRICAZIONE DI ARTICOLI IN PAGLIA E MATERIALI DA INTRECCIO													
PALM S.P.A. SB	segheria e produzione imballaggi in legno	Lombardia	no	2020	si		RI					BIA	1
FABBRICAZIONE DI APPARECCHIATURE ELETTRICHE ED APPARECCHIATURE PER USO DOMESTICO NON ELETTRICHE													
I.C.E.L.	produzione di cavi elettrici	Emilia Romagna	no	2020	no			RS				BIA GRI	1
J - SERVIZI DI INFORMAZIONE E COMUNICAZIONE													
PRODUZIONE DI SOFTWARE, CONSULENZA INFORMATICA E ATTIVITÀ CONNESSE													
ATON S.P.A. SOCIETÀ BENEFIT	produzione software e commercio di prodotti editoriali	Veneto	no	2021	no		RI					BIA	1
BIZAWAY SRL SOCIETÀ BENEFIT	gestione di strutture e apparecchiature informatiche hardware	F.V.G.	no	2021	si		RI					SDG Action Manager	1

BLUEIT S.P.A. SOCIETÀ BENEFIT	servizi di consulenza per la gestione delle infrastrutture di elaborazione dati	Lombardia	no	2021	no		RI							1
CANINO S.R.L. SB	progettazione, produzione e commercializzazione di prodotti software applicativi	Sicilia	no	2021	no		RS						GRI	1
CORPORATE SOCIAL RESPONSABILITY	sviluppo, produzione e commercializzazione di servizi volti al miglioramento delle performance ambientali, sociale ed economiche dei processi	Lazio	si	2018	no				RI	RI			GRI	1
CORSIDIA SB S.R.L.	realizzazione e gestione di una piattaforma tecnologica online per l'erogazione di servizi di formazione	Lombardia	si	2019	no				RI					1
DELIVERY CARE SRL SOCIETÀ BENEFIT	assistenza sanitaria digitale	Lombardia	si	2020	no		RI						BIA	1
DOXEE S.P.A.	progettazione e realizzazione di applicativi software per la gestione documentale e dei processi di fatturazione	Emilia Romagna	no	2021	no		RS	RS					GRI	1
FOXWIN S.R.L. - SOCIETÀ BENEFIT	produzione di software	Friuli Venezia Giulia	no	2016	si		RI	RI					BIA	1
GAG SOCIETÀ BENEFIT	realizzazione e gestione di siti web	Lombardia	no	2021	no		RI						SABI	1
GREENAPES	servizi di consulenza hardware e software	Toscana	no	2016	si		RI	RI	RI	RI	RI		SDG Action Manager	5
HUKY S.R.L. SOCIETÀ BENEFIT	consulenza informatica e supporto all'innovazione digitale delle imprese	Lombardia	si	2020	no		RI						BIA	1
IET S.R.L. SOCIETÀ BENEFIT	servizi di consulenza informatica, trasmissione di dati e telematica	Lazio	si	2016	no		RI						BIA	1
JOPLA S.R.L. SB	progettazione dei codici informatici e dei contenuti per la creazione di software di sistema	Emilia Romagna	si	2020	no		RI						SDG Action Manager	1
LEOTRON SOCIETÀBENEFIT A RESPONSABILITÀ LIMITATA	software per la gestione dei negozi dell'usato	Veneto	no	2021	no		RI							1
MAYP DIGITAL S.R.L. SOCIETÀ BENEFIT	sviluppo e produzione di software e sistemi di gestione informatica ed app per dispositivi mobili	Emilia Romagna	no	2021	no		RI							1
MAZZINI LAB S.R.L.	servizi di consulenza nel settore tecnologico e dell'informatica	Lazio	si	2020	no		RI	RI					BIA	1
MONDORA S.R.L. SOCIETÀ BENEFIT	produzione di software	Lombardia	no	2016	si	RI	RI	RI	RI	RI	RI		BIA	6

RETI S.P.A.	installazione ed attivazione impianti e reti informatiche	Lombardia	no	2020	si		RI	RI				BIA	1
SAVE NRG S.R.L.	sviluppo, produzione e commercializzazione di prodotti e servizi innovativi in ambito energia e ambiente	Lombardia	no	2021	si		RI						1
SEOSPIRITO SOCIETÀ BENEFIT S.R.L.	fornitura di servizi SEO di analisi, progettazione e realizzazione di soluzioni web, di social marketing e produzione di contenuti	Veneto	no	2018	no		RI						1
VANTEA SMART	produzione di software	Lazio	no	2021	si			RS				GRI	1
WAMI S.R.L. S.B.	progettazione, produzione e commercializzazione di prodotti software applicativi	Lombardia	no	2017	si					RI			1
WHATMATTERS SOCIETÀ BENEFIT S.R.L	sviluppo, produzione e commercializzazione di strumenti informatici innovativi per l'implementazione di modelli di gestione integrata delle performance economiche, ambientali e sociali	Lombardia	no	2017	no			RI	RI				1
ATTIVITÀ DEI SERVIZI D'INFORMAZIONE E ALTRI SERVIZI INFORMATICI														
BRINGME S.R.L. SOCIETÀ BENEFIT	gestione di potali web finalizzati all'offerta di servizi di carpooling	Piemonte	no	2020	si		RS					GRI	1
CIRCULARITY S.R.L. - SOCIETÀ BENEFIT	gestione portali web	Lombardia	si	2018	no		RI	RI	RI				1
CREAZIONEIMPRESA SRL SOCIETÀ BENEFIT	sviluppo e commercializzazione di software per consulenza alle start up	Lombardia	si	2020	no		RI	RI				BIA	1
DOORWAY S.R.L. SOCIETÀ BENEFIT	gestione di una piattaforma web di equity investing	Emilia Romagna	no	2016	no		RI						1
MEDIAMO S.R.L. SOCIETÀ BENEFIT	servizi per la comunicazione	Emilia Romagna	no	2020	no				RS		RS		1
MOVIMENTO LIFE BEYOND TOURISM TRAVEL TO DIALOGUE - S.R.L. SOCIETÀ BENEFIT	progettazione, sviluppo e gestione di portali e siti web commerciali	Toscana	no	2020	no		RI	RI					1
STARTUP GEEKS S.R.L. SOCIETÀ BENEFIT	gestione di una piattaforma tecnologica online per l'erogazione di servizi di formazione	Lombardia	si	2020	no			RI					1
TELECOMUNICAZIONI														

CONVERGENZE S.P.A. SOCIETÀ BENEFIT	progettazione, realizzazione e gestione di sistemi di telefonia e telecomunicazione di ogni genere	Campania	no	2020	no		RS	RS				GRI	1
FASTWEB SPA	fornitura di reti e servizi di comunicazione elettronica	Lombardia	no	2022	no		RS					GRI	1
TERRECABLATE RETI E SERVIZI - S.R.L. – SOCIETÀ BENEFIT	fornitura di servizi internet e voce	Toscana	no	2021	no		RI					GRI	1
G - COMMERCIO ALL'INGROSSO E AL DETTAGLIO; RIPARAZIONE DI AUTOVEICOLI E MOTOCICLI													
COMMERCIO ALL'INGROSSO (ESCLUSO QUELLO DI AUTOVEICOLI E DI MOTOCICLI)													
ACQUA DYNAMO S.R.L. SOCIETÀ BENEFIT	commercio all'ingrosso di bevande non alcoliche	Toscana	si	2018	no					RI			1
ALMO NATURE SOCIETÀ BENEFIT PER AZIONI	commercio all'ingrosso di prodotti alimentari, integratori e prodotti per la cura degli animali domestici	Liguria	no	2018	no		RI	RI					1
CAROLI GIOVANNI SB SRL	commercio all'ingrosso di combustibili e prodotti petroliferi	Emilia Romagna	no	2021	no		RI						1
DANONE NUTRICIA SPA SOCIETÀ BENEFIT	commercio all'ingrosso di prodotti alimentari, alimenti per l'infanzia	Lombardia	no	2021	si		RI					BIA	1
DERMOPHISIOLOGIQUE S.R.L. SOCIETÀ BENEFIT	commercio all'ingrosso di profumi e cosmetici	Lombardia	no	2016	si		RI	RI	RI		RI	BIA	4
EcorNatura SI'/NATURASI	commercio all'ingrosso di prodotti alimentari, profumi, cosmetici e prodotti per la pulizia	Veneto	no	2021	no		RI	RS				GRI	1
EMSIBETH S.P.A.	commercio all'ingrosso di profumi e cosmetici	Veneto	no	2021	no		RI						1
EURO COMPANY S.R.L. SOCIETÀ BENEFIT	commercio all'ingrosso di prodotti ortofrutticoli	Emilia Romagna	no	2018	si		RS	RS				SDG Action Manager	1
FILENI ALIMENTARE SPA	commercio all'ingrosso di carni	Marche	no	2021	si			RS				GRI	1
FORGREEN S.P.A. SOCIETÀ BENEFIT	commercio impianti fotovoltaici	Veneto	no	2019	no		IR	IR	IR	IR		GRI	4
LEFT WING S.R.L. SOCIETÀ BENEFIT	commercio all'ingrosso non specializzato	Lombardia	si	2019	no		RI	RI					1
N.& B. S.R.L. SOCIETÀ BENEFIT	commercio all'ingrosso di prodotti per la pulizia della persona e della casa	Puglia	no	2019	si		RI	RI	RI			BIA	1
SAVE THE DUCK S.P.A.	commercio all'ingrosso di abbigliamento	Lombardia	no	2019	si		RS	RS	RS	RS		GRI	4
COMMERCIO AL DETTAGLIO (ESCLUSO QUELLO DI AUTOVEICOLI E DI MOTOCICLI)													
BONIVIRI SOCIETÀ BENEFIT A RESPONSABILITÀ LIMITATA	commercio prodotti alimentari	Sicilia	si	2020	no		RI	RI					1

C.D.A. DI CATTELAN SRL SOCIETÀBENEFIT	gestione distributori automatici	F.V.G.	no	2021	no		RI						1
CHITE' S.R.L SOCIETÀ BENEFIT	commercio online di biancheria personalizzabile e su misura	Liguria	no	2021	no		RS					BIA	1
CORTILIA S.P.A. SOCIETÀ BENEFIT	commercio online di prodotti alimentari	Lombardia	no	2020	si		RI	RI					1
ENDELEA S.R.L. SB	commercio al dettaglio e online di prodotti tessili	Lombardia	si	2019	no			RS					1
FARMACIE FIORENTINE - A.FA.M. S.P.A.	commercio all'ingrosso di prodotti farmaceutici	Toscana	no	2018	no		RI	RI	RI	RI		BIA	4
NEXT SOCIAL COMMERCE	commercio online di prodotti non alimentari di aziende sostenibili	Lazio	si	2019	no		RI						1
NWG S.P.A. - SOCIETÀ BENEFIT	commercio impianti fotovoltaici	Toscana	no	2020	si		RS	RS	RS			GRI SDG Action Manager	1
RIONE FONTANA S.R.L. SOCIETÀ BENEFIT	commercio al dettaglio di abbigliamento	Veneto	no	2019	no			RI				BIA	1
SERVICE VENDING S.R.L. SOCIETÀ BENEFIT	gestione distributori automatici	Veneto	no	2019	si			RI	RI				1
STANHOME S.P.A. SOCIETÀ BENEFIT	commercio e vendita a domicilio di prodotti cosmetici e articoli per la casa	Lazio	no	2021	no		RI						1
YVES ROCHER ITALIA SRL SOCIETÀ BENEFIT	commercio al dettaglio di prodotti cosmetici	Lombardia	no	2021	no		RI						1
N - NOLEGGIO, AGENZIE DI VIAGGIO, SERVIZI DI SUPPORTO ALLE IMPRESE													
ATTIVITÀ DI SUPPORTO PER LE FUNZIONI D'UFFICIO E ALTRI SERVIZI DI SUPPORTO ALLE IMPRESE													
ADL CONSULTING S.R.L. SOCIETÀ BENEFIT	servizi di supporto alle imprese-consulenza strategica e pubbliche relazioni	Lazio	no	2021	no		RI						1
ALTEREVO SOCIETÀ BENEFIT S.R.L.	servizi di supporto alle imprese-servizi di analisi, progettazione e formazione	Veneto	no	2021	no		RI					BIA	1
AZIENDA PER IL TURISMO DOLOMITI PAGANELLA	promozione turistica	T.A.A.	no	2021	no		RI						1
CENTRO STUDI ALMA IURA SRL SB	servizi di supporto alle imprese-servizi in ambito bancario e finanziario	Veneto	no	2021	no		RI						1
SLOW FOOD PROMOZIONE S.R.L. SOCIETÀ BENEFIT	servizi di supporto alle imprese-organizzazione di manifestazioni di natura enogastronomica	Piemonte	no	2016	si		RI	RI	RI	RI		BIA	4
SPAZIO NOPROFIT S.R.L. SOCIETÀ BENEFIT	servizi di supporto alle imprese-consulenza amministrativo-gestionale	Emilia Romagna	si	2016	si		RI	RI					1

VEGANOK S.R.L. SOCIETÀ BENEFIT	servizi di supporto alle imprese-servizi pubblicitari	Lazio	no	2016	no		RI	RI					1
ATTIVITÀ DI RICERCA, SELEZIONE, FORNITURA DI PERSONALE													
GI GROUP S.P.A.	ricerca e selezione del personale	Lombardia	no	2021	no		RS					BIA	1
PEOPLERISE S.R.L. - SOCIETÀ BENEFIT	ricerca e selezione del personale	Veneto	no	2019	si		RI						1
ATTIVITÀ DEI SERVIZI DELLE AGENZIE DI VIAGGIO, DEI TOUR OPERATOR E SERVIZI DI PRENOTAZIONE E ATTIVITÀ CONNESSE													
KEL 12 TOUR OPERATOR S.R.L.	agenzia viaggi	Lombardia	no	2021	si		RI					SDG Action Manager	1
XENIA HOTELLERIE SOLUTION S.P.A. SOCIETÀ BENEFIT	agenzia viaggi	Abruzzo	no	2021	no		RI					BIA GRI SROI	1
ATTIVITÀ DI NOLEGGIO E LEASING OPERATIVO													
RICEHOUSE S.R.L. SOCIETÀ BENEFIT	sviluppo di tecniche di costruzione tramite l'impiego di materiali biocompositi	Lombardia	no	2020	si		RI	RI					1
SAGELIO S.R.L. SOCIETÀ BENEFIT	sviluppo e produzione di una infrastruttura di ricarica per veicoli ad emissioni zero	Puglia	si	2017	no		RI	RI	RI	RI	RI	BIA	5
P - ISTRUZIONE													
ASKESIS SOCIETÀ BENEFIT A RESPONSABILITÀ LIMITATA	attività di formazione	Lombardia	no	2020	no		RI					BIA	1
BE YOUR ESSENCE S.R.L. SOCIET À BENEFIT	attività di formazione	Lombardia	si	2018	si		RI	RI					1
ONDE ALTE S.R.L. - SOCIETÀ BENEFIT	attività di formazione	Veneto	si	2018	si				RI			BIA	1
ORGANIZZARE ITALIA SOCIETÀ A RESPONSABILITÀ LIMITATA SOCIETÀ BENEFIT	attività di formazione	Emilia Romagna	no	2018	si		RI	RI				BIA	1
PEOPLE MANAGEMENT LAB SOCIETÀ BENEFIT A RESPONSABILITÀ LIMITATA	attività di formazione	Lazio	si	2017	si		RI	RI	RI	RI	RI	BIA	5
START2IMPACT SRL SOCIETÀ BENEFIT	attività di formazione	Lombardia	no	2021	si		RI					BIA	1
K - ATTIVITÀ FINANZIARIE E ASSICURATIVE													
ASSIMOCO SPA	attività assicurative	Lombardia	no	2019	si		IR					BIA GRI	1
BANCA DI CIVIDALE	attività bancaria	F.V.G.	no	2021	si		RI						1

FIT S.R.L. SOCIETÀ BENEFIT,	attività assicurative	Lombardia	si	2016	no		RI			RI	RI		1
ONECLICK S.R.L. SOCIETÀ BENEFIT	attività assicurative ausiliarie	Lombardia	si	2020	si		RI	RI					1
SERVIZI CGN S.R.L. SOCIETÀ BENEFIT	consulenza fiscale e giuslavoristica business to business	F.V.G.	no	2021	no		RI					BIA	1
A - AGRICOLTURA, SILVICOLTURA E PESCA													
ABOCA S.P.A. SOCIETÀ AGRICOLA	sviluppo di soluzioni terapeutiche innovative a base di complessi molecolari naturali	Toscana	no	2018	si		RI	RI	RI	RI		BIA	4
AVIGNONESI SOCIETÀ A RESPONSABILITÀ LIMITATA AGRICOLA	coltivazione agricola e produzione vini	Toscana	no	2021	si		RI	RS					1
MACCARESE S.P.A. SOCIETÀ AGRICOLA BENEFIT	coltivazione agricola e allevamento	Lazio	no	2021	no		RI						1
VAGO FELICE SOCIETÀ AGRICOLA BENEFIT A RESPONSABILITÀ LIMITATA	coltivazione agricola di ortaggi	Veneto	si	2021	no		RI						1
ARBOLIA S.P.A. SOCIETÀ BENEFIT	silvicoltura	Lombardia	si	2020	no		RI	RI					1
F - COSTRUZIONI													
EFFE DILIGENCE S.R.L. SB	manutenzione ordinaria di impianti antincendio	Toscana	no	2021	no		RI					BIA	1
PAOLIN SRL	costruzioni edifici	Veneto	no	2020	no		RI	RI					1
RIVA E MARIANI GROUP SOCIETÀ PER AZIONI	costruzioni edifici	Lombardia	no	2021	no		RS					GRI	1
TECNOSTILE CONTRACT S.R.L. -	costruzioni edifici	Veneto	no	2021	no		RI						1
L - ATTIVITA' IMMOBILIARI													
ELAIA 1986 S.P.A. SOCIETÀ BENEFIT	attività immobiliari	Toscana	si	2020	no		RI					GRI	1
HOMES4ALL S.R.L. SOCIETÀ BENEFIT	attività immobiliari	Piemonte	si	2019	no		RI						1
LANDMARK CAPITAL S.R.L.	attività immobiliari	Lombardia	no	2021	no		RI					BIA	1
TIRELLI & PARTNERS S.R.L. SOCIETÀ BENEFIT	attività immobiliari	Lombardia	no	2019	si		RI	RI					1
D - FORNITURA DI ENERGIA ELETTRICA, GAS, VAPORE E ARIA CONDIZIONATA													
ESA ENERGIE S.P.A. SOCIETÀ BENEFIT	vendita energia elettrica e gas	Abruzzo	si	2016	no		RI					BIA	1
EVOLVERE S.P.A. SOCIETÀ BENEFIT	produzione e vendita energia elettrica da fonti rinnovabili	Lombardia	no	2019	si		RI	RI	RI	RS	RS	GRI	5

NWG ENERGIA S.P.A.	vendita energia elettrica	Toscana	no	2016	si		RS	RS				GRI SDG Action Manager	1
I - ATTIVITÀ DEI SERVIZI DI ALLOGGIO E DI RISTORAZIONE													
BIBENDUM GROUP S.R.L.	servizio catering per eventi	Emilia Romagna	no	2020	no		RS	RS				GRI	1
INN-FORMAZIONE SRL SOCIETÀ BENEFIT	alloggio	Lombardia	no	2018	no				RI				1
PANINO GIUSTO S.P.A.	attività di ristorazione	Lombardia	no	2019	si		RI					BIA SDG Action Manager	1
H - TRASPORTO E MAGAZZINAGGIO													
GARC AMBIENTE S.P.A.	trasporto terrestre	Emilia Romagna	no	2020	si		RI					SDG Action Manager	1
M.A. GRENDI DAL 1828 S.P.A. SOCIETÀ BENEFIT	trasporto marittimo	Sardegna	no	2021	no		RI					BIA	1
VECTOR - S.P.A.	magazzinaggio e attività di supporto ai trasporti	Lombardia	no	2021	no		RI						1
E - FORNITURA DI ACQUA; RETI FOGNARIE, ATTIVITÀ DI GESTIONE DEI RIFIUTI E RISANAMENTO													
ESO SOCIETÀ BENEFIT A R L	raccolta, trasporto e smaltimento rifiuti	Lombardia	no	2016	no				RI				1
GREEN LINK S.R.L.	raccolta, trasporto e smaltimento rifiuti	Puglia	no	2020	no		RI	RI					1
Q - SANITA' E ASSISTENZA SOCIALE													
ISTITUTI CLINICI SCIENTIFICI MAUGERI	assistenza sanitaria	Lombardia	no	2016	no			RS				GRI	1
B - ESTRAZIONE DI MINERALI DA CAVE E MINIERE													
PERGEMINE S.P.A.	perforazioni geotermiche e minerarie	Emilia Romagna	no	2021	no		RI						1

Documents published but not included in the sample (as they do not fit the defined sampling criteria)		
Documents included in the sample	Documents that only report a description of company commercial/productive activities	
	Documents that describe sustainability practices only with a qualitative approach (as they do not include any performance indicator)	
	Documents that describe sustainability practices with a limited number of indicators or in a very concise way	
	Documents that describe sustainability practices also with a quantitative approach (as they include performance indicators)	

Table D1. Aboca Spa – evolution over time of sustainable business process practices and patterns

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
PARTICIPATORY, ETHICAL AND INCLUSIVE GOVERNANCE	na	*establish a Whistleblowing system to monitor discrimination and detrimental behaviour of the human dignity by encouraging employees to anonymously report any violations, illicit, incorrect, discriminatory and harmful internal behaviour*	-	0	0	0	1
		prepare ethical code	-	0	0	1	1
		map stakeholders and engage stakeholders (e.g., through virtual platforms, focus groups or interviews) to conduct a participatory materiality analysis and impact assessment in a participatory manner	-	0	0	0	1
GREEN COMPENSATION	E	*compensate for C02 emissions through tree planting and reforestation works*	-	1	1	1	1
		collaborate with non-profit associations that work to protect the environment and biodiversity (e.g. associations that operate to reduce waste such as plastic, to protect the sea, that promote organic and sustainable agricultural practices)	-	1	1	1	1
CIRCULAR PRODUCTION	E	*purify the wastewater from the production process and reintroduce the purified water into the environment or into the production process*	-	0	0	1	1
		conduct differentiation and recycling of production waste	-	1	1	1	1
GREEN PRODUCT LABELING	E	*obtain environmental certification of the production process (e.g. organic production certification, production to protect biodiversity)*	-	1	1	1	1
GREEN WORKPLACE	E	*install charging stations for electric vehicles*	-	0	1	1	1
		correct waste disposal (by installing containers for separate waste collection)	-	0	1	1	1
GREEN RESOURCES MANAGEMENT	E	*monitor and reduce water consumption (by installing monitoring software; by installing low-flow water dispensers in buildings; by using groundwater or rainwater recovery for irrigation needs)*	-	0	1	1	1
		recover abandoned industrial sites to avoid the consumption of virgin land for the construction of new production sites or recover new production spaces from the redevelopment of existing and disused spaces	-	1	1	1	1
GREEN RESOURCES REPLACEMENT	E	*substitute traditional company vehicles with ecological vehicles (electric, hybrid or at least Euro6)*	-	1	1	1	1
		substitute conventional energy with energy (electricity and gas) produced from renewable sources and from certified suppliers with guarantee of origin (GO)	-	1	1	1	1
		replace old machinery washing systems with a more efficient systems to reduce water consumption	-	0	1	0	1
GREEN PRODUCT FEATURES	E	*develop eco-sustainable packaging solutions (e.g. by replacing plastic with glass; by creating packaging solutions that do not have disposable parts, with instructions printed directly on the packaging and inks from renewable sources, favouring recycled materials, by reducing weight/quantity of materials used to create the packaging or reduction of overpackaging)*	-	0	0	1	0
GREEN PURCHASING	E	*purchase eco-friendly packaging (in recycled paper/FSC certified paper, in biodegradable plastic, in recycled plastic, in compostable material)*	-	0	0	1	1
PUBLIC ENVIRONMENTAL /SOCIAL AWARENESS RAISING	E	*raise citizens' awareness of environmental issues and climate change through the organization of particular initiatives (e.g., floral installations in the square on the topic of bees highly threatened by climate change, organization of days dedicated to the topic of climate change, participation in Earth Day)*	-	0	0	0	1
	S	*open the production plant to school visits*	-	1	1	1	1
RESPONSIBLE HUMAN BEHAVIOUR	E/S	*organize car sharing or company car pooling or shuttle service for employees*	-	0	1	0	0
GREEN&SOCIALLY RESPONSIBLE SUPPLIERS	E/S	*choose local suppliers to support the local economy and to reduce CO2 emissions in transport and support the local economy*	-	0	1	1	1
	E/S	*choose Italian suppliers*	-	0	1	1	1
	E/S	*engage and raise awareness among suppliers to guide them in improving environmental sustainability performance (e.g., on the issues of climate change, eco-friendly packaging, use of renewable energy, low environmental impact transport) and social sustainability performance*	-	0	0	1	1
SOCIAL EXTERNAL COMPENSATION	S	*collaborate/finance universities/research centers to carry out research projects*	-	1	1	1	1
	S	*support (through donations or sponsorships) local cultural initiatives (e.g., literary prizes, theatre companies, village festivals)*	-	1	1	1	1
	S	*promote the adoption of healthy and correct lifestyles (through nutrition education in schools, launch of contests, participation/organization of events, launch of communication campaigns, publication of books)*	-	1	1	1	1

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
	S	*collaborate and support (through donations) non-profit associations that operate to support disadvantaged categories (minors, migrants, homeless people, prisons, women victims of violence) or to support vulnerable people (disabled, elderly, people suffering from serious illnesses)*	-	0	1	1	1
	S	*organize cultural events (e.g., exhibitions, book presentations)*	-	1	1	1	1
	S	*donate products (e.g., unsold food products or production surpluses, or processing scraps, or medicines to the community (schools, local charities and associations, schools)*	-	0	0	0	1
QUALITY AND INCLUSIVE WORKPLACE	S	*provide free canteen service*	-	1	1	1	1
SOCIAL INTERNAL COMPENSATION	S	*provide bonuses/prizes on employee pay (often linked to the achievement of objectives)*	-	1	1	1	1
	S	*provide vouchers and discounts for supermarkets, shops, restaurants, gyms, fuel, other leisure and cultural activities (travel, cinema, theatres, wellness centres, purchasing books) and other services*	-	0	1	1	1
	S	*provide cash bonuses and/or leave on the occasion of employees' weddings or civil unions*	-	1	1	0	0
	S	*activate supplementary pension, insurance (e.g. life insurance) and/or health insurance (which covers medical expenses incurred by employees)*	-	0	1	1	1
SOCIAL INTERNAL ALTERNATIVE	S	*introduce smartworking*	-	1	1	1	1
TRAINING	S	*provide employees with professional training*	-	1	1	1	1
	S	*provide employees with transversal training (courses on female empowerment, gender identity, education and prevention of feminicide and violence against women, prejudices, stereotypes, diversity and inclusiveness and equity)*	-	1	0	0	0
	S	*monitor and map employees 'skills*	-	1	1	1	1
SOCIAL ENGAGEMENT	S	*create a corporate APP to encourage the engagement of the corporate community*	-	1	1	1	1
	S	*collect employees' feedback (on the company climate, level of satisfaction) through internal surveys or other tools (dedicated email address, boxes placed in common areas, dedicated section in the company APP, HR function dedicated to listening employees)*	-	0	1	1	1
SOCIAL BONDING	S	*organize moments of sharing between employees (periodic moments of conviviality e.g., at festivity, also providing employees with a specific budget to organize such events between colleagues and/or making company spaces available for the organization of convivial events)*	-	1	1	1	1
	S	*establish a solidarity bank/hours fund (possibility for employees to transfer vacation days to other colleagues free of charge)*	-	0	0	1	1
	S	*establish solidarity fund (into which employees/managers can voluntarily pay sums of money which will be donated free of charge to support the employees in case of need)*	-	0	0	1	1
	S	*promote the socialization and involvement of employees who work remotely (by organizing online sharing moments such as online coffee breaks and online gym lessons, online socializing events e.g. on metaverse platforms)*	-	0	0	1	0
SOCIALLY RESPONSIBLE HIRING AND CAREERS	S	*hire workers from the area in which the company operates*	-	0	0	1	1

Table D2. Adriani Spa – evolution over time of sustainable business process practices and patterns

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
PARTICIPATORY, ETHICAL AND INCLUSIVE GOVERNANCE	na	*appoint an impact manager*	-	0	0	0	1
	na	*involve stakeholders and collect stakeholders' feedback (sharing company results with stakeholders and collecting feedback and ideas for improving the company strategy or investments to be made, to identify stakeholders' needs and expectations)*	-	1	1	1	1
		promote female leadership	-	1	1	1	1

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
PARTECIPATORY SUSTAINABILITY REPORTING	na	*map stakeholders and engage stakeholders (e.g., through virtual platforms, focus groups or interviews) to conduct a participatory materiality analysis and impact assessment*	-	1	1	1	1
GREEN RESOURCES MANAGEMENT	E	*use eco-friendly paper (recycled, FSC certified, derived from sugar cane)*	-	1	0	0	0
	E	*reduce energy consumption in the offices (by installing presence/movement sensors for the lighting system; by installing an automatic control unit for automatic switching on/off of the heating/cooling systems when the offices are manned/remote control of the heating and cooling systems; by modulating the temperature in the working environments; by installing large windows to exploit natural light)*	-	0	1	0	1
	E	*monitor and reduce water consumption (by installing monitoring software; by installing low-flow water dispensers in buildings; by using groundwater or rainwater recovery for irrigation needs)*	-	0	1	1	0
	E	*reduce paper consumption (by digitizing documents, dematerialising communication in shops by replacing advertising billboards or price signs with digital monitors, replacing paper pay slips with digital pay slips, dematerialising production documentation such as product technical data sheets or production orders on workstations)*	-	0	1	0	0
GREEN RESOURCES REPLACEMENT	E	*substitute conventional energy with energy (electricity and gas) produced from renewable sources and from certified suppliers with guarantee of origin (GO)*	-	1	1	1	1
	E	*substitute traditional company vehicles with ecological vehicles (electric, hybrid or at least Euro6)*	-	0	0	0	1
CIRCULAR PRODUCTION	E	*conduct differentiation and recycling of production waste*	-	1	1	1	1
GREEN PRODUCT FEATURES	E/S	*analyze the social and environmental impacts of products (e.g., using SLCA methodology)*	-	1	0	0	0
	E	*develop eco-sustainable packaging solutions (e.g. by replacing plastic with glass; by creating packaging solutions that do not have disposable parts, with instructions printed directly on the packaging and inks from renewable sources, favouring recycled materials, by reducing weight/quantity of materials used to create the packaging or reduction of overpackaging)*	-	1	1	1	1
GREEN PRODUCT LABELING	E	*obtain environmental certification for products (e.g. organic certification, gluten free certification, FSC certification of wood/paper products)*	-	1	1	1	1
GREEN PRODUCT VARIANT	E	*launch product lines whose production uses waste from other processes (e.g., purified water) and which contribute to capturing the CO2 emitted*	-	0	0	1	1
GREEN COMPENSATION	E	*collaborate with non-profit associations that work to protect the environment and biodiversity (e.g. associations that operate to reduce waste such as plastic, to protect the sea, that promote organic and sustainable agricultural practices)*	-	0	0	1	1
	E	*compensate for CO2 emissions by purchasing carbon credits or financing carbon offsetting projects - which generate certified carbon credits*	-	0	0	1	1
GREEN WORKPLACE	E	*redevelop buildings through the use of eco-sustainable materials (e.g. eco-sustainable paints, photocatalytic paints, furnishings made of eco-sustainable materials such as wood, seat fabrics made from recycled materials, soundproof floors; office furniture made with recycled and eco-compatible materials)*	-	0	0	0	1
	E	*install a photovoltaic system*	-	0	0	0	1
	E	*install trigeneration system for self-production of electrical, thermal and cooling energy*	-	0	0	0	1
	E	*achieve buildings' energy efficiency (through the installation of windows with lower thermal transmissibility, insulated panels, replacement of gas boilers with heat pumps, replacement of heating/cooling systems with more energy efficient ones, relamping or replacement of incandescent lights with LED lights)*	-	0	0	0	1
RESPONSIBLE HUMAN BEHAVIOUR	E	*environmentally sustainable employees' home-work travel (encouraging the use of bicycles for travel by making bicycles available, providing vouchers for the purchase of bicycles, setting up a reward mechanism for those who use bicycles, making cars/bikes/scooters available electric vehicles, encourage the use of public transport by providing green mobility bonuses and subsidizing public transport passes)*	-	1	1	1	1
GREEN&SOCIALLY RESPONSIBLE SUPPLIERS	E/S	*choose local suppliers to support the local economy and to reduce CO2 emissions in transport and support the local economy*	-	1	1	1	1
	E/S	*choose Italian suppliers*	-	1	1	1	1
	S	*conduct supplier assessment according to social sustainability criteria*	-	1	1	1	0

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
	E/S	*prepare supplier code of conduct including criteria (e.g., product quality, ethical, environmental and social principles) that suppliers are required to respect*	-	0	0	1	1
	E/S	*engage and raise awareness among suppliers to guide them in improving environmental sustainability performance (e.g., on the issues of climate change, eco-friendly packaging, use of renewable energy, low environmental impact transport) and social sustainability performance*	-	0	0	1	1
PUBLIC ENVIRONMENTAL /SOCIAL AWARENESS RAISING	S	*participate in conferences, lectures and workshops (at universities or schools or public events) to explain and disseminate the sustainable business model or the BCORP and benefit corporation model to generate and increase awareness among citizens and consumers regarding sustainable business*	-	0	1	0	1
	E	*activate training courses (both in schools and aimed at the community) on environmental sustainability issues (e.g. energy management, waste recycling and differentiation, environmental education)*	-	0	0	0	1
SOCIAL EXTERNAL COMPENSATION	S	*promote the adoption of healthy and correct lifestyles (through nutrition education in schools, launch of contests, participation/organization of events, launch of communication campaigns, publication of books)*	-	1	1	0	0
	S	*support (through donations or sponsorship) local sport associations*	-	1	1	0	1
	S	*donate toys to hospitals*	-	1	0	0	0
	S	*support (through donations or sponsorships) local cultural initiatives (e.g., literary prizes, theatre companies, village festivals)*	-	1	1	1	1
	S	*collaborate and finance universities/research institutions to carry out research projects*	-	0	1	1	1
	S	*collaborate with universities to produce degree theses and/or training internships*	-	0	0	1	1
	S	*implement initiatives to support developing countries (e.g., construction of schools, health facilities, infrastructure to make drinking water accessible) through collaboration with non-profit associations that operate to support the populations of developing countries*	-	0	0	1	0
	S	*collaborate and support (through donations) non-profit associations that operate to support disadvantaged categories (minors, migrants, homeless people, prisons, women victims of violence) or to support vulnerable people (disabled, elderly, people suffering from serious illnesses)*	-	0	1	1	1
SOCIAL PRODUCT LABELING	S	*obtain socially responsible product certifications (e.g., fair trade, Kosher, Halal, VeganOk)*	-	1	1	1	1
QUALITY AND INCLUSIVE WORKPLACE	S	*organize open space workplaces to facilitate interaction between employees and teamwork*	-	0	1	0	0
	S	*provide free canteen service*	-	0	1	1	1
SOCIALLY RESPONSIBLE HIRING AND CAREERS	S	*pursue gender equality in hiring*	-	0	0	1	1
	S	*hire workers from the area in which the company operates*	-	1	1	0	1
	S	*hire permanent employees*	-	1	0	1	1
SOCIAL BONDING	S	*organize moments of sharing between employees (periodic moments of conviviality e.g., at festivity, also providing employees with a specific budget to organize such events between colleagues and/or making company spaces available for the organization of convivial events)*	-	1	0	0	1
	S	*organize leisure/sport activities/moments of reflection and debate on topics of common interest and team building activities (e.g., Lego Serious Play activities, escape rooms, outdoor activities)*	-	1	1	1	1
	S	*organize events open to employees' families (e.g., family day-event)*	-	1	1	1	1
TRAINING	S	*provide employees with professional training*	-	1	1	1	0
	S	*provide employees with transversal training (English and foreign languages)*	-	1	1	1	0
	S	*provide employees with transversal training (digital knowledge e.g., digital skills, cybersecurity)*	-	1	1	1	0
	S	*provide employees with transversal training (soft skills including public speaking, effective communication, time and stress management)*	-	1	1	1	0
	E/S	*provide employees with transversal training (sustainability, CSR, circular economy, biodiversity,benefit corporation and bcorp system)*	-	1	1	1	1
	S	*provide employees with transversal training (skills on project management, leadership and change management, problem solving, negotiation)*	-	0	0	1	0

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
	S	*provide employees with transversal training (courses on female empowerment, gender identity, education and prevention of feminicide and violence against women, prejudices, stereotypes, diversity and inclusiveness and equity)*	-	0	0	1	1
SOCIAL ENGAGEMENT	S	*communicate towards employees on corporate values and the results obtained by the company (e.g., through periodic meetings, newsletters, signage, noticeboards, digital screens, company magazines)*	-	1	1	0	0
	S	*collect employees' feedback (on the company climate, level of satisfaction) through internal surveys or other tools (dedicated email address, boxes placed in common areas, dedicated section in the company APP, HR function dedicated to listening employees)*	-	1	1	0	0
SOCIAL INTERNAL ALTERNATIVE	S	*introduce smartworking*	-	0	1	1	1
SOCIAL INTERNAL COMPENSATION	S	*guarantee employees' technological equality (by providing cash bonuses for the purchase of equipment, furniture and software to work from home)*	-	0	1	0	0
	S	*provide services for employees' children (e.g., scholarships, summer camps for children, scholastic support for children suchas mathematics enhancement courses, homework help, remedial courses, consultancy for children with learning disabilities, support in preparation for university tests, job orientation consultancy, activation of theatre and artistic workshops)*	-	0	1	1	0
	S	*activate company gym and wellness areas*	-	0	0	1	1
	S	*provide health services to employees (e.g. 24-hour medical assistance, physiotherapy service, nutritional and psychological consultancy)*	-	0	0	0	1
	S	*communicate to employees the risks associated with smoking through dedicated campaigns*	-	0	0	0	1
	S	*provide vouchers and discounts for supermarkets, shops, restaurants, gyms, fuel, other leisure and cultural activities (travel, cinema, theatres, wellness centres, purchasing books) and other services*	-	0	0	0	1
	S	*activate supplementary pension, insurance (e.g. life insurance) and/or health insurance (which covers medical expenses incurred by employees)*	-	0	0	0	1
	S	*reimburse of health expenses incurred by employees*	-	0	0	0	1
	S	*activate disease screening programs for employees (through agreements with non-profit associations, blood donors, or with hospitals and analysis laboratories to allow employees and, in some cases, family members, to benefit from free screening)*	-	0	0	0	1
SOCIAL RESOURCE REPLACEMENT	S	*replace old desks and workstation with more comfortable desks and workstations (e.g., height-adjustable, large PC screens)*	-	0	0	1	0

Table D3. Chiesi Farmaceutici Spa – evolution over time of sustainable business process practices and patterns

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
PARTICIPATORY, ETHICAL AND INCLUSIVE GOVERNANCE	na	*prepare ethical code*	-	1	1	1	1
	na	*promote female leadership*	-	0	1	1	1
	na	*create committee for gender equality, inclusion and diversity*	-	0	1	1	1
PARTICIPATORY SUSTAINABILITY REPORTING	na	*map stakeholders and engage stakeholders (e.g., through virtual platforms, focus groups or interviews) to conduct a participatory materiality analysis and impact assessment in a participatory manner*	-	0	1	1	1
GREEN WORKPLACE	E	*redevelop buildings through the use of eco-sustainable materials (e.g. eco-sustainable paints, photocatalytic paints, furnishings made of eco-sustainable materials such as wood, seat fabrics made from recycled materials, soundproof floors; office furniture made with recycled and eco-compatible materials)*	-	1	0	1	1
	E	*install charging stations for electric vehicles*	-	0	0	1	1
	E	*install a photovoltaic system*	-	0	1	1	0
	E	*achieve buildings' energy efficiency (through the installation of windows with lower thermal transmissibility, insulated panels, replacement of gas boilers with heat pumps, replacement of heating/cooling systems with more energy efficient ones, relamping or replacement of incandescent lights with LED lights)*	-	0	0	1	0
	E	*obtain LEED (Leadership in Energy and Environmental Design) certification for buildings and production plants/offices*	-	0	1	1	1
CIRCULAR PRODUCTION	E	*conduct differentiation and recycling of production waste*	-	0	1	1	1

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
GREEN PRODUCT FEATURES	E/S	*analyze the social and environmental impacts of products (e.g., using SLCA methodology)*	-	0	1	1	1
GREEN RESOURCES MANAGEMENT	E	*monitor and reduce water consumption (by installing monitoring software; by installing low-flow water dispensers in buildings; by using groundwater or rainwater recovery for irrigation needs)*	-	0	0	1	0
	E	*reduce the use of plastic (by eliminating disposable plastic from offices and/or the canteen, eliminating plastic water bottles and installing drinking water dispensers in offices; installing bulk drink dispensers in offices; by using only coffee in compostable grains or pods)*	-	0	1	0	0
	E	*reduce paper consumption (by digitizing documents, dematerialising communication in shops by replacing advertising billboards or price signs with digital monitors, replacing paper pay slips with digital pay slips, dematerialising production documentation such as product technical data sheets or production orders on workstations)*	-	0	0	1	0
GREEN RESOURCES REPLACEMENT	E	*substitute traditional company vehicles with ecological vehicles (electric, hybrid or at least Euro6)*	-	0	0	1	1
	E	*substitute conventional energy with energy (electricity and gas) produced from renewable sources and from certified suppliers with guarantee of origin (GO)*	-	0	1	1	1
GREEN LOGISTIC AND WAREHOUSING	E	*adopt good practices in deliveries (optimization of deliveries by using fully loaded vehicles, replacing road transport with less impactful rail and/or maritime transport, use of intermodal transport)*	-	0	1	1	1
	E	*use carriers and transport services that reduce polluting emissions or carriers that offset their environmental impact (by requiring an additional cost to cover the costs of CO2 compensation)*	-	0	1	0	0
GREEN&SOCIALLY RESPONSIBLE SUPPLIERS	E/S	*prepare supplier code of conduct including criteria (e.g., product quality, ethical, environmental and social principles) that suppliers are required to respect*	-	0	1	1	1
	E	*conduct supplier assessment according to environmental sustainability criteria*	-	0	1	1	1
	S	*conduct supplier assessment according to social sustainability criteria*	-	0	1	1	1
	E/S	*choose local suppliers to support the local economy and to reduce CO2 emissions in transport and support the local economy*	-	0	1	0	0
	E/S	*choose Italian suppliers*	-	0	1	0	0
RESPONSIBLE HUMAN BEHAVIOUR	E	*optimize and reduce employees travel also by encouraging the use of remote working*	-	0	1	0	0
	E/S	*organize car sharing or company car pooling or shuttle service for employees*	-	0	0	0	1
PUBLIC ENVIRONMENTAL /SOCIAL AWARENESS RAISING	S	*participate in conferences, lectures and workshops (at universities or schools or public events) to explain and disseminate the sustainable business model or the BCORP and benefit corporation model to generate and increase awareness among citizens and consumers regarding sustainable business*	-	0	0	1	1
SOCIAL RESOURCE REPLACEMENT	S	*replace old desks and workstation with more comfortable desks and workstations (e.g., height-adjustable, large PC screens)*	-	1	0	0	0
SOCIAL EXTERNAL COMPENSATION	S	*collaborate and support (through donations) non-profit associations that operate to support disadvantaged categories (minors, migrants, homeless people, prisons, women victims of violence) or to support vulnerable people (disabled, elderly, people suffering from serious illnesses)*	-	1	1	1	1
	S	*collaborate/finance universities/research centers to carry out research projects*	-	0	1	0	0
	S	*support (through donations or sponsorships) local cultural initiatives (e.g., literary prizes, theatre companies, village festivals)*	-	0	1	1	1
	E/S	*involve employees in voluntary activities (e.g. in support of the elderly, the poor, the vulnerable, also through collaboration with non-profit organisations, in tree planting activities, plastic collection and cleaning of the area, blood donation, etc.)*	-	0	1	1	1
	S	*donate products (e.g., unsold food products or production surpluses, or processing scraps, or medicines to the community (schools, local charities and associations, schools)*	-	0	0	1	1
SOCIAL INTERNAL ALTERNATIVE	S	*introduce smartworking*	-	1	1	1	1
SOCIALLY RESPONSIBLE	S	*hire permanent employees*	-	1	1	1	1
	S	*hire young people*	-	0	0	1	1

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
HIRING AND CAREERS	S	*pursue gender equality in hiring*	-	1	1	1	1
	S	*introduce onboarding programs for new employees*	-	0	1	1	0
	S	*pursuing gender equality in wages*	-	0	0	0	1
SOCIAL INTERNAL COMPENSATION	S	*activate company gym and wellness areas*	-	1	0	0	0
	S	*provide services for employees' children (e.g., scholarships, summer camps for children, scholastic support for children such as mathematics enhancement courses, homework help, remedial courses, consultancy for children with learning disabilities, support in preparation for university tests, job orientation consultancy, activation of theatre and artistic workshops)*	-	1	0	0	0
	S	*activate disease screening programs for employees (through agreements with non-profit associations, blood donors, or with hospitals and analysis laboratories to allow employees and, in some cases, family members, to benefit from free screening)*	-	1	0	0	0
	S	*provide bonuses/prizes on employee pay (often linked to the achievement of objectives)*	-	0	1	0	0
	S	*communicate to employees the risks associated with smoking through dedicated campaigns*	-	0	1	0	0
	S	*provide counselling and psychological support to new parents*	-	0	1	1	0
	S	*leaves, paid time off and reduced working hours for employees with children (e.g. new parents, parents with children up to 6/7 years old, baby week)*	-	0	0	1	0
TRAINING	S	*provide employees with professional training*	-	1	1	1	1
	S	*provide employees with transversal training (soft skills including public speaking, effective communication, time and stress management)*	-	0	0	0	0
	S	*provide employees with transversal training (skills on project management, leadership and change management, problem solving, negotiation)*	-	1	1	0	0
	S	*provide employees with transversal training (knowledge on healthy lifestyle and correct diet)*	-	1	1	0	0
	S	*provide employees with transversal training (courses on generation gap, parent-child relationship and conflict, emotional intelligence)*	-	1	1	1	0
	E/S	*provide employees with transversal training (sustainability, CSR, circular economy, biodiversity, benefit corporation and bcorp system)*	-	0	1	1	1
	S	*provide employees with transversal training (soft skills including public speaking, effective communication, time and stress management)*	-	0	0	1	0
SOCIAL ENGAGEMENT	S	*collect employees' feedback (on the company climate, level of satisfaction) through internal surveys or other tools (dedicated email address, boxes placed in common areas, dedicated section in the company APP, HR function dedicated to listening employees)*	-	0	1	0	0
	S	*introduce reverse mentoring*	-	0	0	0	1
SOCIAL BONDING	S	*establish a solidarity bank/hours fund (possibility for employees to transfer vacation days to other colleagues free of charge)*	-	0	0	1	0

Table D4. Paradisi srl - evolution over time of sustainable business process practices and patterns

Sustainable Pattern	Sust. Dim	Practice	2017	2018	2019	2020	2021
PARTICIPATORY, ETHICAL AND INCLUSIVE GOVERNANCE	NA	*prepare ethical code*	1	1	1	1	1
PARTECIPATORY SUSTAINABILITY REPORTING	na	*map stakeholders and engage stakeholders (e.g., through virtual platforms, focus groups or interviews) to conduct a participatory materiality analysis and impact assessment in a participatory manner*	0	0	0	1	1
GREEN RESOURCES REPLACEMENT	E	*substitute conventional energy with energy (electricity and gas) produced from renewable sources and from certified suppliers with guarantee of origin (GO)*	1	1	1	1	1
GREEN RESOURCES MANAGEMENT	E	*reduce the use of plastic (by eliminating disposable plastic from offices and/or the canteen, eliminating plastic water bottles and installing drinking water dispensers in offices; installing bulk drink dispensers in offices; by using only coffee in compostable grains or pods)*	0	0	1	1	1
CIRCULAR PRODUCTION	E	*conduct differentiation and recycling of production waste*	0	0	0	1	1

Sustainable Pattern	Sust. Dim	Practice	2017	2018	2019	2020	2021
GREEN WORKPLACE	E	*achieve buildings' energy efficiency (through the installation of windows with lower thermal transmissibility, insulated panels, replacement of gas boilers with heat pumps, replacement of heating/cooling systems with more energy efficient ones, relamping or replacement of incandescent lights with LED lights)*	0	0	0	0	1
GREEN COMPENSATION	E	*compensate for C02 emissions through tree planting and reforestation works*	0	0	0	0	1
GREEN&SOCIALLY RESPONSIBLE SUPPLIERS	E	*conduct supplier assessment according to environmental sustainability criteria*	1	1	1	0	0
	S	*conduct supplier assessment according to social sustainability criteria*	1	1	1	0	0
	E/S	*choose local suppliers to support the local economy and reduce transport CO2 emissions*	1	1	1	1	1
PUBLIC ENVIRONMENTAL /SOCIAL AWARENESS RAISING	S	*participate in conferences, lectures and workshops (at universities or schools or public events) to explain and disseminate the sustainable business model or the BCORP and benefit corporation model to generate and increase awareness among citizens and consumers regarding sustainable business*	0	1	1	0	1
	S	*open of the production plant to school visits*	0	0	1	0	0
RESPONSIBLE HUMAN BEHAVIOUR	E	*deliver reusable water bottles to each collaborator*	0	0	1	0	0
SOCIAL EXTERNAL COMPENSATION	S	*implement and finance urban redevelopment interventions of the municipality in which the company operates, restoration of works of art or of historical or social interest (e.g. schools)*	1	1	1	1	0
	S	*make a donation to support serious emergencies in the local or national territory (e.g., earthquakes, floods)*	1	1	1	1	1
	S	*make donation to hospitals and healthcare/rehabilitation facilities*	1	1	1	0	1
	S	*support (through donations or sponsorship) local sport associations*	0	1	1	0	0
	S	*collaborate and support (through donations) non-profit associations that operate to support disadvantaged categories (minors, migrants, homeless people, prisons, women victims of violence) or to support vulnerable people (disabled, elderly, people suffering from serious illnesses)*	0	0	1	1	0
	S	*implement initiatives to support developing countries (e.g., construction of schools, health facilities, infrastructure to make drinking water accessible) through collaboration with non-profit associations that operate to support the populations of developing countries*	0	0	1	0	0
	S	*provide scholarships to local students*	0	0	0	1	1
	S	*collaborate with universities to produce degree theses and/or training internships*	0	0	0	1	0
SOCIAL RESOURCE REPLACEMENT	S	*replace old machinery with automatic machinery to improve the ergonomics of workstations and reduce repetitive work loads*	1	1	1	1	0
SOCIALLY RESPONSIBLE HIRING AND CAREERS	S	*pursue gender equality in hiring*	1	1	1	1	1
	S	*hire permanent employees*	1	1	1	1	1
	S	*hire young people*	1	1	1	0	0
SOCIAL INTERNAL COMPENSATION	S	*provide bonuses/prizes on employee pay (often linked to the achievement of objectives)*	1	1	1	1	1
	S	*provide contributions and vouchers for the purchase of children's products, or for babysitting services, or for the payment of nursery school and summer camp fees, contributions or reimbursements for children's education expenses*	1	1	1	1	1
TRAINING	S	*provide employees with professional training*	1	1	1	1	1
	S	*provide employees with transversal training (soft skills including public speaking, effective communication, time and stress management)*	0	0	0	0	1
SOCIAL BONDING	S	*organize moments of sharing between employees (periodic moments of conviviality e.g., at festivity, also providing employees with a specific budget to organize such events between colleagues and/or making company spaces available for the organization of convivial events)*	0	0	1	0	0
SOCIAL INTERNAL ALTERNATIVE	S	*introduce smartworking*	0	0	0	1	1

Table D5. Perlage Srl - evolution over time of sustainable business process practices and patterns

Sustainable Pattern	Sust. Dim	Practice	2017	2018	2019	2020	2021
GREEN PURCHASING	E	*purchase eco-friendly packaging (in recycled paper/FSC certified paper, in biodegradable plastic, in recycled plastic, in compostable material)*	-	1	0	0	0
GREEN WORKPLACE	E	*install a photovoltaic system*	-	1	1	1	1
CIRCULAR PRODUCTION	E	*purify the waste water from the production process and reintroduce the purified water into the environment or into the production process*	-	1	1	0	0
	E	*conduct differentiation and recycling of production waste*	-	1	1	1	1
GREEN PRODUCT LABELING	E	*obtain environmental certification for products (e.g. organic certification, gluten free certification, FSC certification of wood/paper products)*	-	1	1	1	1
GREEN PRODUCT FEATURES	E	*develop eco-sustainable packaging solutions (e.g., by replacing plastic with glass; by creating packaging solutions that do not have disposable parts, with instructions printed directly on the packaging and inks from renewable sources, favouring recycled materials, by reducing weight/quantity of materials used to create the packaging or reduction of overpackaging)*	-	1	1	1	1
GREEN COMPENSATION	E	*collaborate with non-profit associations that work to protect the environment and biodiversity (e.g. associations that operate to reduce waste such as plastic, to protect the sea, that promote organic and sustainable agricultural practices)*	-	0	1	1	1
	E	*compensate for C02 emissions through tree planting and reforestation works*	-	0	0	0	1
PUBLIC ENVIRONMENTAL /SOCIAL AWARENESS RAISING	S	*open of the production plant to visits by citizens*	-	1	0	0	0
	S	*participate in conferences, lectures and workshops (at universities or schools or public events) to explain and disseminate the sustainable business model or the BCORP and benefit corporation model to generate and increase awareness among citizens and consumers regarding sustainable business*	-	1	0	0	0
	E	*raise citizens' awareness of environmental issues and climate change through the organization of particular initiatives (e.g., floral installations in the square on the topic of bees highly threatened by climate change, organization of days dedicated to the topic of climate change, participation in Earth Day)*	-	0	1	0	0
GREEN&SOCIALLY RESPONSIBLE SUPPLIERS	E	*choose suppliers which have environmental certifications*	-	1	1	1	1
SOCIAL INTERNAL COMPENSATION	S	*provide bonuses/prizes on employee pay (often linked to the achievement of objectives)*	-	1	1	0	0
SOCIAL EXTERNAL COMPENSATION	S	*collaborate with universities to produce degree theses and/or training internships*	-	1	1	1	1
	S	*implement and finance urban redevelopment interventions of the municipality in which the company operates, restoration of works of art or of historical or social interest (e.g. schools)*	-	0	0	0	1
SOCIALLY RESPONSIBLE HIRING AND CAREERS	S	*hire permanent employees*	-	1	1	1	1
SOCIAL BONDING	S	*organize moments of sharing between employees (periodic moments of conviviality e.g., at festivity, also providing employees with a specific budget to organize such events between colleagues and/or making company spaces available for the organization of convivial events)*	-	1	1	1	1

Table D6. Omal spa - evolution over time of sustainable business process practices and patterns

Sustainable Pattern	Sust. Dim	Practice	2017	2018	2019	2020	2021
PARTICIPATORY, ETHICAL AND INCLUSIVE GOVERNANCE	na	*prepare ethical code*	1	1	1	1	1
PARTICIPATORY SUSTAINABILITY REPORTING	na	*map stakeholders and engage stakeholders (e.g., through virtual platforms, focus groups or interviews) to conduct a participatory materiality analysis and impact assessment in a participatory manner*	1	1	1	1	-
GREEN COMPENSATION	E	*compensate for C02 emissions through tree planting and reforestation works*	1	1	1	1	-
	E	*compensate for CO2 emissions deriving from internet use/access to the company website by planting trees or acquiring the zero-emission website certification*	1	1	1	1	-

Sustainable Pattern	Sust. Dim	Practice	2017	2018	2019	2020	2021
GREEN WORKPLACE	E	*install a photovoltaic system*	1	1	1	1	1
	E	*achieve buildings' energy efficiency (through the installation of windows with lower thermal transmissibility, insulated panels, replacement of gas boilers with heat pumps, replacement of heating/cooling systems with more energy efficient ones, relamping or replacement of incandescent lights with LED lights)*	1	1	1	0	-
GREEN RESOURCES REPLACEMENT	E	*substitute conventional energy with energy (electricity and gas) produced from renewable sources and from certified suppliers with guarantee of origin (GO)*	1	1	1	1	1
	E	*reduce paper consumption (by digitizing documents, dematerialising communication in shops by replacing advertising billboards or price signs with digital monitors, replacing paper pay slips with digital pay slips, dematerialising production documentation such as product technical data sheets or production orders on workstations)*	1	1	1	1	-
CIRCULAR PRODUCTION	E	*recover energy waste (e.g. hot air) and reuse for heating buildings*	1	1	1	1	-
	E	*conduct differentiation and recycling of production waste*	0	1	1	1	-
	E	*purify the waste water from the production process and reintroduce the purified water into the environment or into the production process*	0	0	1	1	-
GREEN PURCHASING	E	*purchase eco-friendly consumables (recycled paper/unbleached paper/FSC certified paper; plastic free consumables; consumables/stationery made from recycled plastic)*	1	1	1	1	-
	E	*purchase eco-friendly packaging (in recycled paper/FSC certified paper, in biodegradable plastic, in recycled plastic, in compostable material)*	1	1	1	1	-
GREEN PRODUCT FEATURES	E	*create products that can be dismantled and have separable components to encourage correct recycling of the components*	0	1	1	1	-
GREEN&SOCIALLY RESPONSIBLE SUPPLIERS	E/S	*prepare supplier code of conduct including criteria (e.g., product quality, ethical, environmental and social principles) that suppliers are required to respect*	1	1	1	1	-
	E	*conduct supplier assessment according to environmental sustainability criteria*	1	1	1	1	-
	S	*conduct supplier assessment according to social sustainability criteria*	1	1	1	1	-
	E/S	*engage and raise awareness among suppliers to guide them in improving environmental sustainability performance (e.g., on the issues of climate change, eco-friendly packaging, use of renewable energy, low environmental impact transport) and social sustainability performance*	1	1	1	0	-
	E/S	*choose local suppliers to support the local economy and reduce transport CO2 emissions*	1	1	1	1	-
PUBLIC ENVIRONMENTAL /SOCIAL AWARENESS RAISING	S	*participate in conferences, lectures and workshops (at universities or schools or public events) to explain and disseminate the sustainable business model or the BCORP and benefit corporation model to generate and increase awareness among citizens and consumers regarding sustainable business*	1	1	1	0	-
	S	*open of the production plant to school visits*	0	1	0	0	-
SOCIAL EXTERNAL COMPENSATION	E/S	*donate reusable water bottles to children of sport centres*	1	1	1	1	-
	S	*collaborate with universities to produce degree theses and/or training internships*	1	0	1	1	-
	S	*support (through donations or sponsorships) local cultural initiatives (e.g., literary prizes, theatre companies, village festivals)*	1	1	1	0	-
	E/S	*involve employees in voluntary activities (e.g. in support of the elderly, the poor, the vulnerable, also through collaboration with non-profit organisations, in tree planting activities, plastic collection and cleaning of the area, blood donation, etc.)*	1	1	0	0	0
	S	*activate school-work alternation courses and training internships*	1	1	1	1	1
	S	*collaborate and support (through donations) non-profit associations that operate to support disadvantaged categories (minors, migrants, homeless people, prisons, women victims of violence) or to support vulnerable people (disabled, elderly, people suffering from serious illnesses)*	0	0	1	1	1
TRAINING	S	*provide employees with professional training*	1	1	1	1	1
	S	*provide employees with transversal training (English and foreign languages)*	1	0	0	0	0
	S	*provide employees with transversal training (soft skills including public speaking, effective communication, time and stress management)*	1	0	0	0	0
	E/S	*provide employees with transversal training (sustainability, CSR, circular economy, biodiversity, benefit corporation and bcorp system)*	0	1	0	0	0

Sustainable Pattern	Sust. Dim	Practice	2017	2018	2019	2020	2021
QUALITY AND INCLUSIVE WORKPLACE	S	*provide free canteen service*	1	1	1	0	0
SOCIALLY RESPONSIBLE HIRING AND CARRERS	S	*hire permanent employees*	1	1	1	1	0
SOCIAL INTERNAL COMPENSATION	S	*provide vouchers and discounts for supermarkets, shops, restaurants, gyms, fuel, other leisure and cultural activities (travel, cinema, theatres, wellness centres, purchasing books) and other services*	1	0	0	0	0
	S	*activate company library with free access for employees*	1	0	0	0	0
	S	*provide baby bonuses (in case of maternity and paternity of employees)*	0	0	1	0	0
SOCIAL BONDING	S	*organize moments of sharing between employees (periodic moments of conviviality e.g., at festivity, also providing employees with a specific budget to organize such events between colleagues and/or making company spaces available for the organization of convivial events)*	0	1	1	1	1
SOCIAL ENGAGEMENT	S	*collect employees' feedback (on the company climate, level of satisfaction) through internal surveys or other tools (dedicated email address, boxes placed in common areas, dedicated section in the company APP, HR function dedicated to listening employees)*	0	0	0	0	1

Table D7. Zordan Srl - evolution over time of sustainable business process practices and patterns

Sustainable Pattern	Sust. Dim	Practice	2017	2018	2019	2020	2021
GREEN WORKPLACE	E	*install a photovoltaic system*	1	1	1	1	1
	E	*realize green areas in the company headquarters and place green plants in the offices*	0	1	1	1	1
	E	*correct waste disposal (by installing containers for separate waste collection)*	0	0	0	1	1
GREEN RESOURCES REPLACEMENT	E	*substitute conventional energy with energy (electricity and gas) produced from renewable sources and from certified suppliers with guarantee of origin (GO)*	1	1	1	1	1
GREEN RESOURCES MANAGEMENT	E	*reduce paper consumption (by digitizing documents, dematerialising communication in shops by replacing advertising billboards or price signs with digital monitors, replacing paper pay slips with digital pay slips, dematerialising production documentation such as product technical data sheets or production orders on workstations)*	1	1	1	1	1
CIRCULAR PRODUCTION	E	*reuse processing waste to produce energy (e.g. from biomass/biogas) to power production plants or recover and reintroduce production waste into production*	1	1	0	0	0
	E	*conduct differentiation and recycling of production waste*	1	1	1	0	1
GREEN PRODUCT FEATURES	E/S	*analyze the social and environmental impacts of products (e.g. using SLCA methodology)*	0	1	1	1	1
GREEN PURCHASING	E	*purchase environmentally friendly raw materials (e.g., recycled raw materials; FSC certified in the case of paper or wood; organic in the case of agricultural and food products)*	0	1	1	1	1
GREEN COMPENSATION	E	*compensate for CO2 emissions by purchasing carbon credits or financing carbon offsetting projects - which generate certified carbon credits*	0	0	0	0	1
PUBLIC ENVIRONMENTAL /SOCIAL AWARENESS RAISING	S	*participate in conferences, lectures and workshops (at universities or schools or public events) to explain and disseminate the sustainable business model or the BCORP and benefit corporation model to generate and increase awareness among citizens and consumers regarding sustainable business*	1	1	1	1	1
	S	*open of the production plant to school visits*	0	1	0	0	0
GREEN&SOCIALLY RESPONSIBLE SUPPLIERS	E/S	*prepare supplier code of conduct including criteria (e.g., product quality, ethical, environmental and social principles) that suppliers are required to respect*	0	0	1	1	1
	E	*choose suppliers which have environmental certifications*	0	0	0	0	1
SOCIAL EXTERNAL COMPENSATION	S	*support (through donations or sponsorship) local sport associations*	1	0	0	1	1
	S	*collaborate and support (through donations) non-profit associations that operate to support disadvantaged categories (minors, migrants, homeless people,*	1	1	1	1	0

Sustainable Pattern	Sust. Dim	Practice	2017	2018	2019	2020	2021
		prisons, women victims of violence) or to support vulnerable people (disabled, elderly, people suffering from serious illnesses)					
	S	*make donation to hospitals and healthcare/rehabilitation facilities*	1	0	0	0	0
	S	*support (through donations or sponsorships) local cultural initiatives (e.g., literary prizes, theatre companies, village festivals)*	1	1	1	1	1
	S	*activate school-work alternation courses and training internships*	0	1	1	0	1
	S	*collaborate with universities to produce degree theses and/or training internships*	0	0	1	0	1
	S	*donate products (e.g., unsold food products or production surpluses, or processing scraps, or medicines to the community (schools, local charities and associations, schools)*	0	0	0	1	0
	S	*activate training courses for citizens/young people living in the area to encourage the acquisition of particular skills (e.g., linguistic skills, expansion of digital skills, correct use of the web by citizens, coding, entrepreneurship, technical and professional skills) also in collaboration with schools and training institutions*	0	0	0	0	1
QUALITY AND INCLUSIVE WORKPLACE	S	*set up kitchen space for employees who spend their lunch break in the company*	1	1	1	1	1
SOCIAL INTERNAL COMPENSATION	S	*provide bonuses/prizes on employee pay (often linked to the achievement of objectives)*	1	1	0	0	0
	S	*provide vouchers and discounts for supermarkets, shops, restaurants, gyms, fuel, other leisure and cultural activities (travel, cinema, theatres, wellness centres, purchasing books) and other services*	0	1	1	0	0
	S	*set up an online platform to provide welfare tools*	0	0	0	1	0
TRAINING	S	*provide employees with professional training*	1	1	1	1	1
	S	*provide employees with transversal training (English and foreign languages)*	1	1	1	1	1
	E/S	*provide employees with transversal training (sustainability, CSR, circular economy, biodiversity, benefit corporation and bcorp system)*	1	1	1	1	1
	S	*provide employees training by developing skills externally (through participation in courses, conferences or online courses)*	1	1	1	1	1
	S	*provide employees with transversal training (skills on project management, leadership and change management, problem solving, negotiation)*	0	0	0	0	1
SOCIAL BONDING	S	*organize moments of sharing between employees (periodic moments of conviviality e.g., at festivity, also providing employees with a specific budget to organize such events between colleagues and/or making company spaces available for the organization of convivial events)*	1	0	1	0	0
	S	*organize events open to employees' families (e.g., family day-event)*	1	0	1	1	0
	S	*organize leisure/sport activities/moments of reflection and debate on topics of common interest and team building activities (e.g., Lego Serious Play activities, escape rooms, outdoor activities)*	0	1	1	1	1
	S	*establish solidarity fund (into which employees/managers can voluntarily pay sums of money which will be donated free of charge to support the employees in case of need)*	0	0	0	1	1
SOCIAL INTERNAL ALTERNATIVE	S	*introduce flexible working hours (flexible entry/exit times, 7-hours working day, light Friday, afternoon free, part-time hours)*	1	1	0	0	0
	S	*introduce smartworking*	1	1	0	1	1
SOCIAL ENGAGEMENT	S	*collect employees' feedback (on the company climate, level of satisfaction) through internal surveys or other tools (dedicated email address, boxes placed in common areas, dedicated section in the company APP, HR function dedicated to listening employees)*	0	1	1	1	1

Table D8. Amajor Srl - evolution over time of sustainable business process practices and patterns

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
GREEN BUILDING/WORKPLACE	E	*achieve buildings' energy efficiency by installing an energy consumption monitoring system*	0	1	1	0	-
TRAINING	S	*provide employes with professional training*	0	1	1	1	-

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
SOCIAL EXTERNAL COMPENSATION	S	*collaborate and support (through donations) non-profit associations that operate to support disadvantaged categories (minors, migrants, homeless people, prisons, women victims of violence) or to support vulnerable people (disabled, elderly, people suffering from serious illnesses)*	0	1	1	0	-

Table D9. Ayming Italia Srl - evolution over time of sustainable business process practices and patterns

Sustainable Pattern	Sust. Dim	Practice	2017	2018	2019	2020	2021
PARICIPATORY, ETHICAL AND INCLUSIVE GOVERNANCE	NA	*prepare ethical code*	-	1	1	1	1
	na	*promote female leadership*	-	1	1	1	0
	NA	*sign a document on the conflict of interest by the members of board*	-	1	1	0	0
PARTICIPATORY SUSTAINABILITY REPORTING	NA	*map stakeholders and engage stakeholders (e.g., through virtual platforms, focus groups or interviews) to conduct a participatory materiality analysis and impact assessment in a participatory manner*	-	0	0	0	1
GREEN COMPENSATION	E	*compensate for C02 emissions through tree planting and reforestation works*	-	1	1	1	1
	E	*plant a tree for each employee (e.g. on the occasion of a birthday) or for each new member of the company community*	-	0	1	1	0
GREEN RESOURCES REPLACEMENT	E	*substitute traditional company vehicles with ecological vehicles (electric, hybrid or at least Euro6)*	-	1	1	1	0
GREEN RESOURCES MANAGEMENT	E	*reduce energy consumption in the offices (by installing presence/movement sensors for the lighting system; by installing an automatic control unit for automatic switching on/off of the heating/cooling systems when the offices are manned/remote control of the heating and cooling systems; by modulating the temperature in the working environments; by installing large windows to exploit natural light)*	-	1	1	1	0
	E	*reduce the use of plastic (by eliminating disposable plastic from offices and/or the canteen, eliminating plastic water bottles and installing drinking water dispensers in offices; installing bulk drink dispensers in offices; by using only coffee in compostable grains or pods)*	-	0	1	1	0
	E	*reduce energy consumption in the offices (by installing presence/movement sensors for the lighting system; by installing an automatic control unit for automatic switching on/off of the heating/cooling systems when the offices are manned/remote control of the heating and cooling systems; by modulating the temperature in the working environments; by installing large windows to exploit natural light)*	-	1	1	1	1
GREEN WORKPLACE	E	*dispose wastes correctly (by installing containers for separate waste collection)*	-	1	1	1	0
PUBLIC ENVIRONMENTAL /SOCIAL AWARENESS RAISING	S	*participate in conferences, lectures and workshops (at universities or schools or public events) to explain and disseminate the sustainable business model or the BCORP and benefit corporation model to generate and increase awareness among citizens and consumers regarding sustainable business*	-	1	0	1	1
	E	*raise citizens' awareness of environmental issues and climate change through participation/organisation of dedicated public events, meetings and debates on the topic*	-	1	1	1	0
	E	*establish an award aimed at local businesses that have distinguished themselves for environmental sustainability and the protection of the territory*	-	0	1	0	0
GREEN&SOCIALLY RESPONSIBLE SUPPLIERS	E	*conduct supplier assessment according to environmental sustainability criteria*	-	0	1	1	0
	S	*conduct supplier assessment according to social sustainability criteria*	-	0	1	1	0
TRAINING	S	*provide employees with professional training*	-	1	1	1	1
	S	*provide employees with transversal training (knowledge on healthy lifestyle and correct diet)*	-	1	1	1	0
SOCIAL EXTERNAL COMPENSATION	S	*implement and finance urban redevelopment interventions of the municipality in which the company operates, restoration of works of art or of historical or social interest (e.g. schools)*	-	1	0	0	0
	E/S	*involve employees in voluntary activities (e.g. in support of the elderly, the poor, the vulnerable, also through collaboration with non-profit organisations, in tree planting activities, plastic collection and cleaning of the area, blood donation, etc.)*	-	1	1	0	0

Sustainable Pattern	Sust. Dim	Practice	2017	2018	2019	2020	2021
	S	*collaborate and support (through donations) non-profit associations that operate to support disadvantaged categories (minors, migrants, homeless people, prisons, women victims of violence) or to support vulnerable people (disabled, elderly, people suffering from serious illnesses)*	-	0	1	1	0
SOCIAL ENGAGEMENT	S	*collect employees' feedback (on the company climate, level of satisfaction) through internal surveys or other tools (dedicated email address, boxes placed in common areas, dedicated section in the company APP, HR function dedicated to listening employees)*	-	1	1	0	0
	S	*organize moments of discussion between employees and company managers to share work or personal issues and problems, to provide suggestions, to provide feedback on the employees' performance and to identify improvements*	-	1	1	1	0
SOCIAL INTERNAL ALTERNATIVE	S	*introduce flexible working hours (flexible entry/exit times, 7-hours working day, light Friday, afternoon free, part-time hours)*	-	0	1	0	0
	S	*introduce smartworking*	-	0	0	1	1
SOCIAL INTERNAL COMPENSATION	S	*provide vouchers and discounts for supermarkets, shops, restaurants, gyms, fuel, other leisure and cultural activities (travel, cinema, theatres, wellness centres, purchasing books) and other services*	-	0	1	0	0
	S	*provide meal vouchers*	-	0	1	1	0
	S	*provide health services to employees (e.g. 24-hour medical assistance, physiotherapy service, nutritional and psychological consultancy)*	-	*0*	*0*	*1*	*0*

Table D10. DE-LAB Srl - evolution over time of sustainable business process practices and patterns

Sustainable Pattern	Sust. Dim	Practice	2017	2018	2019	2020	2021
PARTICIPATORY, ETHICAL AND INCLUSIVE GOVERNANCE	NA	*prepare ethical code*	-	0	1	1	1
	NA	*adopt Holocracy type governance system (power distributed in defined roles related to a specific company objective, organization of roles in circles that bring together different roles and responsibilities, flattening of the organizational chart, empowerment and delegation of roles)*	-	0	0	1	1
	NA	*involve stakeholders and collect stakeholders' feedback (sharing company results with stakeholders and collecting feedback and ideas for improving the company strategy or investments to be made, to identify stakeholders' needs and expectations)*	-	0	1	1	1
PARTICIPATORY SUSTAINABILITY REPORTING	NA	*map stakeholders and engage stakeholders (e.g., through virtual platforms, focus groups or interviews) to conduct a participatory materiality analysis and impact assessment in a participatory manner*	-	0	0	1	1
GREEN RESOURCES REPLACEMENT	E	*substitute traditional search engine with an environmentally sustainable search engines (e.g. search engine which uses advertising revenues to plant trees)*	-	1	1	1	1
GREEN RESOURCES MANAGEMENT	E	*use eco-friendly institutional communication fonts (i.e., which require less ink for printing)*	-	1	1	1	1
	E	*use eco-friendly paper (recycled, FSC certified, derived from sugar cane)*	-	1	1	1	1
GREEN PURCHASING	E	*purchase eco-friendly consumables (recycled paper/unbleached paper/FSC certified paper; plastic free consumables; consumables/stationery made from recycled plastic)*	-	1	1	1	1
GREEN COMPENSATION	E	*compensate for CO2 emissions deriving from internet use/access to the company website by planting trees or acquiring the zero-emission website certification*	-	0	1	1	1
	E	*compensate for C02 emissions through tree planting and reforestation works*	-	0	1	1	1
PUBLIC ENVIRONMENTAL /SOCIAL AWARENESS RAISING	S	*participate in conferences, lectures and workshops (at universities or schools or public events) to explain and disseminate the sustainable business model or the BCORP and benefit corporation model to generate and increase awareness among citizens and consumers regarding sustainable business*	-	1	1	1	1
RESPONSIBLE HUMAN BEHAVIOUR	E	*encourage eco-sustainable employees' travel (preferring public transport over one's own transport and preferring less impactful means such as the train rather than the plane, or purchasing plane tickets from companies that compensate the emissions)*	-	1	1	1	1
	E/S	*organize car sharing or company car pooling or shuttle service for employees*	-	1	0	0	0

Sustainable Pattern	Sust. Dim	Practice	2017	2018	2019	2020	2021
GREEN&SOCIALLY RESPONSIBLE SUPPLIERS	E/S	*choose local suppliers to support the local economy and reduce transport CO2 emissions*	-	0	1	1	1
SOCIAL EXTERNAL COMPENSATION	S	*collaborate with universities to produce degree theses and/or training internships*	-	1	1	1	1
	S	*make a donation to support serious emergencies in the local or national territory (e.g., earthquakes, floods)*	-	1	0	0	0
	S	*support (through donations or sponsorships) local cultural initiatives (e.g., literary prizes, theatre companies, village festivals)*	-	0	0	0	1
SOCIAL INTERNAL ALTERNATIVE	S	*introduce flexible working hours (flexible entry/exit times, 7-hours working day, light Friday, afternoon free, part-time hours)*	-	1	1	1	1
	S	*introduce smartworking*	-	1	1	1	1
SOCIALLY RESPONSIBLE HIRING AND CAREERS	S	*pursue gender equality in wages*	-	1	1	1	1
TRAINING	S	*provide employees with professional training*	-	1	1	1	1
	S	*provide employees training by developing skills externally (through participation in courses, conferences or online courses)*	-	1	0	0	0
SOCIAL RESOURCE REPLACEMENT	S	*substitute traditional search engine with a socially sustainable search engine (e.g., web browser that uses advertising revenues to support social enterprises, social inclusion initiatives for the weakest group of the population)*	-	0	1	1	1

Table D11. Hospitality Team Srl - evolution over time of sustainable business process practices and patterns

Sustainable Pattern	Sust. Dim	Practice	2017	2018	2019	2020	2021
PARTICIPATORY, ETHICAL AND INCLUSIVE GOVERNANCE	na	*appoint an impact manager*	-	1	1	1	1
GREEN WORKPLACE	E	*dispose wastes correctly (by installing containers for separate waste collection)*	-	1	1	1	1
	E	*realize green areas in the company headquarters and place green plants in the offices*	-	0	1	1	0
	E	*use only ecological and natural products and multipurpose rags to clean spaces*	-	0	0	1	1
GREEN RESOURCES MANAGEMENT	E	*reduce the use of plastic (by eliminating disposable plastic from offices and/or the canteen, eliminating plastic water bottles and installing drinking water dispensers in offices; installing bulk drink dispensers in offices; by using only coffee in compostable grains or pods)*	-	0	0	1	0
	E	*reduce paper consumption (by digitizing documents, dematerialising communication in shops by replacing advertising billboards or price signs with digital monitors, replacing paper pay slips with digital pay slips, dematerialising production documentation such as product technical data sheets or production orders on workstations)*	-	0	0	1	1
GREEN&SOCIALLY RESPONSIBLE SUPPLIERS	E/S	*choose local suppliers to support the local economy and reduce transport CO2 emissions*	-	1	1	1	1
SOCIAL EXTERNAL COMPENSATION	S	*collaborate and support (through donations) non-profit associations that operate to support disadvantaged categories (minors, migrants, homeless people, prisons, women victims of violence) or to support vulnerable people (disabled, elderly, people suffering from serious illnesses)*	-	1	1	0	0
	S	*support (through donations or sponsorships) local cultural initiatives (e.g., literary prizes, theatre companies, village festivals)*	-	1	1	0	0
	S	*collaborate with universities to produce degree theses and/or training internships*	-	0	1	1	1
	S	*donate part of the profits to non-profit organizations and associations*	-	0	1	1	1
SOCIAL RESOURCE REPLACEMENT	S	*replace old desks and workstation with more comfortable desks and workstations (e.g., height-adjustable, large PC screens)*	-	1	0	0	0
SOCIALLY RESPONSIBLE	S	*hire workers from disadvantaged categories (ex-prisoners, refugees, immigrants, people with disabilities or unemployed women over 50)*	-	1	1	1	1

Sustainable Pattern	Sust. Dim	Practice	2017	2018	2019	2020	2021
HIRING AND CAREERS							
SOCIAL BONDING	S	*organize moments of sharing between employees (periodic moments of conviviality e.g., at festivity, also providing employees with a specific budget to organize such events between colleagues and/or making company spaces available for the organization of convivial events)*	-	1	1	1	1
	S	*organize leisure/sport activities/moments of reflection and debate on topics of common interest and team building activities (e.g., Lego Serious Play activities, escape rooms, outdoor activities)*	-	0	0	1	1
SOCIAL INTERNAL ALTERNATIVE	S	*introduce flexible working hours (flexible entry/exit times, 7-hours working day, light Friday, afternoon free, part-time hours)*	-	1	1	1	0
TRAINING	E/S	*provide employees with transversal training (sustainability, CSR, circular economy, biodiversity, benefit corporation and bcorp system)*	-	0	0	1	1
	S	*provide employees with transversal training (soft skills including public speaking, effective communication, time and stress management)*	-	0	0	1	0

Table D12. Izmade Srl - evolution over time of sustainable business process practices and patterns

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
PARTICIPATORY, ETHICAL AND INCLUSIVE GOVERNANCE	NA	*prepare ethical code*	-	1	1	1	1
GREEN COMPENSATION	E	*compensate for C02 emissions through tree planting and reforestation works*	-	0	0	1	1
SOCIAL EXTERNAL COMPENSATION	S	*collaborate with universities to produce degree theses and/or training internships*	-	1	1	1	1
	S	*activate technical/professional training courses for fragile and disadvantaged people (disabled, unemployed, migrants and refugees) aimed at job placement and job accompaniment*	-	1	1	1	1
	S	*activate school-work alternation courses and training internships*	-	0	0	1	1

Table D13. Nativa Srl - evolution over time of sustainable business process practices and patterns

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
PARTICIPATORY, ETHICAL AND INCLUSIVE GOVERNANCE	na	*appoint an impact manager*	1	1	1	1	1
GREEN PURCHASING	E	*purchase eco-friendly consumables (recycled paper/unbleached paper/FSC certified paper; plastic free consumables; consumables/stationery made from recycled plastic)*	0	1	1	0	0
GREEN RESOURCES MANAGEMENT	E	*reduce energy consumption in the offices (by installing presence/movement sensors for the lighting system; by installing an automatic control unit for automatic switching on/off of the heating/cooling systems when the offices are manned/remote control of the heating and cooling systems; by modulating the temperature in the working environments; by installing large windows to exploit natural light)*	0	1	1	0	0
	E	*reduce the use of plastic (by eliminating disposable plastic from offices and/or the canteen, eliminating plastic water bottles and installing drinking water dispensers in offices; installing bulk drink dispensers in offices; by using only coffee in compostable grains or pods)*	0	1	1	0	0
GREEN RESOURCES REPLACEMENT	E	*substitute conventional energy with energy (electricity and gas) produced from renewable sources and from certified suppliers with guarantee of origin (GO)*	0	0	0	0	1
GREEN COMPENSATION	E	*compensate for CO2 emissions by purchasing carbon credits or financing carbon offsetting projects - which generate certified carbon credits*	0	0	0	0	1
PUBLIC ENVIRONMENTAL /SOCIAL	S	*participate in conferences, lectures and workshops (at universities or schools or public events) to explain and disseminate the sustainable business model or the BCORP and benefit corporation model to generate and increase awareness among citizens and consumers regarding sustainable business*	1	1	1	1	1

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
AWARENESS RAISING							
RESPONSIBLE HUMAN BEHAVIOUR	E	*optimize and reduce employees travel also by encouraging the use of remote working*	0	0	1	0	0
	E	*encourage eco-sustainable employees' travel (preferring public transport over one's own transport and preferring less impactful means such as the train rather than the plane, or purchasing plane tickets from companies that compensate the emissions)*	0	0	1	0	0
	E	*assess the employee's carbon footprint (also taking into account eating habits, type of home/energy sources used and consumption of employees in smart working)*	0	0	0	1	0
SOCIAL EXTERNAL COMPENSATION	S	*collaborate with universities to produce degree theses and/or training internships*	1	1	1	1	1
	E/S	*involve employees in volunteering activities (e.g., in the support of the elderly, the poor, the vulnerable, in tree planting activities, plastic collection and cleaning of the area, blood donation) also through collaboration with non-profit organizations*	0	0	0	0	1
SOCIAL INTERNAL ALTERNATIVE	S	*introduce flexible working hours (flexible entry/exit times, 7-hours working day, light Friday, afternoon free, part-time hours)*	1	1	1	1	0
	S	*introduce smartworking*	0	1	1	1	0
SOCIAL ENGAGEMENT	S	*collect employees' feedback (on the company climate, level of satisfaction) through internal surveys or other tools (dedicated email address, boxes placed in common areas, dedicated section in the company APP, HR function dedicated to listening employees)*	1	0	1	1	1
TRAINING	S	*provide employees with professional training*	1	1	1	1	1
	S	*provide employees with transversal training (e.g., philosophy workshops, first aid courses, courses for caregivers, courses on complementary pensions and conscious management of savings, or other unspecified transversal skills)*	1	1	1	1	1
SOCIAL BONDING	S	*organize moments of sharing between employees (periodic moments of conviviality e.g., at festivity, also providing employees with a specific budget to organize such events between colleagues and/or making company spaces available for the organization of convivial events)*	0	1	1	1	0
	S	*organize leisure/sport activities/moments of reflection and debate on topics of common interest and team building activities (e.g., Lego Serious Play activities, escape rooms, outdoor activities)*	0	0	0	1	1
SOCIAL INTERNAL COMPENSATION	S	*provide bonuses/prizes on employee pay (often linked to the achievement of objectives)*	0	1	0	0	0
SOCIALLY RESPONSIBLE HIRING AND CAREES	S	*hire young people*	0	0	0	1	0
	S	*introduce onboarding programs for new employees*	0	0	0	0	1
SOCIAL PURCHASING	S	*purchase raw materials/consumables or products for sale with Fair Trade certification*	0	1	1	0	0

Table D14. Primate Srl - evolution over time of sustainable business process practices and patterns

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
PARTICIPATORY, ETHICAL AND INCLUSIVE GOVERNANCE	na	*appoint an impact manager*	-	1	1	1	1
GREEN WORKPLACE	E	*dispose wastes correctly (by installing containers for separate waste collection)*	-	1	1	1	1
GREEN RESOURCES MANAGEMENT	E	*establish company headquarters in a co-working building*	-	1	1	1	1
	E	*reduce energy consumption in the offices (by installing presence/movement sensors for the lighting system; by installing an automatic control unit for automatic switching on/off of the heating/cooling systems when the offices are manned/remote control of the heating and cooling systems; by modulating the temperature in the working environments; by installing large windows to exploit natural light)*	-	0	1	1	1

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
	E	*reduce paper consumption (by digitizing documents, dematerialising communication in shops by replacing advertising billboards or price signs with digital monitors, replacing paper pay slips with digital pay slips, dematerialising production documentation such as product technical data sheets or production orders on workstations)*	-	0	1	1	1
GREEN RESOURCES REPLACEMENT	E	*adopt cloud sharing instead sending emails*	-	0	1	1	1
GREEN PURCHASING	E	*purchase eco-friendly consumables (recycled paper/unbleached paper/FSC certified paper; plastic free consumables; consumables/stationery made from recycled plastic)*	-	0	1	1	1
RESPONSIBLE HUMAN BEHAVIOUR	E	*optimize and reduce employees travel also by encouraging the use of remote working*	-	0	1	1	1
	E	*encourage eco-sustainable employees' travel (preferring public transport over one's own transport and preferring less impactful means such as the train rather than the plane, or purchasing plane tickets from companies that compensate the emissions)*	-	0	1	1	1
PUBLIC ENVIRONMENTAL /SOCIAL AWARENESS RAISING	S	*participate in conferences, lectures and workshops (at universities or schools or public events) to explain and disseminate the sustainable business model or the BCORP and benefit corporation model to generate and increase awareness among citizens and consumers regarding sustainable business*	-	0	0	0	1
SOCIAL EXTERNAL COMPENSATION	S	*provide pro-bono services (e.g., aimed at NGOs or local charities)*	-	1	1	1	1
	S	*collaborate with universities to produce degree theses and/or training internships*	-	0	1	1	1
	S	*make a monetary donation to international or national non-profit organizations*	-	0	0	1	1
SOCIAL INTERNAL ALTERNATIVE	S	*introduce smartworking*	-	0	1	1	1
SOCIALLY RESPONSIBLE HIRING AND CAREERS	S	*pursue gender equality in hiring*	-	0	1	1	1
	S	*pursue gender equality in wages*	-	0	1	1	1
SOCIAL OUTSOURCING	E/S	*transfer part of processes to partners who share the same values (e.g. transfer the cleaning of spaces to social cooperatives or social companies that operate in socially sustainable manner)*	-	0	1	1	1

Table D15. Ventitrenta Srl - evolution over time of sustainable business process practices and patterns

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
PARTICIPATORY, ETHICAL AND INCLUSIVE GOVERNANCE	na	*involve stakeholders and collect stakeholders' feedback (sharing company results with stakeholders and collecting feedback and ideas for improving the company strategy or investments to be made, to identify stakeholders' needs and expectations)*	-	0	0	1	1
GREEN RESOURCES REPLACEMENT	E	*substitute conventional energy with energy (electricity and gas) produced from renewable sources and from certified suppliers with guarantee of origin (GO)*	-	1	1	1	1
GREEN WORKPLACE	E	*dispose wastes correctly (by installing containers for separate waste collection)*	-	1	1	1	1
GREEN RESOURCES MANAGEMENT	E	*reduce the use of plastic (by eliminating disposable plastic from offices and/or the canteen, eliminating plastic water bottles and installing drinking water dispensers in offices; installing bulk drink dispensers in offices; by using only coffee in compostable grains or pods)*	-	1	1	1	1
	E	*establish company headquarters in a co-working building*	-	1	1	1	1
GREEN PURCHASING	E	*purchase refurbished PCs for offices*	-	0	0	1	1
GREEN&SOCIALLY RESPONSIBLE SUPPLIERS	E/S	*choose Italian suppliers*	-	1	1	1	1

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
PUBLIC ENVIRONMENTAL /SOCIAL AWARENESS RAISING	E	*raise citizens' awareness of environmental issues and climate change through participation/organisation of dedicated public events, meetings and debates on the topic*	-	0	0	1	1
TRAINING	S	*provide employees with professional training*	-	1	1	1	1
SOCIAL INTERNAL ALTERNATIVE	S	*introduce smartworking*	-	0	0	1	1
SOCIAL BONDING	S	*organize moments of sharing between employees (periodic moments of conviviality e.g., at festivity, also providing employees with a specific budget to organize such events between colleagues and/or making company spaces available for the organization of convivial events)*	-	0	0	1	1
RESPONSIBLE HUMAN BEHAVIOUR	E	*deliver reusable water bottles to each collaborator*	-	1	1	1	1
	E	*assessment of employee's carbon footprint (also taking into account eating habits, type of home/energy sources used and consumption of employees in smart working)*	-	0	1	0	0
RESPONSIBLE HUMAN BEHAVIOUR	E	*optimize and reduce employees travel also by encouraging the use of remote working*	-	0	0	0	1

Table D16. Way2Global Srl - evolution over time of sustainable business process practices and patterns

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
PARTICIPATORY, ETHICAL AND INCLUSIVE GOVERNANCE	na	*promote female leadership*	0	1	1	1	1
	na	*appoint an impact manager*	1	1	1	1	1
	na	*adopt Holocracy type governance system (power distributed in defined roles related to a specific company objective, organization of roles in circles that bring together different roles and responsibilities, flattening of the organizational chart, empowerment and delegation of roles)*	0	0	0	1	1
	na	*involve stakeholders and collect stakeholders' feedback (sharing company results with stakeholders and collecting feedback and ideas for improving the company strategy or investments to be made, to identify stakeholders' needs and expectations)*	0	0	0	0	0
	na	*prepare ethical code*	0	0	0	0	1
	na	*establish a Whistleblowing system to monitor discrimination and detrimental behaviour of the human dignity by encouraging employees to anonymously report any violations, illicit, incorrect, discriminatory and harmful internal behaviour*	0	0	0	0	1
PARTICIPATORY SUSTAINABILITY REPORTING	na	*map stakeholders and engage stakeholders (e.g., through virtual platforms, focus groups or interviews) to conduct a participatory materiality analysis and impact assessment in a participatory manner*	0	0	0	1	1
GREEN WORKPLACE	E	*achieve buildings' energy efficiency by installing an energy consumption monitoring system*	1	1	1	1	1
GREEN RESOURCES REPLACEMENT	E	*substitute conventional energy with energy (electricity and gas) produced from renewable sources and from certified suppliers with guarantee of origin (GO)*	0	1	1	1	1
	E	*substitute traditional company vehicles with ecological vehicles (electric, hybrid or at least Euro6)*	0	1	1	1	0
GREEN COMPENSATION	*E*	*compensate for C02 emissions through tree planting and reforestation works*	0	1	1	0	0
GREEN RESOURCES MANAGEMENT	*E*	*reduce energy consumption in the offices (by installing presence/movement sensors for the lighting system; by installing an automatic control unit for automatic switching on/off of the heating/cooling systems when the offices are manned/remote control of the heating and cooling systems; by modulating the temperature in the working environments; by installing large windows to exploit natural light)*	0	1	1	1	0
PUBLIC ENVIRONMENTAL /SOCIAL	S	*participate in conferences, lectures and workshops (at universities or schools or public events) to explain and disseminate the sustainable business model or the BCORP and benefit corporation model to generate and increase awareness among citizens and consumers regarding sustainable business*	0	1	1	1	0

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
AWARENESS RAISING							
RESPONSIBLE HUMAN BEHAVIOUR	E	*assessment of employee's carbon footprint (also taking into account eating habits, type of home/energy sources used and consumption of employees in smart working)*	0	1	1	1	0
	E	*deliver reusable water bottles to each collaborator*	0	0	1	0	0
	E	*environmentally sustainable employees' home-work travel (encouraging the use of bicycles for travel by making bicycles available, providing vouchers for the purchase of bicycles, setting up a reward mechanism for those who use bicycles, making cars/bikes/scooters available electric vehicles, encourage the use of public transport by providing green mobility bonuses and subsidizing public transport passes)*	0	0	1	1	0
	E	*optimize and reduce employees travel also by encouraging the use of remote working*	0	0	1	1	0
GREEN&SOCIALLY RESPONSIBLE SUPPLIERS	E/S	*engage and raise awareness among suppliers to guide them in improving environmental sustainability performance (e.g., on the issues of climate change, eco-friendly packaging, use of renewable energy, low environmental impact transport) and social sustainability performance*	0	1	1	1	1
	E/S	*choose local suppliers to support the local economy and reduce transport CO2 emissions*	0	1	1	1	1
	E	*conduct supplier assessment according to environmental sustainability criteria*	0	0	1	1	1
	S	*conduct supplier assessment according to social sustainability criteria*	0	0	1	1	1
SOCIAL EXTERNAL COMPENSATION	*S*	*collaborate with universities to produce degree theses and/or training internships*	0	1	1	1	1
	S	*provide pro-bono services (e.g., aimed at NGOs or local charities)*	0	1	1	0	0
	S	*make a monetary donation to international or national non-profit organizations*	0	1	1	1	1
	E/S	*involve employees in volunteering activities (e.g., in the support of the elderly, the poor, the vulnerable, in tree planting activities, plastic collection and cleaning of the area, blood donation) also through collaboration with non-profit organizations*	0	0	1	1	1
	S	*donation of PCs (even used in the office) to local charities*	0	0	0	0	1
PARTICIPATORY PRODUCT/ SERVICE DESIGN	S	*involve customers in the product/service design*	0	1	1	1	1
SOCIAL SELLING	S	*collect customers' feedback on the level of satisfaction related to products/services*	0	1	1	1	1
SOCIAL BONDING	S	*establish a solidarity bank/hours fund (possibility for employees to transfer vacation days to other colleagues free of charge)*	0	1	1	0	0
	S	*organize moments of sharing between employees (periodic moments of conviviality e.g., at festivity, also providing employees with a specific budget to organize such events between colleagues and/or making company spaces available for the organization of convivial events)*	0	1	1	0	1
	S	*organize leisure/sport activities/moments of reflection and debate on topics of common interest and team building activities (e.g., Lego Serious Play activities, escape rooms, outdoor activities)*	0	1	1	1	1
SOCIAL ENGAGEMENT	S	*introduce reverse mentoring*	0	1	1	1	0
SOCIAL INTERNAL ALTERNATIVE	*S*	*introduce flexible working hours (flexible entry/exit times, 7-hours working day, light Friday, afternoon free, part-time hours)*	0	1	1	1	1
	S	*introduce smartworking*	0	1	1	1	1
SOCIAL INTERNAL COMPENSATION	S	*provide meal vouchers*	0	1	1	0	0
	S	*introduce leaves, paid time off and reduced working hours for employees with children (e.g. new parents, parents with children up to 6/7 years old, baby week)*	0	1	1	0	0
	S	*provide baby bonuses (in case of maternity and paternity of employees)*	0	1	1	1	0
	S	*introduce slow working when female employees return from maternity leave*	0	0	1	1	0
	S	*provide cash bonuses and/or leave on the occasion of employees' weddings or civil unions*	0	1	1	0	0

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
	S	*provide time-saving services for employees (possibility for employees to receive groceries or medicines in the company, laundry service with collection and return in the company, car washing service in the company, ironing service)*	0	1	1	0	1
	S	*activate company gym and wellness areas*	0	1	1	1	1
	S	*provide health services to employees (e.g. 24-hour medical assistance, physiotherapy service, nutritional and psychological consultancy)*	0	1	1	0	0
	S	*provide bonuses/prizes on employee pay (often linked to the achievement of objectives)*	0	1	1	0	1
SOCIALLY RESPONSIBLE HIRING AND CAREERS	S	*pursue gender equality in hiring*	0	1	1	1	1
	S	*pursue gender equality in wages*	0	1	0	1	1
	S	*hire workers from the area in which the company operates*	0	1	1	1	1
TRAINING	*S*	*provide employees with professional training*	0	1	1	1	1
	S	*provide employees training by developing skills externally (through participation in courses, conferences or online courses)*	0	1	0	0	0

Table D17. Greenapes Srl - evolution over time of sustainable business process practices and patterns

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
GREEN WORKPLACE	E	*establish company headquarters in a building built according to energy saving criteria*	0	1	1	1	1
PUBLIC ENVIRONMENTAL /SOCIAL AWARENESS RAISING	*E/S*	*establish challenges/contests/hackathons/social challenges open to the community to raise citizens' awareness of environmental issues (e.g., climate change, challenges for plastic collection and land cleaning, reduction of the environmental impacts of behaviours, challenge to encourage the adoption of ethically and environmentally sustainable behaviors and purchases)*	1	1	1	1	1
	E	*raise citizens' awareness of environmental issues and climate change through the organization of particular initiatives (e.g., floral installations in the square on the topic of bees highly threatened by climate change, organization of days dedicated to the topic of climate change, participation in Earth Day)*	0	0	0	1	1
SOCIAL EXTERNAL COMPENSATION	*S*	*promote the adoption of healthy and correct lifestyles (through nutrition education in schools, launch of contests, participation/organization of events, launch of communication campaigns, publication of books)*	1	1	1	1	1
	S	*collaborate with universities to produce degree theses and/or training internships*	0	-	1	0	0

Table D18. Mondora Srl - evolution over time of sustainable business process practices and patterns

Sustainable Pattern	Sust. Dim	Practice	2017	2018	2019	2020	2021
PARTICIPATORY, ETHICAL AND INCLUSIVE GOVERNANCE	na	*adopt a sociocratic governance system (based on distribution of power and responsibilities, equality of roles, teamwork and objective-based work)*	0	0	0	1	1
GREEN PURCHASING	*E*	*purchase eco-friendly consumables (recycled paper/unbleached paper/FSC certified paper; plastic free consumables; consumables/stationery made from recycled plastic)*	0	1	0	0	0
GREEN RESOURCES MANAGEMENT	E	*reduce paper consumption (by digitizing documents, dematerialising communication in shops by replacing advertising billboards or price signs with digital monitors, replacing paper pay slips with digital pay slips, dematerialising production documentation such as product technical data sheets or production orders on workstations)*	0	1	1	1	1
	E	*reduce the use of plastic (by eliminating disposable plastic from offices and/or the canteen, eliminating plastic water bottles and installing drinking water dispensers in offices; installing bulk drink dispensers in offices; by using only coffee in compostable grains or pods)*	0	1	1	1	1
GREEN RESOURCES REPLACEMENT	*E*	*substitute digital service provider (such as email hosting) with an environmentally sustainable server provider (e.g. which offsets its CO2 emissions, which has a plan to reduce its carbon footprint or whose data centers run only on electricity from renewable sources)*	0	0	1	1	1
	E	*encourage environmentally sustainable employees' home-work travel (by encouraging the use of bicycles by making bicycles available, providing vouchers for the purchase of bicycles, setting up a reward mechanism for those who use*	1	1	1	1	0

Sustainable Pattern	Sust. Dim	Practice	2017	2018	2019	2020	2021
		bicycles, making electric cars/bikes/scooters available, encouraging the use of public transport by providing green mobility bonuses and subsidizing public transport passes)					
	E/S	*recommend a list of environmentally sustainable and/or ethical suppliers for the purchase of home office furniture and equipment*	0	0	0	0	0
RESPONSIBLE HUMAN BEHAVIOUR	S	*encourage employees to stay in family-run or AirBnB structures when work traveling to support the local economy of the territories*	0	1	0	0	0
	E	*optimize and reduce employees travel also by encouraging the use of remote working*	0	0	0	0	0
	E	*deliver reusable water bottles to each collaborator*	0	1	0	0	0
	S	*assign an impact project to each newly hired worker (linked to each individual's sensitivity and possibilities, e.g. waste collection, digital literacy projects) to be carried out, measured and reported*	0	0	0	0	1
PUBLIC ENVIRONMENTAL /SOCIAL AWARENESS RAISING	S	*participate in conferences, lectures and workshops (at universities or schools or public events) to explain and disseminate the sustainable business model or the BCORP and benefit corporation model to generate and increase awareness among citizens and consumers regarding sustainable business*	1	1	1	1	1
	E	*activate training courses (both in schools and aimed at the community) on environmental sustainability issues (e.g. energy management, waste recycling and differentiation, environmental education)*	0	0	1	1	0
GREEN&SOCIALLY RESPONSIBLE SUPPLIERS	E/S	*choose local suppliers to support the local economy and reduce transport CO2 emissions*	0	1	0	1	0
SOCIAL INTERNAL COMPENSATION	S	*provide bonuses/prizes on employee pay (often linked to the achievement of objectives)*	1	0	0	0	0
	S	*provide bonuses to cover expenses for employees who study at university*	1	0	0	0	0
	S	*organize meditation courses for employees*	0	1	1	1	0
	S	*provide health services to employees (e.g. 24-hour medical assistance, physiotherapy service, nutritional and psychological consultancy)*	0	0	0	1	0
	S	*provide Christmas gifts to employees (in money, in products from local charities or local gastronomic businesses, or cultural gifts such as tickets for cultural events)*	0	0	0	1	0
SOCIALLY RESPONSIBLE HIRING AND CAREERS	S	*introduce onboarding programs for new employees*	1	0	0	0	0
	S	*promote salary transparency (internal salary sharing)*	0	1	0	0	0
SOCIAL EXTERNAL COMPENSATION	S	*activate training courses for citizens/young people living in the area to encourage the acquisition of particular skills (e.g., linguistic skills, expansion of digital skills, correct use of the web by citizens, coding, entrepreneurship, technical and professional skills) also in collaboration with schools and training institutions*	1	0	1	1	0
	S	*support for typical local activities (e.g., companies that produce food and wine products or other typical local agricultural products) through the purchase of products (e.g., to create Christmas gifts) or directly by employees*	1	1	1	1	1
	E/S	*involve employees in volunteering activities (e.g., in the support of the elderly, the poor, the vulnerable, in tree planting activities, plastic collection and cleaning of the area, blood donation) also through collaboration with non-profit organizations*	0	1	1	1	0
	S	*donation of PCs (even used in the office) to local charities*	0	0	0	1	1
	S	*activate technical/professional training courses for fragile and disadvantaged people (disabled, unemployed, migrants and refugees) aimed at job placement and job accompaniment*	0	0	1	1	0
	S	*collaborate with universities to produce degree theses and/or training internships*	0	0	0	0	0
SOCIAL INTERNAL ALTERNATIVE	S	*introduce smartworking*	1	1	1	1	1
	S	*introduce flexible working hours (flexible entry/exit times, 7-hours working day, light Friday, afternoon free, part-time hours)*	0	1	1	1	1
SOCIAL ENGAGEMENT	S	*involve employees in the company decision making*	1	1	0	0	0
	S	*collect employees' feedback (on the company climate, level of satisfaction) through internal surveys or other tools (dedicated email address, boxes placed*	1	1	1	1	1

Sustainable Pattern	Sust. Dim	Practice	2017	2018	2019	2020	2021
		in common areas, dedicated section in the company APP, HR function dedicated to listening employees)					
	S	*organize moments of discussion between employees and company managers to share work or personal issues and problems, to provide suggestions, to provide feedback on the employees' performance and to identify improvements*	0	1	0	0	0
SOCIAL OUTSOURCING	E/S	*transfer part of processes to partners who share the same values (e.g. transfer the cleaning of spaces to social cooperatives or social companies that operate in socially sustainable manner)*	0	1	0	0	0
SOCIAL BONDING	S	*organize leisure/sport activities/moments of reflection and debate on topics of common interest and team building activities (e.g., Lego Serious Play activities, escape rooms, outdoor activities)*	0	1	1	1	1
	S	*organize moments of sharing between employees (periodic moments of conviviality e.g., at festivity, also providing employees with a specific budget to organize such events between colleagues and/or making company spaces available for the organization of convivial events)*	0	1	1	1	1
	S	*establish a solidarity bank/hours fund (possibility for employees to transfer vacation days to other colleagues free of charge)*	0	0	1	1	0
	S	*provide parachutes for employees who intend to carry out work experience abroad (giving them the possibility of carrying out the experience abroad and returning to the company after a year under the same economic conditions)*	0	0	1	1	0
	S	*organize moments of internal discussion between employees*	0	0	0	1	0
	S	*promote the socialization and involvement of employees who work remotely (by organizing online sharing moments such as online coffee breaks and online gym lessons, online socializing events e.g. on metaverse platforms)*	0	0	0	0	0
	S	*establish a community with former employees (by involving former employees in moments of discussion and/or company events, by providing Christmas gifts also for former employees)*	0	0	0	0	0
TRAINING	S	*provide employees with professional training*	0	1	1	0	0
	S	*provide employees with transversal training (English and foreign languages)*	0	1	1	0	0
	S	*organize meeting for internal knowledge sharing in which each employee teaches something to other colleagues*	0	1	1	1	0
	S	*provide employees with transversal training (e.g., philosophy workshops, first aid courses, courses for caregivers, courses on complementary pensions and conscious management of savings, or other unspecified transversal skills)*	0	1	1	0	0
QUALITY AND INCLUSIVE WORKPLACE	S	*organize failure party (celebration of failures that an employee may encounter)*	0	0	1	1	0
	S	*use inclusive language (e.g., through illustrations that portray people without distinction of gender, ethnicity and any possible diversity, publishing content with subtitles or lis language) among employees*	0	0	0	0	1

Table D19. Dermophisiologique Srl - evolution over time of sustainable business process practices and patterns

Sustainable Pattern	Sust. Dim	Practice	2017	2018	2019	2020	2021
GREEN RESOURCES MANAGEMENT	E	*reduce paper consumption (by digitizing documents, dematerialising communication in shops by replacing advertising billboards or price signs with digital monitors, replacing paper pay slips with digital pay slips, dematerialising production documentation such as product technical data sheets or production orders on workstations)*	1	-	1	1	1
GREEN PRODUCT FEATURES	E	*develop eco-sustainable packaging solutions (e.g., by replacing plastic with glass; by creating packaging solutions that do not have disposable parts, with instructions printed directly on the packaging and inks from renewable sources, favouring recycled materials, by reducing weight/quantity of materials used to create the packaging or reduction of overpackaging)*	1	-	1	1	1
GREEN COMPENSATION	E	*donate % of revenues from sale to environmental protection associations*	0	-	1	1	0
GREEN PURCHASING	E	*purchase environmentally friendly raw materials (e.g., recycled raw materials; FSC certified in the case of paper or wood; organic in the case of agricultural and food products)*	0	-	1	1	1
PUBLIC ENVIRONMENTAL /SOCIAL	S	*participate in conferences, lectures and workshops (at universities or schools or public events) to explain and disseminate the sustainable business model or the BCORP and benefit corporation model to generate and increase awareness among citizens and consumers regarding sustainable business*	1	-	1	0	0

Sustainable Pattern	Sust. Dim	Practice	2017	2018	2019	2020	2021
AWARENESS RAISING							
GREEN&SOCIALLY RESPONSIBLE SUPPLIERS	E/S	*choose Italian suppliers*	1	-	1	1	1
	E/S	*choose local suppliers to support the local economy and reduce transport CO2 emissions*	1	-	1	1	1
SOCIAL EXTERNAL COMPENSATION	S	*collaborate/finance universities/research centers to carry out research projects*	1	-	1	1	0
SOCIAL EXTERNAL COMPENSATION	S	*donate revenues (or % of them) deriving from the sale of a particular product line to finance non-profit associations and charities (including those for the protection of animals) / donate revenues (or % of them) deriving from a certain number of shopping days s (e.g. Black Friday) to finance associations and charities/ donate revenues (or % of them) deriving from the sale of products to finance social initiatives (e.g. construction of wells and water purification plants in water-critical areas, financing of scholarships in Africa)*	1	-	1	1	1
	S	*collaborate and support (through donations) non-profit associations that operate to support disadvantaged categories (minors, migrants, homeless people, prisons, women victims of violence) or to support vulnerable people (disabled, elderly, people suffering from serious illnesses)*	0	-	1	1	1
SOCIAL INTERNAL COMPENSATION	S	*provide bonuses/prizes on employee pay (often linked to the achievement of objectives)*	1	-	1	1	1
SOCIALLY RESPONSIBLE HIRING AND CAREERS	S	*pursue gender equality in hiring*	1	-	1	1	1
	S	*hire permanent employees*	1	-	1	1	1
TRAINING	S	*provide employees with professional training*	1	-	1	1	1
	E/S	*provide online professional training courses to reduce the environmental impact of travel*	0	-	1	1	1

Table D20. Farmacie Fiorentine Spa- evolution over time of sustainable business process practices and patterns

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
PUBLIC ENVIRONMENTAL /SOCIAL AWARENESS RAISING	E	*activate training courses (both in schools and aimed at the community) on environmental sustainability issues (e.g. energy management, waste recycling and differentiation, environmental education)*	-	1	1	0	0
SOCIAL EXTERNAL COMPENSATION	S	*donate products (e.g., unsold food products or production surpluses, or processing scraps, or medicines to the community (schools, local charities and associations, schools)*	-	1	1	1	1
	S	*promote the adoption of healthy and correct lifestyles (through nutrition education in schools, launch of contests, participation/organization of events, launch of communication campaigns, publication of books)*	-	0	1	1	0
	S	*activate technical/professional training courses for fragile and disadvantaged people (disabled, unemployed, migrants and refugees) aimed at job placement and job accompaniment*	-	0	0	1	0
	S	*collaborate and support (through donations) non-profit associations that operate to support disadvantaged categories (minors, migrants, homeless people, prisons, women victims of violence) or to support vulnerable people (disabled, elderly, people suffering from serious illnesses)*	-	0	0	0	1
SOCIAL SELLING	S	*sell products at controlled prices (e.g. para-pharmaceutical products) to benefit the weakest groups of the population*	-	0	1	1	1
	S	*activate home delivery service of products*	-	0	0	0	1

Table D21. Forgreen Spa - evolution over time of sustainable business process practices and patterns

Sustainable Pattern	Sust. Dim.	Business Practice	2017	2018	2019	2020	2021
PARTICIPATORY, ETHICAL AND INCLUSIVE GOVERNANCE	na	*establish a Whistleblowing system to monitor discrimination and detrimental behaviour of the human dignity by encouraging employees to anonymously report any violations, illicit, incorrect, discriminatory and harmful internal behaviour*	-	1	1	1	1

PARTICIPATORY SUSTAINABILITY REPORTING	na	*map stakeholders and engage stakeholders (e.g., through virtual platforms, focus groups or interviews) to conduct a participatory materiality analysis and impact assessment in a participatory manner*	-	0	1	1	1
PUBLIC ENVIRONMENTAL /SOCIAL AWARENESS RAISING	S	*open of the production plant to school visits*	-	1	1	0	1
	S	*open of the production plant to visits by citizens*	-	1	1	0	0
	E	*raise citizens' awareness of environmental issues and climate change through participation/organisation of dedicated public events, meetings and debates on the topic*	-	1	1	1	1
	E/S	*establish challenges/contests/hackathons/social challenges open to the community to raise citizens' awareness of environmental issues (e.g., climate change, challenges for plastic collection and land cleaning, reduction of the environmental impacts of behaviours, challenge to encourage the adoption of ethically and environmentally sustainable behaviours and purchases)*	-	0	0	0	1
SOCIAL EXTERNAL COMPENSATION	S	*promote the adoption of healthy and correct lifestyles (through nutrition education in the schools, launch of contests, participation/organization of events, launch of communication campaigns, publication of books)*	-	1	1	0	1
	S	*activate school-work alternation courses and training internships*	-	0	0	0	1
	S	*collaborate and support (through donations) non-profit associations that operate to support disadvantaged categories (minors, migrants, homeless people, prisons, women victims of violence) or to support vulnerable people (disabled, elderly, people suffering from serious illnesses)*	-	0	0	0	1
	S	*implement initiatives to support developing countries (e.g., construction of schools, health facilities, infrastructure to make drinking water accessible) through collaboration with non-profit associations that operate to support the populations of developing countries*	-	1	1	1	1
	S	*support (through donations or sponsorships) local cultural initiatives (e.g., literary prizes, theatre companies, village festivals)*	-	0	0	0	1
	S	*make Christmas gifts to employees from charities*	-	0	0	0	1
SOCIAL INTERNAL COMPENSATION	S	*provide Christmas gifts to employees (in money, in products from local charities or local gastronomic businesses, or cultural gifts such as tickets for cultural events)*	-	0	1	1	1
SOCIAL ENGAGEMENT	S	*organize moments of discussion between employees and company managers to share work or personal issues and problems, to provide suggestions, to provide feedback on the employees' performance and to identify improvements*	-	0	0	1	1
SOCIAL INTERNAL ALTERNATIVE	S	*introduce flexible working hours (flexible entry/exit times, 7-hours working day, light Friday, afternoon free, part-time hours)*	-	0	0	1	1
TRAINING	S	*provide employees with professional training*	-	0	0	0	1
	E/S	*provide employees with transversal training (sustainability, CSR, circular economy, biodiversity, benefit corporation and bcorp system)*	-	0	0	0	1

Table D22. Save the Duck Spa - evolution over time of sustainable business process practices and patterns

Sustainable Pattern	**Sust. Dim.**	**Practice**	**2017**	**2018**	**2019**	**2020**	**2021**
PARTICIPATORY, ETHICAL AND INCLUSIVE GOVERNANCE	na	*prepare ethical code*	-	1	1	1	1
	na	*establish a Whistleblowing system to monitor discrimination and detrimental behaviour of the human dignity by encouraging employees to anonymously report any violations, illicit, incorrect, discriminatory and harmful internal behaviour*	-	0	0	1	1
PARTIIPATORY SUSTAINABILITY REPORTING	na	*map stakeholders and engage stakeholders (e.g., through virtual platforms, focus groups or interviews) to conduct a participatory materiality analysis and impact assessment in a participatory manner*	-	1	1	1	1
GREEN COMPENSATION	E	*make donation to non-profit associations that work to protect the environment*	-	1	1	1	1
	E	*implement initiatives to promote the biodiversity of the area (planting trees of various species in the area, adopting beehives and placing hives in the area to encourage biodiversity)*	-	0	1	1	1
	E	*compensate for CO2 emissions by purchasing carbon credits or financing carbon offset projects (which generate certified carbon credits)*	-	0	0	0	1
GREEN BUILDING/WORKPLACE	E	*redevelop buildings through the use of eco-sustainable materials (e.g. eco-sustainable paints, photocatalytic paints, furnishings made of eco-sustainable materials such as wood, seat fabrics made from recycled materials, soundproof floors; office furniture made with recycled and eco-compatible materials)*	-	1	1	1	1

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
GREEN WORKPLACE	E	*achieve buildings' energy efficiency (through the installation of windows with lower thermal transmissibility, insulated panels, replacement of gas boilers with heat pumps, replacement of heating/cooling systems with more energy efficient ones, relamping or replacement of incandescent lights with LED lights)*	-	1	1	1	1
GREEN PURCHASING	E	*purchase environmentally friendly raw materials (e.g., recycled raw materials; FSC certified in the case of paper or wood; organic in the case of agricultural and food products)*	-	1	1	1	1
	E	*purchase eco-friendly packaging (in recycled paper/FSC certified paper, in biodegradable plastic, in recycled plastic, in compostable material)*	-	1	1	1	1
GREEN PRODUCT VARIANT	E	*launch product lines made with environmentally friendly materials (e.g., organic materials, recycled materials, waste materials, or waste food raw materials because they are not suitable for large-scale distribution)*	-	1	1	1	1
GREEN RESOURCES MANAGEMENT	E	*reduce the use of plastic (by eliminating disposable plastic from offices and/or the canteen, eliminating plastic water bottles and installing drinking water dispensers in offices; installing bulk drink dispensers in offices; by using only coffee in compostable grains or pods)*	-	0	1	0	0
GREEN RESOURCES REPLACEMENT	E	*substitute traditional company vehicles with ecological vehicles (electric, hybrid or at least Euro6)*	-	0	0	1	0
	E	*substitute conventional energy with energy (electricity and gas) produced from renewable sources and from certified suppliers with guarantee of origin (GO)*	-	0	0	0	1
GREEN PRODUCT FEATURES	E/S	*analyze the social and environmental impacts of products (e.g. using SLCA methodology)*	-	0	0	0	1
GREEN&SOCIALLY RESPONSIBLE SUPPLIERS	E/S	*prepare supplier code of conduct including criteria (e.g., product quality, ethical, environmental and social principles) that suppliers are required to respect*	-	1	1	1	1
	S	*conduct supplier assessment according to social sustainability criteria*	-	1	1	1	1
PUBLIC ENVIRONMENTAL /SOCIAL AWARENESS RAISING	E/S	*establish an award for degree theses that propose innovative solutions to combat climate change or that focus on the theme of sustainability*	-	0	1	1	1
	S	*participate in conferences, lectures and workshops (at universities or schools or public events) to explain and disseminate the sustainable business model or the BCORP and benefit corporation model to generate and increase awareness among citizens and consumers regarding sustainable business*	-	0	0	0	1
SOCIAL EXTERNAL COMPENSATION	S	*donate revenues (or % of them) deriving from the sale of a particular product line to finance non-profit associations and charities (including those for the protection of animals) / donate revenues (or % of them) deriving from a certain number of shopping days s (e.g. Black Friday) to finance associations and charities/ donate revenues (or % of them) deriving from the sale of products to finance social initiatives (e.g. construction of wells and water purification plants in water-critical areas, financing of scholarships in Africa)*	-	1	1	1	1
	S	*collaborate and support (through donations) non-profit associations that operate to support disadvantaged categories (minors, migrants, homeless people, prisons, women victims of violence) or to support vulnerable people (disabled, elderly, people suffering from serious illnesses)*	-	1	1	1	1
	S	*donate products (e.g., unsold food products or production surpluses, or processing scraps, or medicines to the community (schools, local charities and associations, schools)*	-	0	0	0	1
	S	*collaborate with universities to produce degree theses and/or training internships*	-	0	0	0	1
SOCIAL INTERNAL COMPENSATION	S	*set up an online platform to provide welfare tools*	-	1	1	1	1
	S	*activate company gym and wellness areas*	-	0	1	0	0
SOCIAL ENGAGEMENT	S	*collect employees' feedback (on the company climate, level of satisfaction) through internal surveys or other tools (dedicated email address, boxes placed in common areas, dedicated section in the company APP, HR function dedicated to listening employees)*	-	1	1	1	1
SOCIALLY RESPONSIBLE HIRING AND CAREERS	S	*hire permanent employees*	-	1	1	1	1
	S	*pursue gender equality in hiring*	-	0	1	1	1
TRAINING	S	*provide employees with professional training*	-	1	1	1	1
	S	*provide employees with transversal training (English and foreign languages)*	-	0	1	1	0

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
SOCIAL INTERNAL ALTERNATIVE	S	*introduce smartworking*	-	0	0	1	1

Table D23. Sagelio Srl - evolution over time of sustainable business process practices and patterns

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
PARTICIPATORY, ETHICAL AND INCLUSIVE GOVERNANCE	na	*involve stakehoders and collect stakeholders' feedback (sharing company results with stakeholders and collecting feedback and ideas for improving the company strategy or investments to be made, to identify stakeholders' needs and expectations)*	0	0	0	1	1
GREEN RESOURCES REPLACEMENT	E	*substitute traditional company vehicles with ecological vehicles (electric, hybrid or at least Euro6)*	0	1	1	1	1
	E	*substitute conventional energy with energy (electricity and gas) produced from renewable sources and from certified suppliers with guarantee of origin (GO)*	0	1	1	1	1
GREEN COMPENSATION	E	*compensate for products sold (e.g. by planting a tree every time a certain quantity of products sold is reached; collecting of a quantity of plastic equivalent to the quantity of products sold; planting a tree for each new affiliated seller; planting a tree for each new contracted service/customer)*	0	0	0	1	1
GREEN LOGISTIC AND WAREHOUSING	E	*use carriers and transport services that reduce polluting emissions or carriers that offset their environmental impact (by requiring an additional cost to cover the costs of CO2 compensation)*	0	0	0	0	1
PUBLIC ENVIRONMENTAL /SOCIAL AWARENESS RAISING	S	*participate in conferences, lectures and workshops (at universities or schools or public events) to explain and disseminate the sustainable business model or the BCORP and benefit corporation model to generate and increase awareness among citizens and consumers regarding sustainable business*	0	1	1	1	1
SOCIAL EXTERNAL COMPENSATION	S	*support (through donations or sponsorships) local cultural initiatives (e.g., literary prizes, theatre companies, village festivals)*	0	1	1	0	0

Table D24. Slow Food Promozione srl - evolution over time of sustainable business process practices and patterns

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
GREEN WORKPLACE	E	*dispose wastes correctly (by installing containers for separate waste collection)*	-	1	1	1	-
GREEN RESOURCES REPLACEMENT	E	*substitute conventional energy with energy (electricity and gas) produced from renewable sources and from certified suppliers with guarantee of origin (GO)*	-	1	1	1	-
GREEN RESOURCES MANAGEMENT	E	*reduce the use of plastic (by eliminating disposable plastic from offices and/or the canteen, eliminating plastic water bottles and installing drinking water dispensers in offices; installing bulk drink dispensers in offices; by using only coffee in compostable grains or pods)*	-	1	1	1	-
GREEN PURCHASING	E	*purchase eco-friendly consumables (recycled paper/unbleached paper/FSC certified paper; plastic free consumables; consumables/stationery made from recycled plastic)*	-	0	1	0	-
RESPONSIBLE HUMAN BEHAVIOUR	E/S	*organize car sharing or company car pooling or shuttle service for employees*	-	1	0	0	-
	E	*encourage environmentally sustainable employees' home-work travel (encouraging the use of bicycles for travel by making bicycles available, providing vouchers for the purchase of bicycles, setting up a reward mechanism for those who use bicycles, making cars/bikes/scooters available electric vehicles, encourage the use of public transport by providing green mobility bonuses and subsidizing public transport passes)*	-	1	0	0	-
SOCIAL EXTERNAL COMPENSATION	S	*donate products (e.g., unsold food products or production surpluses, or processing scraps, or medicines to the community (schools, local charities and associations, schools)*	-	1	1	0	-
	S	*donate revenues (or % of them) deriving from the sale of a particular product line to finance non-profit associations and charities (including those for the protection of animals) / donate revenues (or % of them) deriving from a certain number of shopping days s (e.g. Black Friday) to finance associations and charities/ donate revenues (or % of them) deriving from the sale of products to finance social initiatives (e.g. construction of wells and water purification plants in water-critical areas, financing of scholarships in Africa)*	-	1	0	0	-

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
	S	*promote the adoption of healthy and correct lifestyles (through nutrition education in schools, launch of contests, participation/organization of events, launch of communication campaigns, publication of books)*	-	0	1	1	-
SOCIAL INTERNAL ALTERNATIVE	S	*introduce smartworking*	-	1	1	1	-
SOCIAL BONDING	S	*establish solidarity fund (into which employees/managers can voluntarily pay sums of money which will be donated free of charge to support the employees in case of need)*	-	0	0	1	-

Table D25. Evolvere Spa - evolution over time of sustainable business process practices and patterns

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
PARTICIPATORY, ETHICAL AND INCLUSIVE GOVERNANCE	na	*prepare ethical code*	1	1	1	1	1
PARTICIPATORY SUSTAINABILITY REPORTING	na	*map stakeholders and engage stakeholders (e.g., through virtual platforms, focus groups or interviews) to conduct a participatory materiality analysis and impact assessment in a participatory manner*	1	1	1	1	1
GREEN WORKPLACE	E	*install indoor pollutant detection sensors in offices*	0	0	0	0	1
GREEN PURCHASING	E	*purchase eco-friendly consumables (recycled paper/unbleached paper/FSC certified paper; plastic free consumables; consumables/stationery made from recycled plastic)*	0	0	0	0	1
GREEN RESOURCES MANAGEMENT	E	*reduce the use of plastic (by eliminating disposable plastic from offices and/or the canteen, eliminating plastic water bottles and installing drinking water dispensers in offices; installing bulk drink dispensers in offices; by using only coffee in compostable grains or pods)*	0	0	0	0	1
PUBLIC ENVIRONMENTAL /SOCIAL AWARENESS RAISING	S	*participate in conferences, lectures and workshops (at universities or schools or public events) to explain and disseminate the sustainable business model or the BCORP and benefit corporation model to generate and increase awareness among citizens and consumers regarding sustainable business*	0	0	0	0	1
SOCIAL INTERNAL ALTERNATIVE	S	*introduce flexible working hours (flexible entry/exit times, 7-hours working day, light Friday, afternoon free, part-time hours)*	1	1	1	1	1
SOCIAL ENGAGEMENT	S	*collect employees' feedback (on the company climate, level of satisfaction) through internal surveys or other tools (dedicated email address, boxes placed in common areas, dedicated section in the company APP, HR function dedicated to listening employees)*	1	1	1	1	1
	S	*communicate towards employees on corporate values and the results obtained by the company (e.g., through periodic meetings, newsletters, signage, noticeboards, digital screens, company magazines)*	0	1	1	1	1
SOCIALLY RESPONSIBLE HIRING AND CAREERS	S	*hire permanent employees*	1	1	1	1	1
	S	*introduce onboarding programs for new employees*	0	0	0	0	1
TRAINING	S	*provide employees with professional training*	1	1	0	0	1
	S	*provide employees with transversal training (English and foreign languages)*	0	1	0	0	0
	S	*provide employees with transversal training (digital knowledge e.g., digital skills, cybersecurity)*	0	1	0	0	0
	S	*provide employees with transversal training (e.g., philosophy workshops, first aid courses, courses for caregivers, courses on complementary pensions and conscious management of savings, or other unspecified transversal skills)*	0	0	0	0	1
	E/S	*provide employees with transversal training (sustainability, CSR, circular economy, biodiversity, benefit corporation and bcorp system)*	0	0	0	0	1
SOCIAL BONDING	S	*organize events open to employees' families (e.g., family day-event)*	0	0	1	0	0
SOCIAL EXTERNAL COMPENSATION	S	*collaborate with universities to produce degree theses and/or training internships*	0	0	0	1	1
SOCIAL INTERNAL COMPENSATION	S	*introduce slow working when female employees return from maternity leave*	0	1	0	0	0

Table D26. People Management LAB - evolution over time of sustainable business process practices and patterns

Sustainable Pattern	Sust. Dim.	Practice	2017	2018	2019	2020	2021
PUBLIC ENVIRONMENTAL /SOCIAL AWARENESS RAISING	E	*activate training courses (both in schools and aimed at the community) on environmental sustainability issues (e.g. energy management, waste recycling and differentiation, environmental education)*	0	1	0	0	0
SOCIAL INTERNAL ALTERNATIVE	S	*introduce flexible working hours (flexible entry/exit times, 7-hours working day, light Friday, afternoon free, part-time hours)*	1	1	1	1	1
SOCIAL EXTERNAL COMPENSATION	S	*collaborate/finance universities/research centers to carry out research projects*	0	1	1	1	1
	S	*provide pro-bono services (e.g., aimed at NGOs or local charities)*	0	1	1	1	1
	S	*collaborate and support (through donations) non-profit associations that operate to support disadvantaged categories (minors, migrants, homeless people, prisons, women victims of violence) or to support vulnerable people (disabled, elderly, people suffering from serious illnesses)*	0	0	1	0	1
SOCIAL INTERNAL COMPENSATION	S	*provide bonuses/prizes on employee pay (often linked to the achievement of objectives)*	0	0	1	0	1
SOCIAL ENGAGEMENT	S	*collect employees' feedback (on the company climate, level of satisfaction) through internal surveys or other tools (dedicated email address, boxes placed in common areas, dedicated section in the company APP, HR function dedicated to listening employees)*	0	0	1	0	0
TRAINING	S	*provide employees with professional training*	0	0	1	1	1

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