UNIVERSITÀ POLITECNICA DELLE MARCHE
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INTEGRATING SDGs INTO MANAGEMENT ACCOUNTING AND CONTROL SYSTEMS: A MULTIPLE CASE STUDY

Supervisor:
Prof.ssa Maria Serena Chiucchi

Co-supervisor:
Prof.ssa Paola Demartini

Tesi di Dottorato di:
Miriam Corrado

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A mio figlio, Filippo

"Che tu possa sempre sognare in grande,
sorridere delle piccole cose,
imparare ogni giorno una cosa diversa.

Che tu possa crescere ogni anno guardando
con orgoglio il passato e con curiosità il futuro.

Che il tuo cuore possa sorridere sempre
e tu possa essere semplicemente felice."

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INTRODUCTION

Since the seminal Brundtland Report, the concept of sustainable development has guided the global sustainable agenda and gained traction and salience among a broad range of actors. With the recent evolution of sustainability concepts and practices, the importance of sustainability issues has increased significantly within the global political and business agenda. In particular, organizations no longer have the responsibility and accountability only for financial resources as the commitment to account for economic, environmental and social impacts and the use of environmental and social resources become more significant for a wide range of stakeholders (Laine et al., 2021). With the recent issuance of Agenda 2030, which promotes 17 Sustainable Developments Goals (SDGs), the role played by organizations has been strengthened in achieving sustainable development and SDGs-related research has begun to emerge in business and management disciplines (Bebbington & Unerman, 2018).

Furthermore, the advancement of the international and intergovernmental initiatives and the development of standards and guidelines lead to the emergence of several sustainability requirements and the development of accounting practices for sustainability over time. In this context, sustainability becomes for companies an urgent necessity rather than a choice (Maas et al., 2016a). In particular, the interest on the relationship between management accounting and control systems and sustainability has started to gain momentum, due to the increasing need for

companies to manage their sustainability information and performance not only externally, but also internally.

Streams of research mainly address the role of environmental accounting and eco-control systems to promote cleaner production through the efficient use of environmental resources (Yagi & Kokubu, 2020; Burritt et al. 2019; Zou et al., 2019; Figge & Hahn, 2013) and contributes to ecological and environmental sustainability (Rehman et al., 2020; Baker, 2018), as well as the role of management control systems in enabling an effective CSR strategy implementation (Adib et al., 2020; Arjaliès & Mundy, 2013; Abdalla et al., 2014). Similarly, other lines of inquiries concern the development of performance measurement practices and tools and the design and use of Sustainable Control Systems. In the latter, the problem of integration has started to be addressed since the seminal work of Gond et al. (2012), in which additional challenges have been addressed to the more recent evolution of management accounting and control systems also coming from the socio-economical contexts in which organizations operate.

The new perspective provided by the SDGs agenda, by focusing on all three dimensions of sustainability and by including global sustainability issues such as poverty, health and education (the so-called wicked problems), offers both an opportunity and need for research to advance, refocus and become more impactful in management and accounting literature (Bebbington & Unerman, 2018; 2020). The concept of sustainability embedded in the SDGs framework seems promising

in renovating interest in a research area which is crucial to the extent that companies operate in an unstable socio-economic context which is moving rapidly, where management accounting and control may provide "innovative strategic responses" (Chapman, 2005a, p. 1).

By taking into account the complexity of management accounting and control systems, the evolution of its definition and its main challenges addressed in literature (Merchant & Otley, 2020; Berry et al., 2009), as well as the growing awareness of the key role played by management control systems in supporting both strategic and operational processes (Ferreira & Otley, 2009; Malmi & Brown, 2008; Langfield-Smith, 2006; Simons, 1995), the research aim of the thesis is to further investigate the development of management accounting and control systems in light of recent development in corporate sustainability.

To this end, a systematic literature review of the studies concerning management accounting and control systems for sustainability is conducted in order to deepen the understanding of an emerging literature that is experiencing a growing development in the last ten years. The systematic literature review leads to the identification of research gaps and to the formulation of research questions.

In order to fill these gaps and to address the call for studies on management accounting and control systems for sustainability and on the last edge of sustainable development and corporate sustainability, given by the SDGs, this thesis examines the following research questions:

R1 - How are SDGs embedded into management accounting and control systems in organizations?

R2 - Which levers and barriers do companies need to consider when implementing SDGs into management accounting and control systems?

To answer the research questions, theoretical insights from the neo-institutional perspective of organizations (Di Maggio & Powell, 1983) are combined with empirical findings derived from a multiple case study. In detail, in order to disentangle the relationship between management accounting and control and sustainability from a macro and micro evidence of explanation, this thesis builds upon the institutional toolkit theorized Lounsbury (1997) and adopted by Ball & Craig (2010) in the context of social and environmental accounting. This theoretical lens has been used to "read" the empirical evidence collected during the multiple case study conducted within three Italian companies operating in the manufacturing, mobility and textile and apparel sectors, respectively. The companies represented a suitable setting because they are at an early stage of development of management accounting and control systems for sustainability and they are experimenting and implementing new systems to evaluate their performance for the achievement of the SDGs, therefore representing the initiating event of an institutional change.

This work aims to contribute to prior literature concerning management accounting and control for sustainability by providing a comprehensive view on

how organizations adapt different types of accounting and controls systems simultaneously, from strategic to operational processes, when they integrate sustainability elements in existing organizational practices. Furthermore, this study contributes to SDGs-related accounting literature by providing some insights on how the companies are integrating some aspects of the SDGs into their management accounting and control systems and it provides food for thought for companies engaged in integrating the SDGs into management accounting and control systems by evidencing the opportunities and the limits of SDGs implementation at an entity-level.

The thesis is articulated in four chapters as follows. The first chapter provides a more detailed description of the background of the thesis and a systematic review of the main studies concerning management accounting and control systems for sustainability. Firstly, it illustrates early studies related to management accounting and control systems to better understand how this field of research develops and which challenges and key features have been arisen over time. Similarly, the development of sustainability concepts and practices is illustrated to understand the background and the recent development in the context of corporate sustainability.

After illustrating the early development of management accounting and control systems for sustainability in both accounting and control stands of research, the most recent literature since Gond et al.'s (2012) seminal work is reviewed to show the most relevant evolutions on the topic under investigation which represent the

literature domain of this thesis. The systematic literature review leads to the identification of the main gaps, after which the research questions are delineated.

The second chapter shows the theoretical lens used to interpret the topic under investigation. First, the chapter presents the main elements of the institutional theory, mainly driven by the new-institutional perspective developed by Di Maggio & Powell (1983, 1991). The chapter continues by illustrating the relevance of the institutional perspective in the sustainability management accoutring and control literature. Finally, the institutional "tool kit" developed by Lounsbury (1997) is described in order to offer a valuable theoretical lens to interpret the relationship between management accounting and control systems and sustainability.

The third chapter presents the multiple case study conducted to help answer the research questions. First, the chapter provides explanations about the research methodology, the choice of the multiple case study method as well as the processes of data collection and data analysis. Then, it provides an overview of the companies selected for the multiple case study.

The fourth chapter illustrates the empirical evidence in the form of six dimensions related to management accounting and control systems and based on Ferreira & Otley's framework (2009). Finally, the main findings are discussed adopting the theoretical lens illustrated in the previous chapter. Ultimately, the conclusions summarize the main findings, outlining the theoretical contributions and practical implications and identifying limitations and future research avenues.

CHAPTER 1

MANAGEMENT ACCOUNTING AND CONTROL FOR SUSTAINABILITY: A SYSTEMATIC LITERATURE REVIEW

Summary: 1.1. Introduction; 1.2 Management Accounting and Control Systems; 1.3 The evolution of sustainability concept and practices; 1.4 The emerging of Management Accounting and Control for sustainability; *1.4.1 Accounting for sustainability; 1.4.2 The rising of Sustainability Control Systems*; 1.5 The interplay between Management Accounting and Control Systems and sustainability in the last decade: a systematic literature review; *1.5.1 The methodology; 1.5.2 Descriptive analysis; 1.5.3. Thematic analysis;* 1.6 Management Accounting and Control for sustainability: research gap and further direction.

1.1 Introduction

This chapter provides a review of the main contribution to Management Accounting and Control for sustainability. Before reviewing the interplay between Management Accounting and Control Systems and sustainability, the research background is outlined by illustrating the definitions of Management Accounting and Control and the most relevant frameworks provided in the literature (section 1.2). The rising of environmental and social concerns in the socio-economical contexts led to the evolution of the concept of sustainability and the emergence of new sustainability corporate practices (section 1.3). In response to this new challenging scenario, several scholars started to investigate new forms of accounting and to focus on new conceptions of control systems able to meet

sustainability requirements (section 1.4). After illustrating the main evolution in the accounting research field (sub-section 1.4.1), the definition of Sustainability Control Systems is provided (sub-section 1.4.2). Management Accounting and Control for sustainability represent an emerging stream of research. To gain an in-depth comprehension on this topic the section 1.5 will present a systematic review of the main studies developed in the last decade, which investigate the relationship between management accounting, management control systems and sustainability providing a descriptive and thematic analysis of the main contributions (sub-section 1.5.1 and sub-section 1.5.2). Then, section 1.6 will delineate the main research gaps and the research questions.

1.2 Management Accounting and Control Systems

In the management research field, the concepts of "management accounting" and "management control" systems have been widely debated and different definitions and framework have been proposed to clearly define the meaning of Management Accounting and Control Systems.

In undertaking this challenge, some Authors provide a distinct and clear definition of each term and they illustrate how management accounting and control systems evolved in response to the need for organizations to address the challenges of operating in uncertain environment and in contexts where increasing innovation is required (Otley 2016; Chenhall & Moers, 2015; Chenhall, 2003). For example, Chenhall (2003) defined "management accounting" as a "collection of practices,

such as budgeting or product costing", while "management control systems" as a broader concept that encompass the systemic use of management accounting (i.e., management accounting systems) to assist managerial decision making and "includes other controls such as personal or clan controls" (p. 129). Similarly, Laine et al. (2021, p. 58) explained that "most often, management accounting refers to practices focused on financial information, and includes a wide range of institutionalised practices such as cost accounting, budgeting and investment appraisals. Management controls are then considered to be a broader set of things, including all systems, tools and practices designed for and used in an organisation to affect the activities, behaviour and decisions of the employees so that they are in line with the organisation's overall goals".

At the same time, a large body of literature refers to both concepts in conjunction due to their interrelated and exchangeable nature (Laine et al., 2021; Beusch, 2020; Otley, 2016; Ferreira & Merchant, 1992). Prior studies (Otley, 2016; Ferreira & Merchant, 1992) offer a review of the field research in Management Accounting and Control (abbreviated also as "MAC"). In particular, Otley (2016) explains the interplay between management accounting and management control and why there is a need to broaden the scope of management accounting research by including some aspects of management control systems. In this vein, more recent studies provide a single definition encompassing the main characteristics that have emerged over time in the management accounting and control systems research

field. For example, Laine et al. (2021) stated that "Management Accounting and Control generally refers to accounting tools, practices and methodologies used inside an organisation to assist managers and other individuals in strategic and operational decision-making" (p. 58). Similarly, Beusch (2020) states that management accounting and control systems refer to "an internal perspective that is primarily aimed at the provision and use of information to managers and employees within the organizations to make informed business decisions and assist in the formulation and implementation of an organization's strategy" (p. 35).

Over time the boundary between management accounting and management control systems has become not always clear as the evolving of management accounting practices from a more traditional and hierarchical approach toward decision-making and control-oriented approaches created an overlap (Otley, 2016; Chenhall & Moers, 2015). The growing relevance of non-financial performance, the need to extend control systems beyond organizational boundaries lead the development of new management accounting techniques to support more complex management control systems, intended as "a set of many formal and informal input, process and output controls that are used by management to achieve organizational goals [and that] are connected by many complementary relationships" (Chenhall & Moers, 2015, p. 1). In other words, management control systems are used in combination with management accounting information as the management

accounting changed with a variety of new techniques that strengthened its role in organizational decision-making and control processes (Otley, 2016).

Alongside the view to consider and assess the interplay between accounting information systems and controls systems, well recognized also in prior literature (Abernethy and Chua, 1996; Otley, 1980), other streams of research have focused on the key role of management accounting and control systems in supporting strategy formulation and implementation (Ferreira & Otley, 2009; Langfield-Smith, 2006), as well as in supporting and influencing strategic processes and innovation (Dixon, 1993; Simons, 1995). Management accounting and control systems moved from the traditional concept as passive tool to assist managers in their decision-making process, through more formal and financial quantifiable information, to a more active and powerful tool that include a broad scope of information (e.g., markets, customers, non-financial information, predictive information etc.) to support also informal forms of control (i.e., values, beliefs, culture etc.) (Chenhall, 2003)[1]. Accordingly, management accounting and control began to include issues pertaining to both strategic and operational control in contrast to what has been

[1] According to a more positivistic and contingent approaches, conventional management control systems are perceived as passive tools designed to support managers' decision-making processes, while according to the sociological approach, management control systems actively provide to the managers the power to achieve their own objectives (Chenhall, 2003).

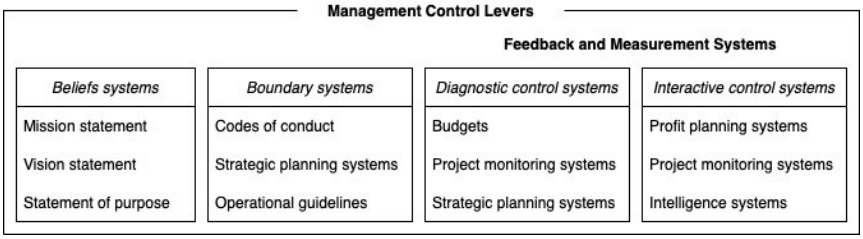
affirmed by Anthony (1965) in early studies related to management control systems (Otley, 2016)[2].

In the management accounting field, along with the evolution of traditional cost accounting techniques, such as the activity-based costing, other strategic-oriented techniques have been developed and often handled together in the research stream of "strategic management accounting" (Simmonds, 1981; Dixon, 1993; see Cinquini & Tenucci, 2010, for a review of the main strategic management accounting techniques). Similarly, the relationship between management control systems and strategy begins to be widely explored in academia by providing different strands of research (Chenhall, 2003; Langfield-Smith, 1997 among others). For example, some studies put their attention on the associations between management control systems and strategy typologies (Govindarajan & Gupta, 1985; Simons, 1987; Chenhall & Morris, 1991), as well as on the role of management control systems in influencing strategy changes (Roberts, 1990; Archer & Otley, 1991; Chapman, 2005b; Abernethy et al. 2021). Other studies develop a stream of research on the role of performance measurement systems and tools (such as the Balanced Scorecard) in implementing and monitoring strategies (among others Kaplan & Norton, 1992; Lynch & Cross, 1991).

[2] The framework proposed by Anthony (1965) suggests a strict separation between strategic planning, management control and operational control, which represent the three main components of the organizational planning and control systems.

In this vein, by showing how management control systems may support strategy, further definitions have been provided. Among others, Simons (1995) contributed to this field of study by proposing a tool for implementing and controlling the business strategy (Ferreira & Otley, 2009). In particular, Simons (1995) outlines how top management use formal control systems as "levers" in the implementation of business strategy by defining management control systems as "the formal, information-based routines and procedures managers use to maintain or alter patterns in organizational activities" (Simons, 1995, p. 5). Simons (1995) introduces a framework (figure 1.1) according to which four key constructs are necessary for a successful implementation of the strategy are linked to four control systems: "beliefs systems", used to define purpose, values and level of desired performance as guidance to opportunity-seeking behaviour; "boundary systems", which limit the domain where companies seek new opportunities; "diagnostic control systems", involving feedback systems to monitor, assess and reward the achievement of specific performance goals; "interactive control systems", used to encourage organizational learning and the developing of new ideas and strategies.

Figure 1.1-The "Levers of Control" Framework



Source: Elaboration from Simons (1990, p. 180)

The framework proposed by Simons (1995) - the so called "LOC framework" - represents a key milestone for the taxonomy of management accounting and control systems. This framework helps to describe how management control systems comprise multiple controls and different use of management accounting and how it supports formulating and implementing strategy for innovation (Chenhall & Moers, 2015). Furthermore, Simons (1995) put the attention on "formal" and "information-based" routines and procedures (e.g., plans, budgets etc.) and on how these stimulate informal processes that affect behavior. Firstly, the focus on information-based systems as key component of control systems "to alter patterns in organizational activities" underlines the importance of viewing the management accounting as part of control package. Secondly, Simons (1995) contributes to broadening the role of management control systems providing a more complex conceptualization to the use of management control system not only to effect strategic change, but also to manage behavior (Berry et al. 2009; Langfield-Smith, 2006).

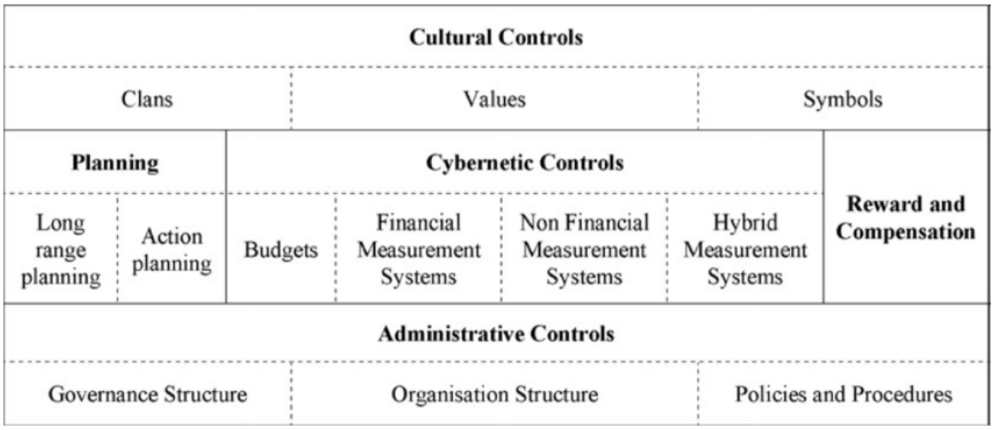
The focus on behavioral control become for some Authors significant in defining what constitutes the organizational control systems, another stream of research developed over time in the management accounting and control research field. For example, Flamholtz et al. (1985) defined control as "attempts by the organization to increase the probability that individuals will behave in ways that will lead to the attainment of organizational objectives" (p. 35). Similarly,

Abernethy and Chua (1996) defined the organizational control system "as a combination of control mechanisms designed and implemented by management to increase the probability that organizational actors will behave in ways consistent with the objectives of the dominant organizational coalition" (p. 573). The definitions assume that managers employ control systems to support their decision-making activities and to direct employees' behavior (i.e., behavioral control) to achieve organizational goals.

The capability of management control systems to influence employee behavior beyond providing better information for decision making represent a key feature for Malmi & Brown (2008), who define management control systems as "all devices and systems managers use to ensure that the behaviors and the decisions of their employees are consistent with the organization's objectives and strategies but exclude pure decision-making support systems" (p.290). The definition provided by Malmi & Brown (2008) underlines the difference between systems designed to obtain information for decision-making and systems put in place to hold organization members accountable for their behavior. Indeed, according to the Authors, a control system includes mechanisms to monitor goal congruence and behavior of employees. Without those monitoring mechanisms the system is a "decision support or information system", rather than a control system (Malmi & Brown, 2008, p. 290). In the same way, accounting systems that are designed to support decision-making at any organizational level but leave unmonitored the use

of those systems that management put in place to direct employee behavior, should not be considered management control systems (Malmi & Brown, 2008). Based on this consideration, Malmi & Brown (2008) conceptualized the management control systems as a "package of controls" involving different types of controls purposefully designed and coordinated: planning, cybernetic, reward and compensation, administrative and cultural controls (figure 1.2). In particular, the planning, cybernetic, reward and compensation controls should represent what Flamholtz et al. (1985) defined "the core control mechanisms": planning, measurement, feedback and evaluation-reward.

Figure 1.2 - Management control systems package



Source: Malmi & Brown (2008, p. 291)

The framework proposed by Malmi & Brown provides a broader picture of management control systems by including different parts and sub-systems to be treated as a package rather than as individual systems (Beusch, 2020; Maas et al. 2016b). Furthermore, the framework allows to map all the tools and practices

organizations can use and develop to achieve organizational goals and to monitor the performance organizations want to achieve with specific strategies in place (Beusch, 2020; Maas et al. 2016b; Malmi & Brown, 2008).

Another framework which represents a research tool for describing the structure and the operation of management control systems is the one proposed by Ferreira & Otley in 2009. More specifically, the Authors, by elaborating a performance management systems framework based on 12 questions, define management control systems "as the evolving formal and informal mechanisms, processes, systems, and networks used by organizations for conveying the key objectives and goals elicited by management, for assisting the strategic process and ongoing management through analysis, planning, measurement, control, rewarding, and broadly managing performance, and for supporting and facilitating organizational learning and change" (Ferrera & Otley, 2009, p. 264). However, the definition and the framework proposed by Ferreira & Otley (2009) include a broad range of managerial activities, including strategic formulation and implementation, that require more complex and extensive analysis in the organizational context (from the vision and mission to reward systems and information flows). Hence, management control systems result in being complex and affected by different elements that are coupled in various ways.

In this vein, Ferreira & Otley's framework (2009) further contributes to the literature by delineating the difference between management control intended as a

"system" and the notion of "control package"[3], as proposed by Malmi & Brown (2008), that is highly debated in academia (Grabner & Moers, 2013; Chenhall & Moers, 2015; Merchant & Otley, 2020). As stated by Grabner & Moers (2013), "the notion of management control as a package cannot be used interchangeably with the notion of management control as a system, as the latter assumes conscious decisions on the design of interdependent controls. […] The management control as a package can be composed of a set of management control systems and/or a set of independent management control practices addressing unrelated control problems" (p. 410). As a result, on the basis of the different interpretation that is given to the concept of management control, some consequences arise for the development of assumption in management control research: a "package of controls" assumes that the elements of the package act collectively and they can be studied individually if no systematic relationship exists between the various set of controls; a "system of controls", where one control may act as a complement or substitute for another control, needs to consider the interdependency of the controls mechanisms acting in a more integrated and coordinated way (Chenhall & Moers, 2015; Merchant & Otley, 2020).

In conclusion, several Authors investigated different aspects of control systems design and use adopting different theoretical approaches (Berry et al., 2009). From

[3] The term "package" appears for the first time in the management control literature in Otley (1980), which discussed about control package to define a set of loosely coupled control elements assembled less coherently compared to a system of controls (Ferreira & Otley, 2009; Merchant & Otley, 2020).

a distinct view between the concepts of "management accounting" and "management control" systems (Chenhall 2003; Otley, 1980), recent definitions provide an integrated approach by treating the topic as a unicum (i.e., Management Accounting and Control) (Otley, 2016; Laine et al. 2021) (see table 1.1). This is due to the fact that over time several stands of research emerged and enriched the notion of management control systems: the development of management accounting tools, which became more strategic and control-oriented (Otley, 2016; Chenhall & Moers, 2015); the growing awareness of the key role played by management control systems in supporting strategic processes (Ferreira & Otley, 2009; Langfield-Smith, 2006; Simons, 1995), as well as organizational control systems (Abernethy and Chua, 1996; Flamholtz et al., 1985). If compared to the first framework developed by Anthony (1965), recent studies locate management control systems research in a wider field by adopting a more holistic approach that includes a broad range of managerial activities (e.g., strategy processes) as in the case of Ferreira & Otley's framework (2009). The complexity of management accounting and controls systems is due to multiple factors, among others the dynamic nature of the systems, their changes over time and the interaction between various control mechanisms also with other organizational systems (Merchant & Otley, 2020; Berry et al., 2009). Additional challenges have been addressed to the more recent evolution of management accounting and control systems coming from the socio-economical contexts in which organizations operate. Among others, the

emerging relevance of sustainability concerns in corporate practises lead to consider sustainability management as a contingent factor impacting the performance and the success of a company (Carvalho & Rabechini, 2017; Grainger-Brown & Malekpour, 2019). Hence, the next paragraphs illustrate the evolution of the concept of sustainability and how the emergence of new sustainability corporate practices affects the illustrated conceptions of management accounting and control systems.

Table 1.1 - Summary of key definitions of management accounting and management control analyzed

Authors	**Definition**
Flamholtz et al. (1985)	"Control is defined as attempts by the organization to increase the probability that individuals will behave in ways that will lead to the attainment of organizational objectives. Control of work behaviour is accomplished by the four core control mechanisms of planning, measurement, feedback and evaluation-reward."
Simons (1995)	"The formal, information-based routines and procedures managers use to maintain or alter patterns in organizational activities"
Abernethy and Chua (1996)	"We define an organizational control system broadly as a system that comprises a combination of control mechanisms designed and implemented by management to increase the probability that organizational actors will behave in ways consistent with the objectives of the dominant organizational coalition".
Chenhall (2003)	"Management accounting refers to a collection of practices such as budgeting or product costing, while management accounting systems refers to the systemic use of management accounting to achieve some goal. Management control system is a broader term that encompasses management accounting systems and also includes other controls such as personal or clan controls. Organizational control is sometimes used to refer to controls built into activities and processes such as statistical quality control, just in time management."
Malmi & Brown (2008)	"Management controls include all devices and systems managers use to ensure that the behaviours and the decisions of their employees are

	consistent with the organization's objectives and strategies but exclude pure decision-making support systems."
Ferreira & Otley (2009)	"We view PMSs as the evolving formal and informal mechanisms, processes, systems, and networks used by organizations for conveying the key objectives and goals elicited by management, for assisting the strategic process and ongoing management through analysis, planning, measurement, control, rewarding, and broadly managing performance, and for supporting and facilitating organizational learning and change."
Chenhall & Moers (2015)	"We define management control systems as a set of many formal and informal input, process and output controls that are used by management to achieve organizational goals; the controls are connected by many complementary relationships."
Beusch (2020)	"Management accounting and control systems is about an internal perspective that is primarily aimed at the provision and use of information to managers and employees within the organizations to make informed business decisions and assist in the formulation and implementation of an organization's strategy".
Laine et al. (2021)	"Management accounting and control generally refers to accounting tools, practices and methodologies used inside an organisation to assist managers and other individuals in strategic and operational decision-making. Most often, management accounting refers to practices focused on financial information, and includes a wide range of institutionalised practices such as cost accounting, budgeting and investment appraisals. Management controls are then considered to be a broader set of things, including all systems, tools and practices designed for and used in an organisation to affect the activities, behaviour and decisions of the employees so that they are in line with the organisation's overall goals."

1.3 The evolution of sustainability concept and practices

Corporate sustainability has a long-stand history and in the last decade it has catalysed a growing interest by the academia due the evolution of sustainability thinking and the worldwide prominence of sustainability issues in governmental policies and in businesses' strategic priorities.

Since the introduction of Corporate Social Responsibility (CSR) concept (Bowen, 1953; Davis, 1960; 1967), corporate sustainability evolved over time assuming different features and relevance in organizational contexts. Some key publications and events signed the beginning of the emerging focus on sustainability concerns. In 1979, Carroll defined the term CSR by referring to "the social responsibility of business [that] encompasses the economic, legal, ethical, and discretionary [or philanthropic] expectations that society has of organizations at a given point in time' (Carroll, 1979, p. 500). This notion is based on the assumption that corporate sustainability mainly depends on society expectations towards businesses in adopting responsible behaviour (Gray at al. 2014).

Subsequently, the release of the document "Our Common Future", also known as "Brundtland report", by the United Nations World Commission on Environment and Development, in 1987, marked a common and univocal understanding of sustainability and sustainable development. For the first time, a definition of "sustainable development" was provided as the "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (UNCED, 1987, p.43). The Brundtland report launched the concept of "sustainable development" into the global political and business agenda by putting the attention on two key issues: the concept of "essential needs of the world's poor, to which the highest priority should be given"; the idea of the limits "imposed by the state of technology and social organizations on the environment's ability to meet

present and future needs" (UNCED, 1987, p.43). Thus, the Report represents a key milestone for globally addressing environmental and human development issues.

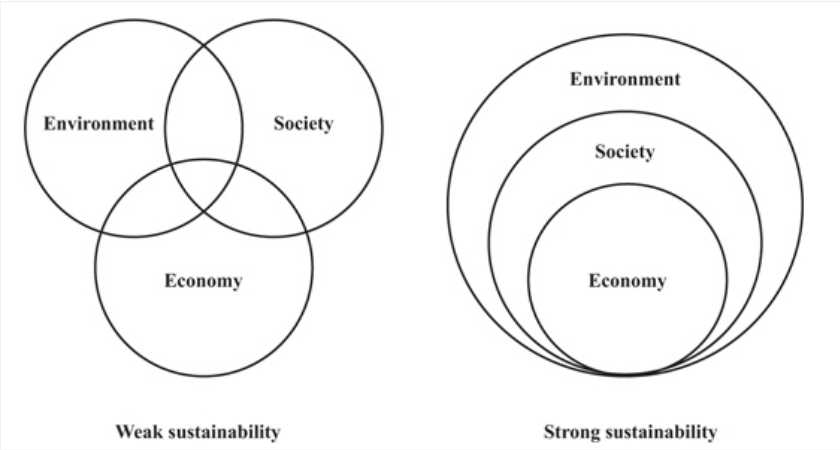
Since the Brundltand report was published, “it has been generally accepted that businesses are able in many circumstances to undertake activities that can assist the environment and society while gaining net income and building wealth from improved operations and investments” (Burritt et al., 2021). Based on this concept, the boundaries of the debate on sustainability widened to include, in addition to the environmental issues, also the economic and the social concerns. In this vein, the triple bottom line (TBL), a term coined by Elkington (1997), provided an original perspective of sustainability consisting of three dimensions: ecological, social and economic. In practice, these three dimensions can also be found as the three pillars, the three E’s (environment, economy and equity) and, especially within the business context, as the three P’s (people, planet, and profit).

Elkington (1997) in his book *Cannibals with forks* offers a broad picture of the business social responsibility by stating that corporate sustainability entails the triple bottom line of economic prosperity, environmental quality and social justice. The first dimension (i.e., economic sustainability) refers to the ability of an economic system to generate income and employment in a long-term period. From a business point of view, the economic dimension includes monetary flows expressed with both financial (i.e., sales, profit etc.) and non-financial (i.e., jobs created supplier relations etc.) indicators. The second dimension (e.g.,

environmental sustainability) concerns the protection of the ecosystem and the renewal of natural resources. Translating in a business perspective, it represents the impact of a company on the ecological environment and the use of the natural resource (i.e., energy and water use, biodiversity impact etc.). Finally, the third dimension (e.g., social sustainability) concerns the ability to ensure that conditions of human well-being are equitably distributed. In practice, it represents the company's relationship with the social environment, and it focuses on how the company uses and impacts human resources (i.e., health and safety of employees, corruption avoidance, etc.) (ASviS, 2022; Hartmann, 2020).

The TBL approach represents one of the most influential models for "planning, decision-making, assessment and reporting of sustainable development" due to the holistic view that the TBL provides on sustainability performance (Hartmann, 2020, p.109). However, the TBL approach presents some limitations related to different understandings of how the three dimensions relate to one another and how sustainability can be achieved (Laine et al. 2021). The different views on how sustainability can be achieved are well known as the "weak" and the "strong" sustainability models, relating the extent to which one or more sustainability dimensions can be traded-off against each another (figure 1.3).

Figure 1.3 - The weak and the strong sustainability models



Source: Laine et al. (2021, p. 15)

The "weak" sustainability model pursues a "win-win" strategy that benefits two dimensions without considering the third one. Thus, a perspective informed by weak sustainability entails a less integrated view of the three dimensions by considering each dimension in silo rather than as part of a system (Laine et al., 2021). The "strong" sustainability recognizes that a stable economy is reliant on a well-functioning society and the society is reliant on a healthy environment. Accordingly, the three dimensions operate interdependently without any trade-off and by considering the environmental dimensions as the overarching system (Laine et al., 2021).

An integrated and holistic vision of the three dimensions of sustainable development has been reached with the 8 Millennium Development Goals (MDGs), approved in 2000 with the intent to reduce all forms of poverty by the end of 2015,

and then reinforced in 2015 with the release of "2030 Agenda for Sustainable Development", according to which 193 countries in the UN committed to move towards the achievement of economic, environmental and social sustainability through 17 Sustainable Development Goals (SDGs) (United Nation, 2015). The MDGs and the SDGs (figure 1.4) are the results of an intense political and governmental activity operating since the release of the Brundtland report, such as the Earth Summit in 1992 or the United Nations Conference on Sustainable Development (Rio+20) in 2012[4].

Figure 1.4 - Millennium Development Goals (MDGs) vs. Sustainable Development Goals (SDGs)

Source: https://www.un.org/millenniumgoals/ and https://unric.org/it/agenda-2030/

Compared to the MDGs, the SDGs adopt a wide range of economic, social and environmental objectives alongside the priorities linked to poverty, health, educations and nutrition, as well as they extend the goals to both developing and

[4] With the Earth Summit more than 178 countries adopted the *Agenda 21*, a comprehensive plan of action to build a global partnership for sustainable development to improve human lives and protect the environment. Whereas, at the United Nations Conference on Sustainable Development (Rio+20) Member States subscribed the document "*The Future We Want*" in which they decided, inter alia, to launch a process to develop a set of SDGs to build upon the MDGs and to establish the UN High-level Political Forum on Sustainable Development.

developed countries (United Nations, 2015, p. 9). They also take up aspects of fundamental importance for sustainable development, such as tackling climate change and building peaceful societies by the year 2030. The Agenda 2030 represents the last edge of corporate sustainability together with the other initiatives that moved from the SDGs release and that have been developed in the following years, such as the Paris Agreement on climate change[5] and the Task Force on Climate Related Financial Disclosures[6] to improve and increase awareness of the climate-related risk to the global economy and society. Most recently, the same European Commission announced in December 2019 the "European Green Deal" with the aim for European Union to become the first climate-neutral continent by 2050. With this further initiatives, the EU Commission has signed a further step towards the achievement of sustainable development goals by imposing requirements for EU member states, companies and stock exchanges.

At the same time, along the abovementioned governmental initiatives, several initiatives have also led to changes in corporate practices and financial markets (Rimmel, 2020). Among others, the most important initiatives arise at the beginning

[5] The Paris Agreement was adopted by 196 Parties starting from 2016. Its goal is to limit global warming to below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels. To achieve this long-term temperature goal, each country aims to reach global peaking of greenhouse gas emissions as soon as possible to achieve a climate neutral world by mid-century (see https://sdgs.un.org/frameworks/parisagreement).

[6] The Financial Stability Board created in 2017 the Task Force on Climate-related Financial Disclosures (TCFD) to improve and increase reporting of climate-related financial information. In particular, the TCFD has developed a framework to help public companies and other organizations to more effectively disclose climate-related risks and opportunities through their existing reporting processes.

of the 21st century: the GRI standards, the oldest reporting framework for sustainability that have found a widespread application among multinational companies and organizations; the UN Global Compact, which encourages companies to demonstrate their sustainability and social responsibility by issuing ten principles on human rights, manpower, environment and corruption; the UN Principles for Responsible Investment (PRI) promotes the inclusion of environmental, social and governance (ESG) issues into performance evaluation of investment portfolios. A large number of other frameworks have been developed in the last two decades by private initiatives due to the increasing awareness that companies are held accountable for their way of doing business (Rimmel, 2020). Besides, the same SDGs place increased demands on accounting for sustainability and strengthen its position against traditional financial accounting. Based on this background, research in the sustainability management field calls for new forms of accounting and control for sustainability in response to the need of a continuous improvement process in economic, environmental and social performance (Bebbington & Unerman, 2018). Thus, the next paragraphs illustrate how Management Accounting and Control systems changed and evolved to meet sustainability's needs in organizational context and corporate practices.

1.4 The emerging of Management Accounting and Control for sustainability

1.4.1 Accounting for sustainability

The importance of sustainability issues has increased significantly within the global political and business agenda. In particular, organizations no longer have the responsibility and accountability[7] only for financial resources as the commitment to account for economic, environmental and social impacts and the use of environmental and social resources become more significant for a wide range of stakeholders (Laine et al., 2021).

In this vein, in order to take into account more than financial implications and to identify unsustainable actions and processes, the role of accounting within organizations become central in decision-making processes and in understanding the relationship between internal and external stakeholders (Laine et al., 2021). According to Rimmel (2020), accounting through its "unique ability to identify, measure and communicate information, provides evidence that economic decisions can be taken for sustainability" (p. xiii). Besides, the growing pressure from stakeholders on companies to report on social responsibility and sustainable development leads to the emergence of several accounting practices for sustainability over time.

[7] Accountability has been defined by Grey et al. (2014) as "the duty to provide an account or reckoning of those actions for which one is held responsible" (p. 50)

In general, accounting for sustainability "refers to a range of techniques tools and practices that are used in the measurement, planning, control and accountability of organizations with regards to environmental, social and economic issues" (Laine et al., p. 2). Based on this definition, within organizations, accounting and accountability practices for sustainability can refer to both internal and external perspectives. The internal perspective relates to the provision and use of information for managerial business decisions and for supporting the formulation and the implementation of business strategy (Rimmel, 2020). The internal perspective primarily refers to Management Accounting and Control Systems, whose differences between traditional and sustainability systems are better outlined in the next paragraph. The external perspective mainly relates to reporting and disclosure[8] practices (Rimmel, 2020), which become a way for companies to voluntary provide sustainability performance information and meet the transparency needs of their stakeholders (Gray et al. 1995).

Along the advancement of the international and intergovernmental initiatives illustrated in the previous paragraph, standards and guidelines have emerged and institutionalised from the early begin of the 21st century to support and guide companies in reporting and disclosing sustainability information. This is also a reflection of the increased importance of sustainability reporting for companies as

[8] According to Dumay et al. (2018), an important difference exists between sustainability "reporting" and "disclosure": "a report is a detailed periodic account of a company's activities financial condition and prospects made available to shareholders and investors, while disclosure is a revelation of information that was previously secret or unknown" (p. 20).

sustainability issues become significant drivers for the society. Among these guidelines, one of the first sustainable reporting framework has been developed by the Global Reporting Initiative (GRI), established in 1997. The GRI was born to create the first accountability mechanism and global framework for sustainability reporting[9] that includes the social, environmental and economic issues following a TBL approach. Over the time, the GRI become the most widely used and a regulatory sustainability framework able to provide the same level of comparability and general acceptance as financial reporting (Rimmel, 2020). Nowadays, the GRI sets the first global standards for sustainability reporting, as the demand for a more institutionalised and regulated reporting from organizations steadily grew. However, the GRI does not lack for criticisms. The most problematic aspects of the proposed reporting model concern the lack of information about the impacts of the organization in relation to the external environment (Gray & Bebbington, 2007), as well as the companies' discretion in deciding what information to disclose (Milne & Gray, 2013). These criticisms are partially superseded by the G4 version published in 2013 in which materiality analysis plays a key role in the reporting process by leading companies in evaluating and focusing on most sustainability issues not only from the perspective of the organizations but also from the stakeholders' viewpoint (Laine et al., 2021).

[9] See for further details on GRI mission and history https://www.globalreporting.org/about-gri/mission-history/

In the same year, the Integrated Reporting Framework (<IR> Framework) was launched by the International Integrated Reporting Council (IIRC) to promote, within organizational reporting practices, the production of a single and concise report able to integrate sustainability and financial information (IIRC, 2013). The <IR> Framework represents a new way to disclose corporate information since it offers a more comprehensive understanding of business activities for investors' decision-making process and a tool through which companies can narrate their value creation story (IIRC, 2013). According to Simnett and Huggins (2015), this innovative form of communication differs from current financial and sustainability frameworks that are both unable to provide an integrated view of organization. The annual reports become more complex and longer during the years and they seem to include the minimum information required from financial standards, causing a decrease of user trust. Subsequently, the demand for more and transparent information led to the release of stand-alone sustainability reports, mostly compliant with the GRI, with the result that stakeholders need to examine more than one corporate documents to have access more information (Simnett & Huggins, 2015). The <IR> Framework received substantial attention in academia, where it is possible to distinguish two prominent views about its role in sustainability accounting: the detractors and the supporters' perspective (Corrado & Demartini, 2020). The first view opts for a critical approach against the <IR> aptitude to increase corporate social accountability and give useful and reliable

information for broader stakeholders' needs (among others Flower, 2015; Milne & Gray, 2013). According to the second perspective, the <IR> Framework has the potential to shift capital markets towards a longer-term view and to change the thinking of corporate management coherently with sustainable purposes (among others Tweedie and Martinov-Bennie, 2015; Adams, 2015).

Despite of the criticisms and challenges arisen in literature mainly related to the <IR> exclusively focus on shareholders and the adoption of a more strategic and forward-looking approach, the key features of the <IR> Framework is the attention on the organization's ability to create value in the short, medium and long-term term through the management of six capitals, namely financial capital, production capital, intellectual capital, human capital, social and relational capital and natural capital. Furthermore, the integrated thinking process promoted by the IIRC allows to shift the focus on organizational internal drivers thanks to the integrated thinking ability to connect business strategy and governance with stakeholder's needs and capitals interdependency and trade-offs, as well as to provide a better understanding of internal processes and relationships affecting organizational culture (Dumay & Dai, 2017). By following this latter pattern, the IIRC recently has released a refined version of the <IR> Framework as a result of extensive market consultation (IIRC, 2021) and is developing the Integrated Thinking Principles (VRF, 2021) to better focus on internal organizational processes. At the same time, the growing interest of the capital market in obtaining information on ESG performance has led the

creation of Value Reporting Foundation (VRF)[10] to supports integrated thinking approach and sets sustainability disclosure standards for corporate value creation not only towards shareholders, but also towards "people and planet" (VRF, 2021)[11].

Other investor-related initiatives have found prominence in corporate sustainability practices together with the above-mentioned sustainability reporting guidelines and the rising of global climate emergency. This is the case of the Carbon Disclosure Project (CDP), to promote the disclosure of climate change information within sustainability reports, or of the Task Force on Climate Related Financial Disclosures (TCFD) to report the financial implications of climate-related risks, opportunities and dependences. Most importantly, the rise of all these sustainability accounting practices with a prominent focus on climate change issues, lead the academia to the creation of "new accountings" research areas (Laine et al., 2021, p.25). Scholars have introduced in literature new research streams by focusing on specific issues or proposing new accounting techniques (i.e., extinction accounting, water accounting, accounting for human rights and biodiversity, environmental accounting, etc.) to tackle some of the main questions and threats that our society

[10] The VFR stems from the merge of the IIRC and the Sustainability Accounting Standards Board (SASB), which represents one of the more recent entries alongside the GRI and the <IR> in the sustainability reporting field. In particular, the SASB was established in 2011 with the aim to create sustainability reporting standards by offering organizations "cost-effectively and well-defined set of key sustainability performance indicators" at an industry-level to produce material information for investors (Laine et al. 2021, p. 95).

[11] The VFR aims to "provide the market with a clear solution for communicating about the drivers of enterprise value [and to convey] evidence-based, market-informed, and transparent data in order to deliver long-term value to shareholders while also helping secure the future of our people and our planet" (VRF, 2021).

faces in relation to sustainability issues (Atkins & Maroun, 2018; Christ & Burritt, 2017; Guthrie et al., 2019). Each area of "new accountings" represents a potential research opportunity from both an internal and external point of view that deserves an extensive discussion and attention beyond the focus of this study.

In summary, accounting for sustainability evolved over time from philanthropy and voluntary information reporting and disclosure, mostly connected to CSR and TBL practices, to increased, regulated and mandatory sustainability information as an expression of long-term sustainability thinking that is spreading around the world (Rimmel, 2020). Accordingly, the same European Commission has started legislating sustainability information requirements for business giving a strong signal for sustainability accounting and reporting with the EU Directive 2014/95, revised and strengthened by the most recent proposal of the European Commission for a Corporate Sustainability Reporting Directive in 2021. However, while the sustainability accounting practices for external purposes represent a well-established research stream due to the evolving of sustainability reporting frameworks in the last two decades, from an internal point of view research needs to advance to understand how accounting may support organizations' decision-making processes and help improve sustainability performance (Adams & Frost, 2008) and how sustainability performance measurement and management bridge the gap between strategic processes and sustainability reporting for communication of social, environmental and social performance (Schaltegger & Wagner, 2006),

thus avoiding a greenwashing rhetoric and guarantying the reliability of sustainability information. In this vein, the next paragraph focuses on the emergence of new sustainable practices in management accounting and control systems from the internal perspective.

1.4.2 The rising of Sustainability Control Systems

Nowadays companies are dealing with the increasing need to manage their sustainability information and performance not only externally, but also internally. Business commitment toward sustainable development should be driven by the inclusion of social and environmental issues within planning process, policy decisions, capital allocation and performance evaluation beyond sustainability reporting practices (Riccaboni & Leone, 2010; Bebbington, 2007)[12].

As mentioned in the first paragraphs, management accounting and control systems play a key role for a broader range of internal managerial practices and activities that go from strategy processes to operational activities. However, management accounting and control for sustainability require well-designed and integrated systems able to deal with all sustainability information needs required for internal decision-making (Beusch, 2020; Maas et al. 2016b)[13]. The lack of

[12] Bebbington (2007) states that "if organizations are seeking to report on their contribution to sustainable development, one may expect that there are some internal mechanisms which guide activities towards these goals" (p. 6).

[13] According to Beusch (2020), management accounting and control systems are designed for an internal use and consequently the nature of information is confidential and assumes a forward-

sufficient information and the lack of tools and techniques, able to control the activities and processes involved to make a proper evaluation and monitoring of the performance achieved, therefore, make challenging the decision-making process in relation to sustainability issues (Beusch, 2020). The main challenges are represented by the fact that sustainability corporate performance needs to respond to social expectations and a long-term scope is required to satisfy the inter-generational - the present and the future generations as stated by the Brundtland Commission (UNCED, 1987) - and the extra-organisational perspectives (Johnstone, 2019, p.35). Furthermore, in relation to sustainability, relationships are more difficult to outline and rarely easy to measure in monetary terms (Beusch, 2020). For example, Durden (2006) stressed the difficulty for management accounting and control systems to measure or monitor social accounting and social responsibility aspects and suggested that control systems should reflect stakeholders' goals and expectation.

There is a shared opinion that management control systems play a central role in supporting strategy implementation and pushing organizations in the direction of sustainability (Beusch et al., 2022; Ghosh et al., 2019; Crutzen et al., 2017; Gond et al. 2012; Riccaboni & Leone, 2010). However, traditional management control systems are seen to be limited in their ability to address the interests of a broad

looking perspective, requiring ad-hoc and discretional tools and practices (e.g., cost accounting, budgets, etc.).

range of stakeholders, as well as to include social and environmental aspects or partial in explaining sustainability phenomena (Johnstone, 2019; Schaltegger et al. 2022; 2002). Indeed, as stated by Gond et al. (2012), "management control systems traditionally developed to align organizational and behavioural structures with the economic goals of organizations and to assist in improving economic performance" (p. 208). Thus, the integration of sustainability into management control systems started to be addressed in research to gain more attention toward the intra-organizational impact of sustainability and better face corporate social and environmental responsibilities (Ditillo & Lisi, 2016; Bebbington, 2007).

A stream of literature focused particularly on the emergence of new forms of accounting and control for sustainability, which extend organizational information and decision-making to include social and environmental measures in addition to conventional economic performance outcome (Johnstone, 2018a; 2019; 2020). For example, in the context of the environmental issues some Authors explored the concept of environmental control and or eco-control (Guenther et al., 2016; Henri & Journeault, 2010; Schaltegger et al. 2002), intended as "mechanisms used to direct organizational members as well as other stakeholders such that they perform activities that contribute to the achievement of organizations' environmental objectives and the implementation of their related strategies" (Bouten & Hoozéè, 2021, p. 194). Conversely, other Authors developed sustainability control systems and tools deriving from accounting control systems, such as the sustainability

performance measurement (Schaltegger & Wagner, 2006) or the sustainability balanced scorecard (Figge et al, 2002).

More in general, both streams of research fall under what has been called "Sustainability Control Systems" (SCS) and "Sustainability Management Accounting and Control" (see table 1.2). In academia the concept of SCS has increasingly emerged and more recently defined as "the dynamic constellation of management accounting tools that connect organisational strategy with operations in a given context by providing information and direction, as well as monitoring and motivating employees to continually develop sustainable practices and procedures for future improved sustainability performance" (Johnstone, 2019, p.34). More in general, Laine et al. (2021, p. 59) refer to "sustainability management accounting and control" as "a broad range of activities aimed specifically at measuring, assessing and communicating an organization's sustainability activities internally". In addition, as for the definition of management accounting and control, the Authors make a distinction between "sustainability management accounting" and "sustainability management control": the former, with a narrower scope, focus on "tools and practices used to developed information regarding sustainability issues"; the latter covers a broader area by including "all devices and systems" that managers adopt to ensure that behaviours and decisions are aligned with organizational sustainability goals and strategies (p.59). Similarly, Maas et al. (2016b) define sustainability management accounting as the "process

of the collection, analysis, and communication of sustainability-related information" (p. 241), while sustainability management control "aims to continuously measure, manage and improve, in an iterative process, the interaction between business, society and environment" (p. 242). In particular, according to Maas et al. (2016b), sustainability management control, on the one hand, supports *internal performance improvement* by combining sustainability management accounting with sustainability performance management and measurement systems; on the other hand, it is closely related to sustainability assessment and reporting since it provides information and performance measures that are reported externally, thus improving corporate *transparency* and *accountability*.

Table 1.2 - Summary of the key definitions of sustainability control systems analyzed

Authors	**Definition**
Crutzen et al. (2017)	"Sustainability management controls can be said to include all devices and systems that managers developed and use to formally and informally ensure that the behaviours and the decisions of their employees are consistent with the organization's sustainability objectives and strategies".
Maas et al. (2016b)	"Sustainability management accounting refers to the process of the collection, analysis, and communication of sustainability-related information"; "sustainability management control aims to continuously measure, manage and improve, in an iterative process, the interaction between business, society and environment"
Johnstone (2019)	"SCS are the dynamic constellation of management accounting tools that connect organisational strategy with operations in a given context by providing information and direction, as well as monitoring and motivating employees to continually develop sustainable practices and procedures for future improved sustainability performance".

Laine et al. (2021)	"Sustainability management accounting and control therefore refers to a broad range of activities aimed at measuring, assessing and communicating an organization's sustainability activities internally"

In summary, sustainability management accounting and control or SCS deal with "a wide range of tools, practices and systems, which are used to support managers in integrating complex and multifaceted sustainability factors into organizational decision-making" (Laine et al. 2021, p. 59). In particular, there has been the recognition of the significant role of SCS in bridging both strategic and operational levels within organizations and in embedding sustainability in intra-organizational context (Crutzen et al. 2017). A well-designed SCS should support corporations to specify and communicate sustainability objectives, that usually are perceived as abstract in organizational contexts (e.g., no poverty, zero hunger etc.), to monitor sustainability performance through feedback and controls mechanisms, to motivate employees to participate in sustainability projects and practices by rewarding and appraising their sustainability achievement (Wijethilake et al., 2017; Johnstone, 2019). Thus, a SCS both assists strategy and influences the behaviour of organizational actors (Crutzen et al. 2017; Gond et al., 2012) not only in relation to performance outcomes, but also in improving employee competences in sustainable behaviour (Johnstone, 2018b; 2019).

The design and the use of SCS is often viewed as difficult in practice due to its "experimental nature": achieving corporate sustainability objectives requires, most of the time, an interpretation process for managers and employees in formulating

appropriate performance outcomes within "a complex and overarching governance structure" (Johnstone, 2019, p. 33). Indeed, compared to traditional management accounting and control systems, SCS is not limited to the organizational level, rather it requires an analytical focus extended over time (inter-generational) and space (extra-organizational) to handle a bilateral relationship with a broad range of stakeholders other than shareholders (Burritt & Schaltegger, 2010; Bouten & Hoozée, 2016; Johnstone, 2019).

In this vein, several studies refer to the Simons' levers of control (e.g., Gond et al. 2012; Beusch et al. 2022) or to Malmi & Brown's control package (Crutzen et al., 2017; Bouten & Hoozée, 2016) to frame and examine the role of SCS at organizational level. For example, Crutzen et al. (2017) explore the extent to which the connection of both formal and informal management controls proposed by Malmi & Brown (2008) could better support organizations to become more sustainable. Specifically, the Authors define SCS as including "all devices and systems that managers developed and use to formally and informally ensure that the behaviours and the decisions of their employees are consistent with the organization's sustainability objectives and strategies" and reveal that companies applying more formal controls tend to have less developed cultural control systems and vice versa (Crutzen et al., 2017, p.1293).

Another line of enquiry focuses on the so called "integration problem" (Gond et al, 2012, p. 209) between SCS with the traditional management accounting and

control systems. According to Johnstone (2019), SCS comprises the combination of traditional management accounting tools to meet sustainability performance outcomes. However, in some cases SCS results decoupled from the traditional management accounting and control systems. For example, Riccaboni & Leone (2010) demonstrate how traditional management control systems work to implement sustainable strategies and how the combinations of both formal and informal controls should be modified to really integrate sustainability in the organizational way of thinking and operations and to manage trade-offs between instance of coordination and control and instances of autonomy and adaptation to local realities, often requiring a decentralised structure.

In this vein, Gond et al. (2012) suggest an array of SCS configurations, from "dormant decoupled" to fully "integrated" sustainability strategy, that reflect the various use and modes of the integration between SCS and traditional management control systems (figure 1.5). In particular, the Authors identify eight configurations that are built on Simons' levers of control framework, according to which two possible uses of SCS and traditional management control systems are distinguished (i.e., the diagnostic and the interactive use), and on the level of integration between SCS and management control systems (i.e., high or low integration).

Figure 1.5 - Configuring uses and integration of control systems

		Uses of Control Systems (Diagnostic vs. Interactive)			
		Diagnostic use of MCS		Interactive use of MCS	
		Diagnostic use of SCS	Interactive use of SCS	Diagnostic use of SCS	Interactive use of SCS
Level of Control Systems Integration (cognitive, organizational, technical)	Low *Decoupling*	Configuration A **Dormant decoupled strategy** Stability: Low Frequency: Low TBL: Low	Configuration B **Strategy emergence through sustainability** Stability: Medium Frequency: Low TBL: Medium	Configuration C **Compliance-driven sustainability strategy** Stability: High Frequency: High TBL: Medium	Configuration D **Schizoid sustainability strategy** Stability: Low Frequency: Medium TBL: High (short term)
	High *Tight coupling*	Configuration E **Dormant integrated strategy** Stability: Low Frequency: Low TBL: Low	Configuration F **Sustainability-driven organizational Strategy** Stability: Low Frequency: Medium TBL: Medium	Configuration G **Peripheral sustainability integration** Stability: High Frequency: Medium TBL: Medium	Configuration H **Integrated sustainability strategy** Stability: High Frequency: Low TBL: High (long term)

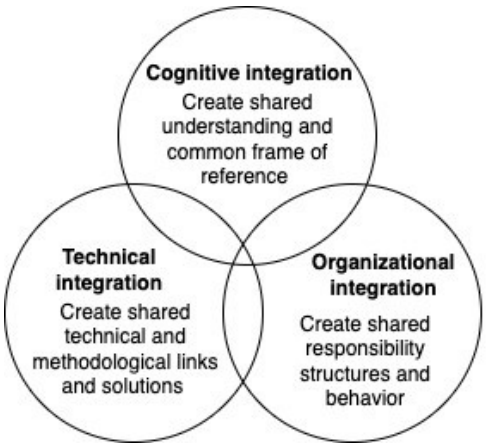
Source: Gond et al. (2012, p. 211)

In relation to the use of control systems, Gond et al. (2012) distinguish control systems used by managers as "management by exception" tools (diagnostic use) to correct actors' actions, from those control systems used as "actual strategic levers" (interactive use) to focus actors' attention on key goals, support changes and strategy alignment. Concerning the level of control systems integration, the Authors propose three types of integrations (i.e., cognitive, technical and organizational) and call for a more integrated and dynamic uses of control systems to support new business opportunities (i.e., tight coupling) rather than the use of SCS operating in parallel to the core management control systems (i.e., decoupling). For example, while configuration A corresponds to a situation where the organization owns parallel systems of control for management and sustainability, which are not actually used to deploy any kind of strategy, resulting also in a low triple bottom line performance, configuration H corresponds to an ideal-type of interactive use

of both integrated systems where sustainability strategy and strategy-making overlap completely, allowing the deployment and renewal of a sustainability strategy through the use of coherently integrated systems.

Within the latter 'ideal' configuration, alongside the integration between SCS and traditional management control systems, the integration of cognitive, organizational and technical dimensions of control is also necessary (figure 1.6).

Figure 1.6 - Integration of cognitive, organizational and technical dimensions of control



Source: Elaboration from Beusch (2020, p. 52)

In particular, the cognitive dimension refers to "cultural control" in Malmi & Brown's framework and "beliefs system" in Simons' LOC framework and includes people's attitudes, ways of thinking, values and beliefs. Cognitive integration requires the achievement of a common view between managers and employees of mainstream sustainability strategy and how it might be connected to management accounting and control (Beusch, 2020; Gond et al. 2012). The organizational structure refers to "administrative controls" in Malmi & Brown's framework and

to “boundary systems” in Simons’ LOC framework, thus including, among others, the governance structure, organizational policies and procedures. Organizational integration involves the integration of sustainability into organizational formal structures to facilitate the development of a common set of sustainability reporting and control practices that managers and accountants might use in both or different systems (Gond et al. 2012), as well as to define shared responsibilities across the traditionally often functionally divided boundaries (e.g. research and development, human recourse, sales, production etc.) that require specific skills (Beusch, 2020). Finally, technical dimension enables the collection, processing and reporting of accounting information, representing the core of traditional management accounting and control systems (Flamholtz et al., 1985), also due to its more tangible and formal nature (Beusch, 2020). It refers to “planning”, “cybernetic”, “reward and compensation” controls in Malmi & Brown’s framework and to “diagnostic control” in Simons’ LOC framework. Technical integration requires methodological links between management control system and sustainability control system, such as the presence of a common infrastructure to gather information for both systems and to enable the collection, the analysis and the follow up of financial and sustainability data for performance measurement and decision-making processes (Beusch, 2020; Gond et al. 2012).

Figure 1.7 shows how traditional and sustainability-oriented management accounting and control tools and techniques, which are most commonly mentioned in literature as part of the technical structure, can potentially be integrated.

Figure 1.7 - Technical integration

Management control systems (Malmi & Brown, 2009)	Management accounting and control techniques and tools for sustainability
Planning	Sustainability planning; Environmental and social planning
Budgeting	Sustainability budgeting; Environmental and social budgeting
Financial measurement systems	Environmental/material flow cost accounting; Life cycle costing and Life cycle management; Sustainable value added; Activity based costing for sustainability
Non-financial measurement systems	Environmental performance evaluation systems; material and energy flow accounting systems
Hybrid measurement systems	Sustainable Balanced Scorecard; Eco-efficiency analysis; Sustainability performance measurement
Reward and compensation	Sustainability oriented reward and compensation systems based on multidimensional performance

Source: Elaboration from Gond et al. (2012, p. 208) and Beusch (2020, p.61)

The integration within the technical dimension of control systems has been particularly appointed by several scholars over time. For example, Adams and Frost (2008) have found a considerable diversity in how management accounting systems, used for managing and reporting sustainability performance, are integrated in practice into conventional management accounting and control systems. Vitale et al. (2019) question how integration can be handled through the alignment of new tools with the pre-existing ones or through the overlap of sustainability-oriented practices. In the latter, sustainability elements and goals "may be incrementally added in management control systems and environmental, social and economic

concerns gradually incorporated into sustainability control systems that are growing into more comprehensive systems" (George et al., 2016, p. 200).

Research on the interplay of SCS with traditional management accounting and control systems is emerging and more research is needed to better clarify the links between management accounting and control changes and sustainability (Beusch et al. 2022; 2020). In addition, in the last decades, sustainability accounting research has predominantly focused on external reporting and corporate social and environmental accountability, while the potential of management control systems in supporting decision-making processes and organizational commitment toward sustainable goals remained an under-researched area (Crutzen et al. 2017; Riccaboni & Leone, 2010). The advancement of sustainability issues leads part of the academia to focus on the implications and relationship between management control systems and corporate sustainability. In relation to this stream of research, a growing body of literature is emerging as illustrated in the next paragraphs.

1.5 The interplay between Management Accounting and Control Systems and sustainability in the last decade: a systematic literature review

1.5.1 The methodology

In order to analyse and systematize the state of the art, the development of management accounting and control systems and the future research avenues in the

context of corporate sustainability, in this paragraph, a systematic literature review will be developed. In particular, the systematic literature review aims to provide an overview of the last decade taking into account the most recent evolution since Gond et al.'s (2012) seminal work.

Compared to a more traditional narrative review, the systematic review is characterized by more strict rules, thus leaving less discretion to the researcher in choosing the body of literature to be reviewed, and by a transparent and replicable process, offering a scientific tool able to identify, appraise, and synthesize all the relevant studies on a given topic (Littell et al., 2008; Petticrew & Roberts, 2008). According to Pickering and Byrne (2014, p. 539), a systematic review method "*works well for emerging areas and for areas where methodological approaches are so diverse*", leaving significant margins for exploring, discovering and developing processes referring to an emerging topic. Furthermore, performing a systematic literature review allows to achieve several goals, such as synthetizing knowledge, determining gaps within the existing research field, proposing area for further research and identifying current research trends and themes (Sivarajah et al. 2017; Mio et al. 2022).

The systematic literature review developed in this paragraph is based on the three stages outlined by Tranfield et al. (2003): planning the review process, conducting the review process and reporting of the research results.

The first stage, allows to delimit the boundaries of the research, by defining the research objectives and the development of the review protocol (table 3), which is "*a plan that helps to protect objectivity by providing explicit descriptions of the steps to be taken*" (Tranfield et al., 2003, p. 215). In this phase, the research addressed articles whose aims deal with design and use of management accounting and control systems for sustainability. Indeed, according to some Authors, companies are experiencing an increasing need to manage sustainability information and performance not only to respond to the external pressure for transparency coming from external stakeholder and legislators, but also to promote performance improvement internally (Beusch, 2020; Wijethilake et al., 2017; Maas et al. 2016b).

Table 1.3 - The protocol adopted to conduct the literature review

Database	Scopus
Keywords	("Performance measurement" OR "performance management" OR "managerial account*" OR "management account*" OR "managerial control*" OR "management control*" OR "cost management" OR "cost accounting" OR "strategic control*" OR "strategic management control*" OR "strategic management account*" OR "balanced scorecard" OR "management report*") AND "sustainab*"
Search strategy	Title, abstract and authors' keywords
Type of publication	Articles published in ABS ranked journals
Publication date	2012-2022
Language	English
Subject area	Business, Management and Accounting
Inclusion criteria	Accounting-related studies with a focus on internal perspective of the design and use of management accounting and control systems for sustainability

The second step consists of conducting the review. The systematic literature review requires a detailed definition of inclusion and exclusion criteria to allow the replicability of the search.

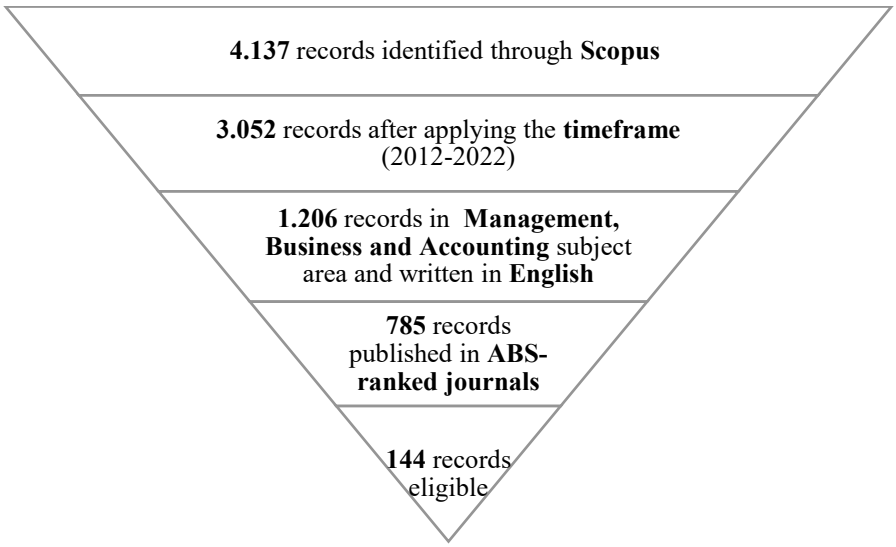
Scopus has been selected as the main database for the search process. Different keywords have been identified to search for papers whose title, abstract and keywords contained the following search string: *("Performance measurement" OR "performance management" OR "management account*" OR "managerial account*" OR "management control*" OR "managerial control*" OR "cost management" OR "cost accounting" OR "strategic control*" OR "strategic management control*" OR "strategic management account*" OR "balanced scorecard" OR "management report*") AND "sustainab*".*

Furthermore, to analyse the most recent evolution of this investigated field since Gond et al.'s (2012) seminal work, the search focus was limited to studies published in the last ten year covering the time period 2012-2022. In particular, compared to publication prior to 2012, Gond et al.'s (2012) work represents a high impact research, which received more than 500 citation[14], by providing a framework that accounts for the roles of MCS in sustainability and by specifying how management accounting contributes to sustainable management. Then, the search results have been filtered by English language and by subject area "Management, Business and Accounting" to exclude those publications without a

[14] Source Google Scholar

managerial and accounting focus. To investigate the academic debate and enhance quality control (David & Han, 2004), the research considers articles published in journals ranked on the ABS Academic Journal Guide 2021 (Mio et al. 2022; Guthrie at al. 2019). In total, the process yielded 785 records to refine through the analysis of abstracts and the application of inclusion and exclusion criteria (figure 1.8). Thus, the final sample includes 144 ABS-ranked articles focusing on management accounting and control systems used inside an organization (see Appendix 1).

Figure 1.8 - Search and selection process in conducting the literature review



The third and last step relates to the reporting and dissemination of the research results. According to Tranfield et al. (2003, p. 218), two-stage reporting might be produced: the descriptive and the thematic analysis. The first allows the researchers to provide a description of how research on management accounting and control for sustainability is developing and how. To this end, the descriptive analysis

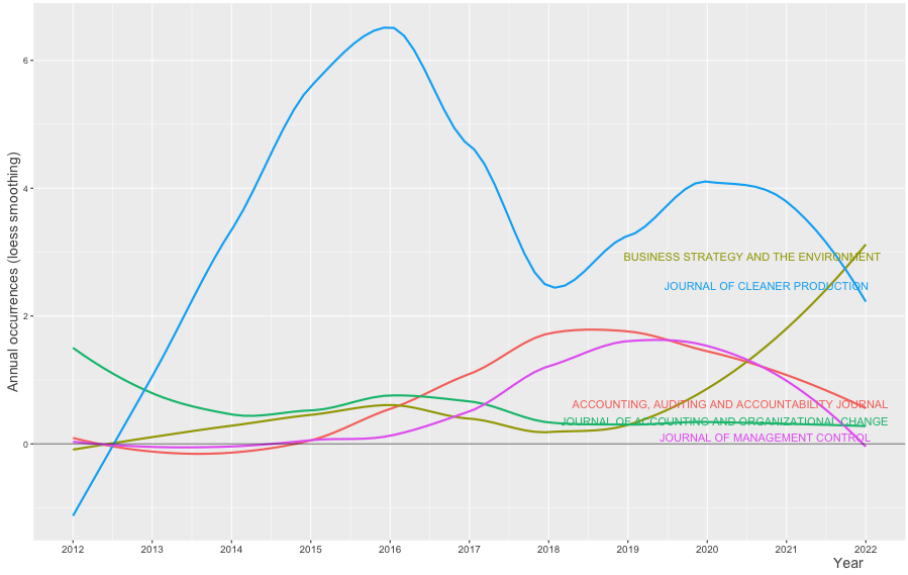
includes the following information: author(s), publication year, journal title, author(s) affiliation and number of citations. To obtain a more in-depth knowledge, information about methodology have been also collected and analysed with the help of Excel and Biblioshiny, an interface of bibliometric R-tools (Aria & Cuccurullo, 2017). The second stage, the thematic analysis, allows identifying key emerging themes and research gaps for future investigation as a result of an "aggregative and interpretative approach" applied on the aims and findings of selected studies (Tranfield et al., 2003, p. 218).

1.5.2 Descriptive analysis

The descriptive investigation reports the frequency distribution of the articles identified in the review by the source and by the methodology adopted. Furthermore, the analysis outlines the five most cited papers and the collaboration network between scholars.

Figure 1.9 shows the publication trend by years of the top 5 journals, representing almost the 45% of the sample (64 publications out of 144).

Figure 1.9 - Dynamics by year of the top 5 journals.



Source: Elaboration with the use of Biblioshiny (Aria & Cuccurullo, 2017)

From a temporal standpoint, it emerges how interest in management accounting and control for sustainability increased from 2015 onwards, probably due to the advancement of the Agenda 2030, which represents a turning point for sustainability management (Bebbington & Unerman, 2018).

The journal with the highest and growing number of contributions is the *Journal of Cleaner Production* (JCP), with 36 publications. In 2016, the JPC published a special volume on the topic "*The Integration of Corporate Sustainability Assessment, Management Accounting, Control, and Reporting*" from which 12 contributions have been selected for the review analysis. Next journals that have eight contributions each are the *Business Strategy and the Environment* (BSE), which is gaining more interest on the topic under analysis in the last two

years, and the *Accounting, Auditing and Accountability Journal* (AAAJ), with the presence of published articles starting from 2017. Subsequently, *Journal of Management Control* and *Journal of Accounting and Organizational change* have advanced the accounting research field with a total of six publications each: while the former shows a prominent presence starting from 2017, the latter journal undertakes a linear trend over the selected period. The approaches supported by the top journals focus more specifically on the accounting research field, except for JCP and BSE, which adopt a multidisciplinary approach encompassing environmental and sustainability issues in corporations. Table 1.4 illustrates the list of the other journals included in the sample. In particular, the review process outlined a total of 56 journals in which the articles have been selected.

Table 1.4 - List of journals

	Journal	N. of articles selected
1	Journal of Cleaner Production	35
2	Business Strategy and the Environment	8
3	Accounting, Auditing and Accountability Journal	8
4	Journal of Management Control	6
5	Journal of Accounting and Organizational Change	6
6	Management Accounting Research	5
7	Corporate Governance (Bingley)	5
8	Journal of Business Ethics	5
9	Social and Environmental Accountability Journal	5
10	Corporate Social Responsibility and Environmental Management	4
11	Sustainability Accounting, Management and Policy Journal	4
12	Meditari Accountancy Research	4
13	Journal of Management Accounting Research	3
14	Accounting Research Journal	3
15	Management Decision	2

16	British Food Journal	1
17	International Journal of Energy Sector Management	1
18	Journal of Entrepreneurship, Management and Innovation	1
19	Measuring Business Excellence	1
20	International Journal of Management Reviews	1
21	Journal of Management Information and Decision Sciences	1
22	International Journal of Accounting, Auditing and Performance Evaluation	1
23	International Journal of Productivity and Quality Management	1
24	Review of Managerial Science	1
25	Journal of Environmental Accounting and Management	1
26	Journal of Competitiveness	1
27	International Journal of Productivity and Performance Management	1
28	International Journal of Scientific and Technology Research	1
29	Production Planning and Control	1
30	Foundations and Trends in Accounting	1
31	Knowledge and Process Management	1
32	Journal of Cleaner Production	1
33	Utilities Policy	1
34	World Review of Entrepreneurship, Management and Sustainable Development	1
35	International Journal of Supply Chain Management	1
36	Organization and Environment	1
37	Asian Academy of Management Journal	1
38	Problems and Perspectives in Management	1
39	Managerial Auditing Journal	1
40	British Accounting Review	1
41	Journal of Applied Accounting Research	1
42	Benchmarking	1
43	Journal of Managerial Psychology	1
44	European Management Journal	1
45	Advances in Accounting	1
46	Australian Accounting Review	1
47	Journal of Sustainable Finance and Investment	1
48	Qualitative Research in Accounting and Management	1
49	Pacific Accounting Review	1
50	International Journal of Business Performance Management	1
51	International Journal of Production Research	1
52	International Journal of Economics and Management	1

53	Australasian Accounting, Business and Finance Journal	1
54	Abacus	1
55	Journal of Management and Governance	1
56	International Journal of Knowledge, Culture and Change Management	1
	Total	**144**

Table 1.5 and table 1.6 provide the results regarding the research methods. Almost two-thirds of the reviewed articles employ a qualitative methodology, mostly with the use of case study and conceptual/literature review approaches, whereas only 20% of the studies adopt a quantitative survey methodology and statistical analysis. Quantitative articles have increased especially in the last five years, against the little and nearly absence of mixed methods.

Table 1.5 - Frequency distribution of the selected articles by research typology

Research method	2012-2014	2015-2017	2018-2020	2021-2022	Total	%
Qualitative	13	40	34	25	112	77.8
Quantitative	2	8	8	10	28	19.4
Mixed	-	2	2	-	4	2.8
Total	**15**	**50**	**44**	**35**	**144**	**100**

Table 1.6 - Frequency distribution of the selected articles by research method

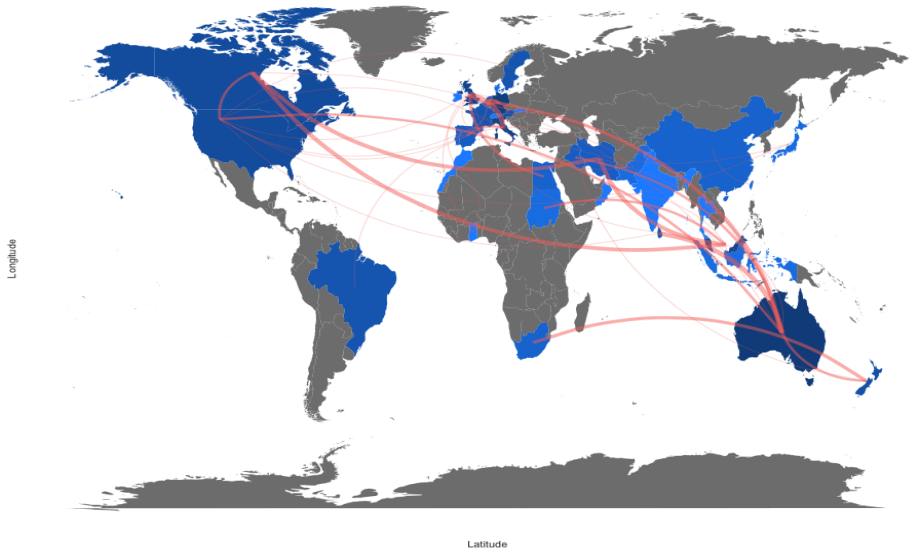
Research method	2012-2014	2015-2017	2018-2020	2021-2022	Total	%
Conceptual/lit. review	6	14	17	8	45	31.3
Case study	4	21	14	8	47	32.6
Interviews	-	5	1	5	11	7.6
Survey	3	3	7	10	23	16.0
Mixed method	1	1	1	2	5	3.5
Other	1	6	4	2	13	9.0
Total	**15**	**50**	**44**	**35**	**144**	**100**

The relevance of qualitative studies in the descriptive analysis confirms the need to improve the knowledge and the understanding of management accounting and control for sustainability in academia by conducting exploratory research on

"how" and "why" sustainability is related to different management accounting and control systems.

By analysing authors' affiliations and geographical origins (figure 1.10), the analysis outlines the number of publications for each country (proportional to the colour intensity in the map) and the co-authorship network (red lines in the map).

Figure 1.10 - Collaboration Word map and scientific production by country.



Source: Elaboration with the use of Biblioshiny (Aria & Cuccurullo, 2017)

The Authors mainly come from Europe (46%) and Australasia (26%), where also multiple country co-authorships are present, in particular Malaysia, Australia and Italy. Starting from 2015, a growing presence in the scientific production come from the North America (8%). This result is in line with the study conducted by Cho et al. (2020) on the recent trends followed by scholars who teach and do research in the area of sustainability accounting and management.

Table 1.7 shows the top five most cited papers representing the key milestones in the sustainability management accounting and control field and encompassing main themes linked to management accounting and research for sustainability. Baumgartner (2014) and Arjaliès & Mundy (2013) investigate the role of management accounting and control systems in managing corporate sustainability and CSR from strategic to operational levels. Gond et al. (2012) address the role of management control systems in favoring the integration of sustainability within organizational strategy by proposing eight configurations that reflect the various uses of sustainability control systems and ways of integration with traditional management control systems. Finally, Searcy (2012) and Hansen & Schaltegger (2016), by conducting a literature review, outline the main research challenges and opportunities associated with the evolution of sustainability performance measurement systems, such as the balanced scorecard.

Table 1.7 - Top five most cited papers by number of citations

Most cited paper	Tot. citations	Citation per year	Authors	Year	Title	Journal
1	280	31.1	Baumgartner	2014	Managing corporate sustainability and CSR: A conceptual framework combining values, strategies and instruments contributing to sustainable development	Corporate Social Responsibility and Environmental Management
2	247	22.4	Gond et al.	2012	Configuring management control systems: Theorizing the integration of strategy and sustainability	Management Accounting Research

3	234	21.3	Searcy	2012	Corporate Sustainability Performance Measurement Systems: A Review and Research Agenda	Journal of Business Ethics
4	196	19.6	Arjaliès & Mundy	2013	The use of management control systems to manage CSR strategy: A levers of control perspective	Management Accounting Research
5	160	22.8	Hansen & Schaltegger	2016	The Sustainability Balanced Scorecard: A Systematic Review of Architectures	Journal of Business Ethics

In the next paragraph, the thematic analysis provides an in-depth understanding of these main topic and how they have been developed in the literature to date.

1.5.3 Thematic analysis

The thematic analysis provides a synthesis of key emerging themes through a "concept centric analysis" approach (Webster & Watson, 2002), which is based on the concepts and themes analysed, rather than on a presentation of the results based on the vision of the individual authors. The analysis has outlined the emergence of different research stream underpinning the interplay between Management accounting and control systems and sustainability. The co-word analysis shows a variety of terms (see figure 1.11), to which the selected studies are related. The main themes are: the role of environmental management accounting; integrating sustainability into management control systems; the interplay with CSR practices; performance measurement tools for sustainability; other emerging themes and research focus. These themes will be briefly analysed.

Figure 1.11 - Word cloud with the top 30 most frequent author keywords

Source: Elaboration with the use of Biblioshiny (Aria & Cuccurullo, 2017)

The role of Environmental Management Accounting (EMA)

As part of the Management Control Systems, companies perceive the benefits in identifying, measuring and analysing information about environmental aspects of organizational activities through EMA techniques to maintain or enhance their competitive advantage (Ferreira et al., 2010; Burritt et al., 2002). EMA is conceived as an "innovative management accounting approach that covers a large range of tools with the purpose to support different actors in environmentally beneficial decision-making in companies" (Schaltegger, 2018, p. 19). In particular, EMA has the potential to promote cleaner production through the efficient use of environmental resources (Yagi & Kokubu, 2020; Burritt et al. 2019; Zou et al., 2019; Figge & Hahn, 2013) and contributes to ecological and environmental sustainability (Rehman et al., 2020; Baker, 2018).

In this contexts, an extensive literature explores the relation between EMA, environmental strategy and environmental performance. Recent studies recognize the key role of EMA in supporting environmental strategy formulation and implementation thanks to its ability in providing information on environmental costs-saving and efficiency improvements (Gunarathne et al., 2022; 2021; Hristov et al., 2021; Di Vaio et al. 2019; Christensen & Himme, 2017; Gunarathne & Lee, 2021; 2021; 2015; Baumann et al. 2015; Reynolds & Mangos, 2012). These studies demonstrate that EMA practices are integrated over time into the daily management process due to their cost-saving potential and strategic benefits and that they are intensified when organizations progress into higher levels of cleaner production strategy development. Other studies focus on the potential of EMA and, more in general, of environmental control systems in fostering the environmental performance of the firms (Beuren & Vaz, 2021; Chaudhry & Amir, 2020; Mahmoudian et al., 2020; Baker et al., 2018; Guenther et al., 2016; Christ et al., 2016). For example, Asiaei et al. (2022a) investigate how EMA transforms/turns the management of green resources, such as green intellectual capital, into enhanced environmental performance. Chaudhry & Amir (2020) find that institutional pressures significantly enhance the implementation of EMA, which in turn enhances the environmental performance of the firm.

Another line of enquiry focuses on the interdependency between environmental management systems and external environmental reporting

(Mahmoudian et al., 2020; Passetti et al., 2018; Biswas & O'Grady, 2016; Joshi & Li, 2016). For example, Passetti et al. (2018) demonstrate that when EMA is implemented, including the environmental disclosure, a more structured integration of sustainability and environmental aspects within organisational values takes place. Similarly, Biswas & O'Grady (2016) demonstrate how external environmental reporting contributes to the strategic planning, target setting and control functions of the management control systems, thus supporting operational activities and not operating independently from internal processes.

However, some Authors criticize the missing link between EMA practices with other non-environmental aspects, such as social issues or global ecological issues as proposed by the UN Agenda 2030 with the SDGs (Schaltegger, 2018; Gibassier & Alcouffe, 2018), and the need to extend the use of EMA to assess trade-offs between economic benefits and environmental performance (Pham et al. 2020; Sundin & Brown, 2017; Christ et al., 2016). Besides, some Authors question the win–win assumption at the basis of eco-efficiency approach, which implies the integrated measurement of corporate environmental and financial performance in business decision making, by demonstrating that the efficient use of environmental resources results to be complementary rather than instrumental to creation of economic value (Figge & Hahn, 2013).

Integrating sustainability into management accounting and control systems

The literature review revealed an emerging stream of research relating sustainability control systems and the integration of sustainability into management control systems. In particular, some researchers focus on the design and use of SCS as a stand-alone systems (Johnstone, 2019; Ditillo & Lisi, 2016) that can help organizations to manage the social, environmental and economic impacts and in implementing and monitoring CSR strategies and performance (Asiaei et al., 2022b; Adib et al., 2020; Rupasinghe & Wijethilake, 2020). However, other Authors recognize that SCS may address environmental and social issues in an integrated way along with financially oriented controls and be considered as part of conventional management control systems (Harris et al., 2019; Gond et al., 2012). In this vein, several researchers address the so-called "integration problem" mostly relying on the work of Gond et al. (2012). For example, Beusch et al. (2022) support the assumption that a firm can manage sustainability by making incremental changes in management control practices, such as promoting dialogues across different organizational levels and functions to mitigate challenges for the technical and organizational integration of sustainability (Cavicchi et al., 2022; George et al. 2016) and abolish cognitive barriers (Walkiewicz et al., 2021; Battaglia et al. 2016), or to strengthening the commitment of strategic-level management to avoid marginalizing sustainability. Similarly, Slacik et al. (2022) promote the use of

informal controls to create awareness on sustainability issues and to build a communication bridge between the strategic and operative levels.

Furthermore, the integration of sustainability into management accounting and control systems has been specifically addressed in the JCP special volume entitles "*The Integration of Corporate Sustainability Assessment, Management Accounting, Control, and Reporting*". The articles collected in this special volume highlight that there is no one-size-fits-all approach and that these different management areas need for integrated accounting and reporting tools to help companies to advance towards sustainability (Maas et al., 2016a; 2016b; Battaglia et al., 2016; Morioka & de Carvalho, 2016a; 2016b; Bouten & Hoozée, 2016; Garcia et al., 2016; George et al., 2016; Guenther et al., 2016; Seele, 2016; de Villiers et al., 2016; Engert & Baumgartner, 2016). Among others, Maas et al. (2016b) state that corporate sustainability requires "integrative measurement and management of sustainability issues rather than isolated application of different tools in the organization" (p.237). The Authors, in particular, question how companies can integrate sustainability assessment, management accounting, management control and reporting. To this end, they propose two main approaches, the inside-out approach and the outside-in approach, to design an integrated framework for both internal performance improvement and external transparency purposes. Depending on the perspective taken, different consequences emerge for the choice, design and use of sustainability management accounting and control systems.

The interplay with CSR practices

Several studies examined in the literature review address the role of management accounting and control in relation to CSR practices. Against the growing development of research in the field of corporate social reporting, some Authors start questioning how CSR issues are managed internally by investigating the role of management control systems in enabling an effective CSR strategy implementation (Adib et al., 2020; Arjaliès & Mundy, 2013; Abdalla, 2014; Maas & Reniers, 2014). Arjaliès & Mundy (2013), for example, highlight the role of management control systems in identifying and managing threats and opportunities associated with CSR strategy. However, Johnstone (2018a) criticizes the approach of conceptualization of CRS in the context of environmental accounting calling for the need to confront the strategic level with the operational levels of management accounting and control.

From an operational point of view, more recent studies explore the extent to which companies rely on sustainability management control systems to translate CSR initiatives into enhanced performance (Asiaei et al., 2022b; Asiaei & Bontis, 2019). In particular, some Authors explain how sustainability performance measurement represents the mechanism through which CSR affects organizational performance (Feder & Weißenberger, 2021), as well as how the existence of CSR-related management control components, such as stakeholder expectations and

proactiveness of the company, drives the achievement of positive organizational performance (Asiaei et al., 2021).

A particular stream of research, instead, focuses on the impact of governance structures, such as the implementation of a CSR committee, and CSR-related board expertise on management control systems (Velte & Stawinoga, 2020). In this vein, some Authors underline the need for companies to have an effective tool to evaluate the board performance on CSR aspects (Aly & Mansour, 2017), others question the relationship between the adoption of sustainability and CSR incentives in executive remuneration (Abdelmotaal & Abdel-Kader, 2016).

Performance measurement systems and tools for sustainability

The literature review sheds light on the many challenges and opportunities associated with design, implementation, use, and evolution of sustainability-oriented performance measurement systems (Searcy, 2012). In particular, it is possible to identify two main streams of research.

First, some studies deal with the role of performance measurement systems and key performance indicators in integrating and monitor sustainability complexity into business strategy (Cavicchi & Vagnoni, 2022; Hristov et al. 2022; 2021; Jusoh et al. 2021). For example, Cavicchi & Vagnoni (2022) investigate the extent to which an organization, controlling its supply chain, implements a performance measurement system able to monitor the effects of a circular economy strategy. Furthermore, it is recognized the mediating role of performance measurement

systems between strategy and the implementation of sustainability practices related, for example, to CSR practices and stakeholders' perceptions (Asiaei et al., 2021; Hristov & Appolloni, 2021). However, few studies investigate the design and use of performance measurement systems in particular organizational context, such as SMEs (Bianchi et al., 2015) and public sector (Adams et al., 2014), and the lack of synergies emerges between external corporate sustainability reports and internal sustainability performance management which organisations need to address in order to become more sustainable (Zharfpeykan & Akroyd, 2022).

Second, numerous studies deal with the financial, non-financial and hybrid measurement systems (Malmi & Brown, 2008). As part of the financial measurement systems, most of the reviewed studies deal with life cycle costing (LCC) and life cycle assessment (LCA) as supporting tools for decision-making process towards sustainable development (Kühnen et al., 2022; Atia et al., 2020; Knauer & Möslang, 2018; Bierer et al., 2015; Tsai et al., 2015). In particular, some studies illustrate the benefits associated to the adoption of LCC in cost management, such costs reduction, efficiency improvements and identification of cost drivers to make strategic decisions (Atia et al., 2020; Knauer & Möslang, 2018). Similarly, other studies discuss the role of Material Flow Cost Accounting, as part of both financial and non-financial measurement systems, in improving financial and environmental performance thanks to its ability to monitor the environmental impacts of material flow over the entire life cycle of the business

and to improve efficiency of the resources encompassed within the material flow (Sahu et al., 2021; Zou et al., 2019; Sulong et al., 2015; Schaltegger & Zvezdov, 2015; Rieckhof et al., 2015; Bierer et al., 2015). Finally, a wide range of literature focus on hybrid measurement systems. The main tools that scholars have analysed are the Balanced Scorecard (BSC) (Kaplan & Norton, 1992) and the Sustainability Balanced Scorecard (SBSC) (Figge et al., 2002).

In relation to the first, several Authors question the challenge in integrating environmental performance (Khalid et al., 2022; Al-Shaabaney, 2021; Khalid et al., 2019) and, more in general, all the TBL dimensions (Barbosa et al. 2020; Nicoletti et al., 2020; Vieira et al., 2017) into the conventional BSC. In particular, some Authors highlight the key role of BSC in evaluating sustainability performance and resource efficiency across supply chains (Al Kaabi & Jowmer, 2018; Ferreira et al., 2016), as well as in supporting sustainability reporting integration and diffusion into internal management accounting and control systems (Kerr et al., 2015; Schaltegger et al., 2015) and into external reporting practices (Huang et al., 2014).

Concerning the SBSC, instead, some studies mainly focus on the design, use and implementation of SBSC as decision-making tool, assuming its ability in integrating environmental, social and innovation-orientated process (Aminaimu & Fernando, 2021; Jassem et al., 2021; Sands et al., 2016). A significant contribution has been provided by Hansen & Schaltegger (2016; 2018), who discuss about SBSC architecture and how it can be designed to relate performance dimensions, strategic

objectives and the logical links among these elements. The Authors find that sustainability-oriented modifications of the conventional BSC architecture are motivated by instrumental, social/political or normative reasons and, as a result, it cannot be isolated from the corporate sustainability strategy-making process, thus becoming an integral and iterative part of it. Conversely, Hahn & Figge (2018) sustain that SBSC is "diametrically opposed to the complex and multi-faceted nature of corporate sustainability and ill-suited to achieve transformational change of for-profit organisations towards sustainability" (p. 919), due to the widespread idea of aligning sustainability with established core business routines rather than achieving strategic change for sustainability. However, the determinants affecting SBSC use, the approaches that companies employ in SBSC application and the outcomes it generates in terms of the effects on sustainability control and management represents some of key outstanding questions in this research field (Mio et al., 2022; Tuori et al., 2021).

Other emerging themes and research focus

Other emerging themes in the management accounting and control research field received prominent attention in academia. Among others, the transformative role played by management accounting and control systems in enabling organizational change toward sustainability has taken place in the last decade. In this context, some Authors investigate the impact of environmental management accounting and disclosure on organizational culture and values, thus demonstrating

how their interacting process acts as a catalyst for organizational change (Passetti et al., 2018; Bouten & Hooze, 2013). Similarly, other Authors focus more on how emerging sustainability accounting and control practices influences broader organizational change from strategic processes to organizational rules and routines in order to reach the institutionalization of sustainability practices (Tipu, 2021; Narayanan & Boyce, 2019; Contrafatto & Burns, 2013; Arjalies & Mundy, 2013; Arroyo, 2012). Furthermore, the theme of organizational change has been investigated by scholars in relation to the health and safety accounting and control mechanisms and the extent to which they affect employees and stakeholders' expectations (Passetti et al., 2020; Shahbaz & Sajjad, 2020; Bouten & Hoozéè, 2016; Gunarathne et al., 2016). For example, Bouten & Hoozéè (2016) illustrate how the firm's control package is configured at different organizational levels in order to align employee behavior and how a safety culture is created through informal control systems, such as symbols, rituals and ceremonies. While this latter stream of research is more concentrated on the social dimension of sustainability, there are some studies which direct their attention to particular issues related to the environmental dimension of sustainability: to the role of management accounting and control systems in response to climate change risks (Lodhia et al., 2021; Bui & de Villiers, 2017), to the main challenges faced proposing carbon accounting (Christ et al., 2016; Hartmann et al., 2013) and to the adoption of circular economy business models (Cavicchi & Vagnoni, 2022; Svensson & Funck, 2019).

Finally, another line of enquiry focuses on the interplay between management accounting and control systems and sustainability reporting (Zharfpeykan & Akroyd, 2022; Traxler et al., 2020; Di Vaio & Varriale, 2020; Wahjoedi et al., 2020; Mahmoudian et al., 2020; Maas et al., 2016b; Seele, 2016; de Villiers et al., 2016; Herremans & Nazari, 2016; Biswas & O'Grady, 2016; Kerr et al., 2015; Huang et al., 2014). In particular, most of the Authors highlight the need for integration of sustainability management control and reporting practices, which organizations need to address in order to become more sustainable (Zharfpeykan & Akroyd, 2022; Traxler et al., 2020; Wahjoedi et al., 2020; Maas et al., 2016b; Seele, 2016). In this vein, the main findings show that the use of performance measurement tools, such as the BSC, can facilitate the implementation of sustainability reporting and a better operationalization and communication of corporate sustainability ideals both internally and externally (Di Vaio & Varriale, 2020; de Villiers et al., 2016; Kerr et al., 2015; Huang et al., 2014). However, other studies demonstrate how sustainability reporting is affected by more informal control systems, depending on the managerial motivations and attitudes within companies as they respond to external pressures and on the different types of stakeholder relationships that the company establishes (de Villiers et al., 2016; Herremans & Nazari, 2016; Maas et al., 2016b; Seele, 2016).

The next paragraph illustrates the under-investigated research areas and the emerging gaps which will help identify further research directions in the field of management accounting and control for sustainability.

1.6 Management Accounting and Control for sustainability: research gaps and further directions

In line with other studies (Johnstone, 2019; Ghosh et al., 2019), the systematic literature review confirms that Simons' LOC (1995) and Malmi & Brown's framework seem to be the basis of the main studies conducted on management accounting and control systems for sustainability, to frame or explain findings. In particular, the framework proposed by Malmi & Brown (2008) represents a widespread tool not only for conceptualizing management accounting and control systems, but also for framing and clustering existing literature (Traxler et al., 2020; Lueg & Radlach, 2016; Guenther et al., 2016). In line with this, the studies and the concepts that have been discussed in this literature review have been collected and summarized in table 1.8 to identify key emerging themes and research gaps for future investigation. Counts are not mutually exclusive since article can refers to more than one control application.

Table 1.8 - Number of articles examined and framed within Malmi & Brown's Framework (2008).

<table>
<tr><td colspan="6">Cultural control
10 out of 144 papers</td></tr>
<tr><td colspan="2">Clans</td><td colspan="2">Values</td><td colspan="2">Symbols</td></tr>
<tr><td colspan="2">Planning</td><td colspan="3">Cybernetic control
25 out of 144 papers</td><td rowspan="2">Reward and compensation
5 out of 144 papers</td></tr>
<tr><td>Long range planning
2 out of 144 papers</td><td>Action planning
3 out of 144 papers</td><td>Budgets
3 out of 144 papers</td><td>Financial Measurement Systems
8 out of 144 papers</td><td>Non-financial Measurement Systems
5 out of 144 papers</td><td>Hybrid Measurement Systems
24 out of 144 papers</td></tr>
<tr><td colspan="6">Administrative Controls</td></tr>
<tr><td colspan="2">Governance structure
3 out of 144 papers</td><td colspan="2">Organization structure
2 out of 144 papers</td><td colspan="2">Policies and procedures
2 out of 144 papers</td></tr>
<tr><td colspan="6">MCS as a package / formal and informal controls / SCS
38 out of 144 papers</td></tr>
<tr><td colspan="6">Environmental Management Accounting and Performance
17 out of 144 papers</td></tr>
<tr><td colspan="6">Other research focus (e.g., organizational change, SMA)
4 out of 144 papers</td></tr>
</table>

From the analysis it emerges that Management Accounting and Control research in sustainability-related research field tends to focus on management and sustainable control packages as a whole, including both formal and informal control systems, and on performance evaluation systems (i.e., cybernetic control). Less attention has been paid to the planning control and tools, reward and compensation systems and administrative control systems, while, regarding cultural controls, studies rarely refer to a single aspect of the organization culture (e.g. values, symbols and clans).

Furthermore, most studies focus on the environmental dimensions of sustainable development, often in relation to the economic dimension, while scarce attention has been paid to the social dimension of sustainability. These results are in line with the call for more empirical research considering all three dimensions of sustainability and how they are embedded into Management Accounting and Control Systems (Lueg & Radlach, 2016). Similarly other authors highlight the limited attention paid to social accounting and responsibility issues and they should be embedded into organizations' management accounting and control systems (Durden, 2006; Parker, 2005).

In this regard, the most recent Agenda 2030 might offer research opportunities in the management accounting and control field in order to investigate key global sustainability issues through the SDGs, which cover the all three dimensions of sustainable development, and considering interdependencies and trade-offs at a firm-level perspective (Laine et al., 2020; Bebbington & Unerman, 2018; 2020; Guenther et al., 2016). As emphasised in the previous paragraphs, sustainability has been strengthened with the UN Agenda 2030 and the SDGs represents the last edge of corporate sustainability (Corsi & Arru, 2020) since they allow to cover a wide range of economic, social and environmental objectives alongside the priorities linked to global issues such as poverty, health and educations (United Nations, 2015). Thus, given the relevance that the SDGs are assuming at international and local level, as well as the growing attention companies are putting to provide a

contribution toward their achievement (PwC, 2019), it could be useful to relate the concept of sustainability to the implementation of SDGs.

In addition, since sustainable development requires an "orchestrated" systems of both formal and informal controls to avoid opportunistic behaviour (Lueg & Radlach, 2016; Riccaboni & Leone, 2010; Adams & Frost, 2008), better understanding should be paid on how organizations adapt different types of controls simultaneously and if certain controls are overlooked when sustainability elements are integrated into existing control systems (Lueg & Radlach, 2016; Guenther et al., 2016). Besides, no mention on the interplay between Management accounting and control systems and the so-called "new accountings" (i.e., extinction accounting, water accounting, accounting for human rights and biodiversity, etc.) (Laine et al., 2021) emerges from the literature review, except for few contributions in the contexts of carbon accounting, climate change risks and circular economy.

Concerning the organizational focus that has been examined, most of the papers provide an analysis of organizations belonging to the private sectors, both listed and non-listed companies, with the prevalence of single case study methodology. Studies are emerging in the context of SMEs and public sector (mainly educational, healthcare and mobility sectors), while the review underlines the little and nearly absence of studies within not-for profit sector and other particular context, such as family firms and cooperatives (Cavicchi & Vagnoni,

2022; Kapiyangoda & Gooneratne, 2021; Battaglia et al., 2016; Biswas & O'Grady, 2016).

From a theoretical point of view, most of the studies refer to the traditional theory in the field of management control, such as the contingency theory (Gunarathne et al., 2022; Hansen & Schaltegger, 2018; Baumann et al., 2015; Schaltegger et al., 2015; Baumgartner, 2014), according to which "specific aspects of an accounting system are associated with certain defined circumstances and demonstrate an appropriate matching" (Otley, 1980, p. 413), and the natural resource-based theory (Asiaei et al., 2022a; 2022b; Mahmoudian et al., 2020; Asaduzzaman Fakir et al., 2019), an extension of the traditional resource-based theory suggesting that differences in implementing organizational strategy are the result of the development of unique and valuable internal resources and capabilities, which can be fostered through the use of management control system (Henri, 2006; Hart, 1995; Wernerfelt, 1984). Other traditional theories, that often occur in connection with research on accounting for sustainability (Rimmel, 2020), mainly refer to the institutional theory (among others Gunarathne et al., 2021; Chaudhry & Amir, 2020; Wijethilake et al., 2017), the legitimacy theory (Feder & Weißenberger, 2021; Huang et al., 2014), the stakeholders theory (Asiae et al., 2021; Adib et al., 2020; Khalid et al., 2019; Gunarathne et al., 2016) and the agency theory (Sundin & Brown, 2017; Abdelmotaal & Abdel-Kader, 2016). Few studies recur to theoretical triangulation by adopting more than one theoretical lens (Velte

& Stawinoga, 2020; Corsi & Arru, 2020; Huber & Hirsch, 2017) or to other less common theories in management accounting research field (e.g., general systems theory, innovation theory, actor network theory etc.). However, there is a need to revise and extend existing accounting theories to better describe societal challenges and advancing the mindset and behaviour that it is required in the context of sustainable development (Tweedie, 2020). Examples of theories that are emerging in management accounting research field, mainly focusing on the behaviour of the actors involved in the accounting processes and their commitment towards sustainability issues, are the dialogic accounting theory (Dillard & Vinnari, 2019) and the stewardship theory (Dumay et al., 2018).

By drawing on the extant literature and the gaps identifies, it seems clear that management accounting and control for sustainability "cannot be seen as a voluntary action only, but firms are also challenged to recognize it as a necessary managerial practice to build a broad and useful information base to align sustainability performance and managerial systems to the institutional context where the company operates" (Maas et al., 2016b, p. 244). Sustainability becomes for companies an urgent necessity rather than a choice and an investigation on how organizations adapt different types of accounting and controls systems simultaneously when they integrate sustainability elements in existing organizational practices are still lacking. Furthermore, the active role that organisations play in achieving the SDGs and contributing to their widespread

implementation has been recognised (Adams et al., 2020; Bebbington & Unerman 2018; 2020; UNCTAD, 2019). However, there is a gap between the number of organisations that implement SDGs at a strategic level and the number of organisations that are able to measure their performance against the advancement towards the SDGs' targets (PwC, 2019). In this regard, several Authors call for the need for developing appropriate management accounting and control systems for assessing corporate sustainability performance in achieving the SDGs (Bebbington & Unerman 2018; 2020; Sobkowiak et al., 2020; Vitale et al., 2019).

In order to fill these gaps and to address the call for studies on management accounting and control systems for sustainability and on the last edge of sustainable development, the SDGs, this thesis examines the following research questions:

R1 - How are SDGs embedded into management accounting and control systems in organizations?

R2 - Which levers and barriers do companies need to consider when implementing SDGs into management accounting and control systems?

In order to achieve the aim of the thesis, the following chapter will illustrate the theoretical lenses that will be used to make sense of the empirical evidence and answer the research questions identified.

CHAPTER 2

MANAGEMENT ACCOUNTING AND CONTROL FOR SUSTAINABILITY FROM AN INSTITUTIONAL PERSPECTIVE

Summary: 2.1 Introduction; 2.2 The institutional theory; *2.2.1 From "old" to "new" institutional theory*; *2.2.2 The organizational fields and the isomorphism mechanisms in the new institutional theory*; 2.3 Understanding sustainability management accounting and control through an institutional approach; 2.4 The "institutional tool kit".

2.1 Introduction

The aim of this chapter is to illustrate the theoretical lens used to interpret the empirical evidence and analyse how organizations adapt different types of management accounting and controls systems when they integrate sustainability elements, such as the SDGs. In recent years, neo-institutional theory has been extensively used in organizational analysis to make sense of the dynamics involved in sustainability corporate practices from both a macro (e.g., actions of groups of organizations, industry etc.) and micro (e.g., single organization, individuals) perspectives (Higgins & Larrinaga, 2014). Accordingly, section 2.2 will outline the main characteristics and foundations of the neo-institutional view of organizations, illustrating how the institutional theory evolved until the main frameworks outlined by DiMaggio and Powell (1983, 1991) on which these studies have drawn upon (sub-section 2.2.1 and 2.2.2). Then, an explanation of the relationship between institutional theory and main studies in sustainability management accounting and

control research field is outlined. In detail, section 2.3 offers an overview of management accounting and control studies which explore the sustainability issues through an institutional lens (e.g., Chaudhry & Amir, 2020; Wijethilake et al. 2017). Finally, by drawing on these insights, in section 2.4, the "institutional tool kit", designed by Lounsbury (1997) and reviewed by Ball and Craig (2010) in the light of environmental and social accounting, is illustrated as the main analytical framework to interpret the empirical evidence and increase the understanding of organizational response to sustainability global issues.

2.2 The institutional theory

The institutional theory relates to "how social choices are shaped, mediated and channelled by the institutional environment" (Hoffman, 1999, p.351). The institutional theory interprets the social context in terms of "institutions", which are specific practices and mechanisms (e.g., laws, ideas, culture etc.) that achieve a degree of social permanency and acceptance (Bebbington et al., 2009; Friedland, 1991; Berger & Luckmann 1966). Core to institutional theory is the notion of "institution", which is experienced as "possessing a reality of their own, a reality that confronts the individual as an external and coercive fact" (Berger and Luckmann, 1966, p. 58) and it is able to shape how and why organizations act in a specific way in a particular context (Higgins & Larrinaga, 2014).

According to Berger and Luckman (1966), an institution is a valuation, a norm or a culture that has arisen through repetition over a long period of time, and which

has become a kind of “unwritten law”, something mutually agreed and not questioned. Similarly, Hamilton (1932, p. 84) states that institution is “a way of thought or action of some prevalence and permanence, which is embedded in the habits of a group or the customs of people”. A more evolved and complex definition of “institution” is provided by Scott (2013, p. 56), which states that “institutions comprise regulative, normative, and cultural-cognitive elements that, together with associated activities and resources, provide stability and meaning to social life”. This latter definition reflects the more recent perspective of institutionalization given by the so-called “new” or “neo” institutional theory that will be developed in the next paragraph.

More general, these definitions put the attention on institutions as the results of social construction of reality when individuals interact each other and when a behaviour is repeated enough times to become a habit or an unwritten law (Rimmel & Jonäll, 2020). Besides, according to Larrinaga (2007), “institutionalization is usually conceived as both the process and the outcome of a process, by which a social practice/behaviour becomes usual, desirable and/or taken for granted in organizations” (p.151). In particular, ideas and practices that reach such a state of influence are said to be “institutionalized” and they represent the outcomes of a process, while the institutionalization process arises when organizations respond to

institutional expectations, which help to guarantee their survival and legitimacy[15] in a particular environment (Higgins & Larrinaga, 2014). Accordingly, the main assumption underlying the institutional theory is that exists some institutional requirements regarding how organizations should look like and how they should act in given situations and context. Organizations conforming to these social requirements (i.e., values, norms and culture), which exist to give them legitimacy in the environment in which they operate, receive support, such as access to material and symbolic resources, that ensure its survival (Smets et al., 2015; Higgins & Larrinaga, 2014).

Relying on this view, institutional theory has a close relationship with both stakeholder theory, which conceives stakeholder as a group or individual who is influenced by decisions made by the organization and themselves are able to influence the organization's agenda and decisions (Freeman, 1984), and legitimacy theory, according to which organizations constantly strive to act within the boundaries of rules and norms set by society and they are constantly trying to gain legitimacy where they operate (Dowling & Pfeffer 1975). Some scholars argue that legitimacy theory is a special part of institutional theory as legitimacy represent an element of institutions (Higgins & Larrinaga, 2014; Bebbington et al., 2008; Tilling, 2004). Furthermore, institutional theory also has a close relationship with

[15] Scott (1995) develops the notion of legitimacy from an institutional perspective as "not a commodity to be possessed or exchanged but a condition reflecting cultural alignment, normative support, or consonance with relevant rules or laws" (p. 45).

several other theories, such as, the resource-based theory and the contingency theory, which rely on the dynamic relationship between organization and its dependency on internal resources and external environment and circumstances (Owen et al. 2014).

However, by contrast to other theoretical frameworks, institutional theory "emphasizes the conditioning role of the social context" and it restrains the rational and calculative managerial behaviour suggesting that "firms undertake these activities because their peers do so and because it has come to be takes-for-granted in the context where they operate. [...] Institutional theory provides insights into why this is so and how such effects come about" (Higgins & Larrinaga, 2014, p. 273). While under a stakeholders or legitimacy perspective activities are carefully planned by managers to meet and shape the expectation of stakeholders or those of the general community, the institutional theory allows to explain how organizational practices become common in a particular context (Higgins & Larrinaga, 2014; Larrinaga, 2007). Furthermore, it is increasingly common to use institutional theory when studying sustainability issues. Organizations and institutions can represent a "solutions to" and "source of" global challenges, such as inequalities, poverty, labour rights, access to healthcare and climate change, and it offers research opportunities in this field (Gehman et al. 2016). Institutional theory might be able to shed lights on significant changes in the socio-economic context through "the understanding of the micro foundations and the macro

consequences of institutions and their impact on a wide variety of globally pressing issues" and encouraging the translation of these insights into policy (Gehman et al. 2016, p. 26). In particular, micro foundations of institutional impacts put the emphasis on the extent to which taken for granted actions, grounded in everyday institutions, have far-reaching social impact in the real time and over time, while macro consequences of institutions shift the attention on how institutions matter for societally outcomes (Gehman et al. 2016).

In summary, institutional theory provides an understanding of how organizations interpret and respond to both social change and traditional pressures and expectations. The theory has been often used in research on sustainability accounting and reporting research field to understand the reasons underling the adoption and the institutionalization of accounting and reporting practices. For example, Dillard et al. (2004) demonstrate how the application of the Global Reporting Initiative (GRI) has been accepted by the society and its adoption ensures organizational legitimacy. In the context of management control systems, the institutional approach provides an important theoretical lens that help answer critical and provocative questions about the world of organizations, such as "why and how do formal and informal control structures arise? Do individuals voluntarily construct rule systems that then operate to bind their own behaviour? Do control systems function only when they are associated with incentives - rewards and punishments - or are other processes sometimes at work? How do differences in

cultural beliefs shape the nature and operation of organizations? If institutions regulate and constitute individuals, how can individuals hope to alter the institutions in which they are embedded?" (Scott, 2013, p. xii). These questions are in line with the research questions that this thesis investigates since they aim to understand how organizations adapt their values, practices and culture, embedded into management accounting and control systems, in relation to institutional requirements, cultural and social expectations underpinning the Agenda 2030. In particular, this thesis allows to explore how institutional factors combine with organizational dynamics to contribute to the initiation and implementation of SDGs accounting and the institutionalization of this practice. However, before illustrating the main studies in the Sustainability Management Accounting and Control research field that adopt an institutional perspective, the next paragraph illustrates the foundations of the institutional theory and its recent evolution toward what is labelled as "neo-" or "new" institutional theory, typically associated with the authors DiMaggio & Powell (1983) and Scott (2004; 2013).

2.2.1 From "old" to "new" institutional theory

In the 1940s and 1950s, early studies in political science start to recognize the existence of individual organizations as distinct elements from both broader social institutions and behaviour of individuals (Scott, 2013). However, the adoption of institutional theory within organizational studies begins in the early 1960s providing a strong contribution to several research areas such as organizational

sociology, institutional economics, accounting and society (Scott, 2013; Hirsch & Lounsbury, 1997). In this period, the organization was considered as a stable institution strongly embedded in social, political and economic relationship (Selznick, 1957). Until the later 1960s, theorists, investigating the complexity of managing organizations, mainly focus on the activities within the boundary of organizations, the politics of decision-making process and conceptualise organizational change as a result of "unplanned" adaptations to new situations (Hirsch & Lounsbury, 1997; Selznick, 1957).

Starting from the early 1970s, research focus shifts on the interplay between organizations and their environment. Specific questions address how organizations adapt to environmental uncertainty and how organizational structures are contingent on the degree of environmental stability (Lawrence & Lorsch, 1967; Thomson, 1967). In this context, organizations are able to enact on the environment by choosing the right strategy. In line with a contingency theory perspective, which dominated organizational theory until about 1980, managers are conceived as strategic thinker who rationally could plan and direct performance enhancing changes (Hirsch & Lounsbury, 1997).

Stemming from sociology, the new institutionalism takes place only in 1980s by emphasizing the power of social, political and economic forces in influencing the organizational context (DiMaggio & Powell, 1983). The new institutionalism does not represent a sharp break with the earlier studies, but it provides new

emphasis and insights (Scott, 2013). For example, neo-institutional approach emphasizes cognitive versus normative frameworks, and it mainly focuses on the effects of cultural and social belief systems operating in the environments of organizations rather than on intra-organizational processes (Scott, 2013). Accordingly, authors such as Selznick (1957) and Thomson (1967) characterize what has been defined the "old" institutional theory or "old institutional economics", while the "new" institutional theory or "new institutional sociology" have been particularly outlined by the authors DiMaggio & Powell (1983; 1991).

Based on the publication "*The New Institutionalism in organizational analysis"* (DiMaggio & Powell, 1991), some Authors outline and summarize the key distinctions between the "old" and the "new" institutional theory in relation to several dimensions (Arroyo, 2012; Hirsch & Lounsbury, 1997; DiMaggio & Powel, 1991). The main differences between the old and new institutionalisms regard the analytical focus, the views about conflict of interest and change, the approach to the environment, translated into sources of organizational inertia and structural emphasis, and the form of cognition (table 2.1).

Table 2.9 - Comparison of key dimensions between the "Old" and the "New" Institutionalism

Dimension	**Old Institutionalism**	**New Institutionalism**
Level of analysis	Organization	Field or society
Organizational dynamics	Change	Persistence
Conflict of interest	central	Peripheral
Source of inertia	Self-interests	Environmental legitimacy

Structural emphasis	Informal structure	Symbolic role of formal structures
Key form of cognition	Value, norms, attitudes	Scripts, routines, schema

Source: elaboration from DiMaggio & Powell (1991)

The main characteristics of the old institutional theory can be summarized in Selznick's (1957) point of view, according to which "institutionalization is a process. It is something that happens to an organization over time, reflecting the organization's own distinctive history, the people who have been in it, the groups it embodies and the vested interests they have created, and the way it has adapted to its environment. […] In what is perhaps its most significant meaning, "to institutionalize" is to infuse with value beyond the technical requirements of the task at hand" (p. 16). According with this view, by embodying a particular set of values, the organization acquires a distinctive identity affected by the degree of institutionalization over time (i.e., institutionalization process) (Scott, 2013). In particular, the old institutionalism views organizations as organic wholes and it describes organizations as embedded in local communities and tied by inter-organizational treaties (Selznick 1996). Thus, the mainly unit of analysis of the old institutionalism is the internal organization dynamics and the intra-organizational process of change over time. The old institutionalism emphasises both the change process and "the vesting of interests within organizations as a result of political trade-offs and alliances" (DiMaggio & Powell, 1991, p. 12). Institutionalization is viewed as a process in which constraining relations with local constituencies evolve over time and organizations become both the units that are institutionalized and the

key elements of this process. Consequently, according to old institutionalist theory, change is an endemic part of the organizational ability to evolve and adapt in its local environment and organization became institutionalized when cognitive forms (i.e., values, norms, and attitudes) internalize organizational values experienced as "commitment" (Selznick 1957). In other word, values, norms and attitude are conceived as "part of an ongoing process of replication, adaptation, modification and/or change over time" (Contrafatto & Burns, 2013, p. 353). Furthermore, old institutionalism highlights how the informal structures (e.g., influence patterns, coalitions) deviated from and constrained aspects of formal structure to demonstrate "the subversion of the organization's intended, rational mission by parochial interests" (DiMaggio & Powell, 1991, p.15; Selznick, 1957).

By contrast, new institutionalism treats organizations as "loosely coupled arrays of standardized elements" and tends to reduce variety, by emphasizing the homogeneity of organizations (DiMaggio & Powell, 1991, p.16). The new institutionalist theory usually restrains conflicts of interest within and between organizations (or try to understand how organizations respond to such conflicts by developing highly formal structures) and stresses the relationship between stability (or inertia) and legitimacy of institutionalized components (DiMaggio & Powell, 1991). Another fundamental difference from old institutionalisms is the conceptualization of the environment. The new institutionalism focuses on non-local environments, either organizational sectors or fields (e.g., industries,

professions, or national societies). According to DiMaggio and Powell (1991), "environments, in this view, are more subtle in their influence; rather than being co-opted by organizations, they penetrate the organization, creating the lenses through which actors view the world and the very categories of structure, action, and thought" (p.16). In this view, institutionalization is seen as a cognitive process in which normative obligations, occurring at the sectoral or societal levels, enter into social life primarily as "facts" that actors must take into account. Consequently, the new institutionalism adopts an inter-organizational view, in which, as opposed to the intentionality of individual action, routine[16] and taken-for-granted nature of most human behaviour, as well as interests and values, are constituted by institutions (DiMaggio & Powell, 1991). Thus, new institutionalism "locates irrationality in the formal structure itself, attributing the diffusion of certain departments and operating procedures to inter-organizational influences, conformity, and the persuasiveness of cultural accounts, rather than to the functions they are intended to perform" (DiMaggio & Powell, 1991, p. 16).

In summary, the old model privileges conflicts of interest, internal power processes, informal structure, values, norms, and social commitments, and saw institutionalism as a process occurring within an organization. The new model emphasizes cultural and constitutive processes, routines and schemas, legitimacy

[16] According to Burns & Scapens (2000, p. 6), rules are "the formally recognized way in which things should be done" and their repetition over time can shape routines or "the way in which things are actually done".

processes, formal structure, and it views institutionalism as a process occurring in the environment of organizations, often at the field level (DiMaggio & Powell, 1991; Scott, 2013). Both the old and new approaches share a scepticism toward rational-actor models of organization, and they perceive institutionalization as a process that limits organizational rationality and options they can pursue. Both emphasize the relationship between organizations and their environments, and both stresses the role of culture in shaping organizational reality. These similarities evince much continuity between the old and the new institutionalism rather than a break or mutually exclusive theory (DiMaggio & Powell, 1991; Scott, 2013). In particular, "old institutional economic is useful to understand the change process but it does not explain the causes of management accounting change as well as new institutional sociology does. In contrast, new institutional sociology does not deal with intra-organizational issues such as internal conflict and power distribution, as old institutional economics does" (Arroyo, 2012, p. 291).

The next paragraph provides a deeper analysis of the new institutional theory and it delineates its main limits, which have been supersede by recent studies that propose an alternative focus to bridge the gap between the old and the new institutional theories (among others Scott, 2013; Arroyo, 2012; Lounsbury, 1997; 2008).

2.2.2 The organizational fields and the isomorphism mechanisms in the new institutional theory

According to the new institutional theory, organizations operate in specific context, which is portrayed by the existence of a system of shared beliefs, symbols and regulation requirements (Scott et al., 1994). Therefore, under a new institutionalism approach, institutions are less likely to change, thus favouring the stability and the homogenization of organizations to meet environmental expectations and guarantee their survival in the particular context (DiMaggio & Powell, 1983). Based on these assumptions, two are the key concepts that characterize and distinguish the neo-institutional theory: the concept of organizational field and the mechanisms of institutionalization.

First, organizational fields define the specific context in which institutions influence organizational behaviour and they are made by those organizations that collectively constitute a recognized area of institutional life (DiMaggio & Powell, 1983). For example, organizational fields could include "key suppliers, resource and product consumers, regulatory agencies and other organizations that produce similar services or products" (Di Maggio & Powell, 1983, p.145). Organizations constitute a field when they share a common framework of meaning and interact more frequently than actors outside the field. According to Scott (2004, p. 7), organisational fields comprise "both cultural and network systems which give rise to a socially constructed arena within which diverse, interdependent organizations

carry out specialized functions. It is within such fields that institutional forces have their strongest effects and, hence, are most readily examined". Organizational activities are constrained by a defined set of legitimate options determined within the field and they are institutionalized if they are perceived innovative and are imitated by others (Hoffman, 1999). In particular, the different pressure in a particular organizational field leads to the convergence of organizational forms and practices (Higgins & Larrinaga, 2014). DiMaggio and Powell (1983, p. 147) explain that "highly structured organizational fields provide a context in which individual efforts to deal rationally with uncertainty and constrain often lead, in the aggregate, to homogeneity in structure, culture and output. […] Once a field becomes well established, there is an inexorable push towards homogenization".

In literature organizational fields have been often identified in relation to the industry, but also to common technologies, common regulation or common organizational strategies in a given geographical area (Higgins and Larrinaga, 2014). However, some Authors start questioning whether organizational fields can be identified around other dimensions (Higgins and Larrinaga, 2014). In particular, Hoffman (1999) proposes the development of fields around "issues" and not just "industries" or "technologies" since the organizational fields represent a centre of dialogue and interaction that influence common organizational behaviour. For example, in the field of sustainability reporting the development of an "issues-based field" starts to replace the influence of local geographical or industry-based field

thanks to the development and institutionalization of global corporate social responsibility and reporting standards (e.g., GRI, the UN Global Compact and Carbon Disclosure Project) that lead to global convergence (Higgins & Larrinaga, 2014). In addition, Levy & Kolk (2002) have studied how multinational firms converged in their response to climate change, thus demonstrating the existence and the development of an issues-based field in the context of sustainability.

Second, under a new institutionalism approach, organizations operating in certain context or field tend to stability and inertia to respond to the environmental expatiations and guarantee their survival. This process of homogenization is called by the DiMaggio & Powell "isomorphism", and it represents the second key concept that characterizes and distinguishes the neo-institutional theory. Isomorphism is defined as the "constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions" (DiMaggio & Powell, 1983, p. 149). DiMaggio & Powell (1983) recognize two types of institutional mechanisms (or isomorphism): competitive and institutional. The competitive isomorphism is relevant in those fields where an open and free competition exists and it emphasizes market competition, niche change and fitness measures (DiMaggio & Powell, 1983). However, competitive isomorphism does not provide an adequate picture of the reality and it has been supplemented by the institutional isomorphism, which, by contrast, refers to the politics and ceremonies characterizing modern organizations that "compete not just

for resources and costumers, but for political power and institutional legitimacy for social and economic fitness" (DiMaggio & Powell, 1983, p. 150). According to the Authors, there are three mechanisms, not necessarily distinct from each other's, through which institutional isomorphic occurs: coercive isomorphism, normative isomorphism and mimetic isomorphism. These three mechanisms are also well known as the three pillars of institutions (i.e., regulative, normative and cognitive) (Scott, 2013) (table 2.2).

Table 2.10 – The three pillars of institutions

	Regulative	**Normative**	**Cognitive**
Mechanisms	Coercive	Normative	Mimetic
Basis of compliance	Expedience	Social obligation	Taken-for-granted / Shared understanding
Basis of order	Regulative rules	Binding expectation	Constitutive order
Logic	Instrumentality	Appropriateness	Orthodoxy
Indicators	Rules, laws, sanctions	Certification, accreditation	Common beliefs, shared logics of action
Affect	Fear, guilt vs innocence	Shame vs Honour	Certainty vs Confusion
Basis of legitimacy	Legally sanctioned	Morally governed	Comprehensible, recognizable, culturally supported

Source: Elaboration from Scott (2013, p. 60)

The regulative pillar is based on rule setting, monitoring and punishment activities and it corresponds to the coercive isomorphic mechanism. Coercive isomorphism "results from both formal and informal pressures exerted on

organizations by other organizations upon which they are dependent and by cultural expectations in the society within which organizations function" (DiMaggio & Powell, 1983, p. 150). According to this view, organizations become homogeneous by conforming to regulative institutions, which involve the ability to establish rules, inspect conformity and manage sanctions to influence future behaviour (Scott, 2013). The institutional logic underlying the regulative pillar is instrumental since individuals conform to those law and rules that they believe will advance their interests, including obtain rewards or avoid sanctions (Scott, 2013). Furthermore, a mandatory and stable system of rules is enforced by the presence of formal sanction systems that affect actors' interests through the feelings of guilt or innocence (DiMaggio & Powell, 1983; Scott, 2013). In the same way, organizational behaviour is thus influenced because of the potential for reward or threat of punishment and sanctions, which represent the basis to gain legitimacy. For example, environmental and social regulation makes companies adopt new technologies in the production processes or change organizational structures and practices to meet such requirements (Higgins & Larrinaga, 2014).

The normative pillar of institutional theory refers to the normative isomorphism that, according to DiMaggio & Powell (1983), is reached through professionalization, formal education and professional networks. Normative institutional influence is often based on cultural expectations and on the desirable things should be done according to current social values and norms (Higgins &

Larrinaga, 2014). By assuming a prescriptive nature, values and norms[17] lead organizations and individuals to follow perceived expectations and appropriate behaviour about "the right things to do". In this vein, normative institutions widely refer to values and norms that have a moral and ethical ground or norms established by referential bodies. The normative mechanism may be applicable to all organizations or may vary among different actors or positions, giving rise to "roles" – "conceptions of appropriate goals and activities for particular individuals or specified social positions" (Scott, 2013, p. 64). Furthermore, while instrumentalism is the basic logic for the reasons why firms respond to the regulative pillar, it is the appropriateness of normative pillar that shape organizational response about what is the appropriate ways to pursue defined goals and objectives (Scott, 2013). Empirical indicators demonstrating the existence of normative institutions include accreditations and certifications by standard setting bodies and professional associations. For example, the use of deontological codes shape practice in many professions or the adherence and commitment to the recent principles outlined by the UN Global Compact are perceived as appropriate since they are accepted by the society (Larrinaga, 2007). As with regulative pillar, normative mechanisms evoke strong feelings such as the sense of shame and remorse or respect and honour for those who exhibits exemplary behaviour (Scott, 2013). Organizations that do not

[17] Scott (2013, p. 64) provides the following definitions about *values* and *norms* "values are conceptions of the preferred or the desirable together with the construction of standards to which existing structures or behaviours can be compared and assessed. Norms specify how things should be done; they define legitimate means to pursue valued ends".

comply with those values and norms may incur into reputational risks and decreasing trust from the environment where they operate.

Finally, the cognitive pillar stresses the centrality of symbolic systems and cultural rules in supporting organizational legitimacy and taken-for granted behaviours. The isomorphic mechanism that better capture this cognitive institutional dimension is the mimetic isomorphism, "a powerful force that encourages imitation" (DiMaggio & Powell, 1983, p. 151). The mimetic isomorphism is based on the organization's desire to be like other organizations, often ones that seem to be more successful and legitimate (Higgins & Larrinaga, 2014). In particular, DiMaggio & Powell (1983, p. 151) state that "when organizational technologies are poorly understood, when goals are ambiguous, or when the environment creates symbolic uncertainty, organizations may model themselves on other organizations". Thus, the cognitive pillar of institutional theory stems from uncertainty and, as so, it is expressed in feelings as confidence for those actors aligning themselves with the prevailing cultural beliefs (Scott, 2013). In line with this view, it is argued that "waves" in the use of particular concepts and practices by organizations, such as CSR practices or the publication of sustainability reports, are associated with imitation rather than rationality (Larrinaga, 2007). The cultural elements of institutions vary in the degree to which they are embedded in routines or organizational schemas, and they operate at multiple levels that include common frames and patterns within organizational

beliefs and culture systems, shared assumptions and ideologies that define specific political or economic systems at national or transnational levels (Scott, 2013). The constitutive function of the cognitive pillar concerns the construction of social reality through symbolic processes to define the nature and the characteristic of social actors and actions (Scott, 2013). The underlying logic of cognitive pillar is the "orthodoxy" according to which organizations prefer to act in conventional ways to act accordingly to routines and taken-for granted activities (DiMaggio and Powell, 1983).

In conclusion, according to the new institutional perspective, organizational institutionalism examines the adaptations and conformations of the organizations to the pressures of these different institutional mechanisms to get legitimacy (DiMaggio and Powell, 1983, 1991; Scott, 2004). The existence of different mechanisms does not mean that they exclude each other, but that rather they are likely to operate at different levels of analysis thus contributing to organizational fields change. Traditionally, the coercive, normative and mimetic institutionalisms have been conceptualized as leading to the stability and inertia of organizations. However, some Authors explain that institutions provide stimulus and guidelines for acting, as well as constraints on action, and for reaching "incremental and revolutionary" change that they themselves undergo (Scott, 2013; Lounsbury, 2008; Dillard et al., 2004). According to Scott (2013, p.58) "much of the impetus for change occurs through endogenous processes, involving conflicts and

contradictions between institutional elements". While the first interpretations of the theory of the new institutionalism were focused directly on isomorphism and legitimating, a significant body of the most recent works has demonstrated a strong interest towards the process of institutional change, "as a way in which fields come about and how institutions within them change over time to induce different patterns" (Higgins & Larrinaga, 2014, p. 279). For example, Hoffmann (1999) studies how organizations and fields evolve as regards of environmental issues and demonstrate how coercive, normative and cognitive pressures have different importance over time in the changing process. Similarly, Lounsbury, (2008) questions the traditional understanding of neo institutional isomorphism shifting the attention towards organizational heterogeneity, organizational rationality and change in contrast to the "non-rational mimicry and stability". Thus, scholars are increasingly focusing not only on how institutions arise and are maintained, but also on how they undergo change, thus getting closer to the old institutionalist perspective (Contrafatto & Burns, 2013; Scott, 2013). In particular, in relation to change and institutionalisation of sustainability practices, Higgins & Larrinaga (2014) suggest focusing on four themes which require further development and inspection: the initiating event of institutional change, the evolution of institutional fields, the role of different structures on institutional change, the relationship between competitive forces and institutional structures. In this regard, a particular emphasis is given to the first theme and to the ability of the institutional approach

to focus on the shaping effects of social pressure as initiating event for the institutionalization of new organizational practice (Bebbington, et al., 2008). Initiating events can arise from pressures coming from social expectations and social movements that reshape normative expectations of busines activities (Ball & Craig, 2010). Besides, event and factors leading field change could include catastrophes, legal and administrative events that lead organizations to go beyond established practices and to experiments new institutional activities (Hoffman, 1999). Change requires shift in activities (i.e., habits and routines), as well as in value and interest at the organizational and broader societal level. Given the growing relevance and attention sustainability is assuming for policymakers, the scientific community and the more broad society, the events that have shaped changes and the institutional evolution in the sustainability field (i.e., issue-based field) since the Brundtland Report and the environmental catastrophes during the 1980s, as well as the role businesses may have as sustainable development agents, the following paragraph provides an understanding of the sustainability management accounting and control systems under a neo institutionalist approach.

2.3 Understanding sustainability management accounting and control through an institutional approach

As discussed in the first chapter, sustainability issues in organizations cannot be marginalized only into disclosure practices, rather organizations should incorporate sustainability values into their core business and into day-to-day

operations, turning them into managerial practices (Engert et al., 2016). As stated by Maas et al. (2016b, p. 244), management accounting and control for sustainability "cannot be seen as a voluntary action only, but firms are also challenged to recognize it as a necessary managerial practice to build a broad and useful information base to align sustainability performance and managerial systems to the institutional context where the company operates". In this vein, institutional theory offers an interesting perspective to analyze factors that determine corporate sustainability development patterns linked to different pressures. In relation to sustainability practices, it is widely recognized the presence of all the three institutional pressures that lead companies to conform to social norms of acceptable behavior and to gain social legitimacy, for example, by conforming to rules (i.e. coercive isomorphism) set to guarantee the attention of companies to sustainability issues (e.g. regulation on environmental pollution, payment of minimum wages etc.), by taking part to professional networks or other sustainability initiatives that promote environmental friendly business as well as training and education (i.e. normative isomorphism) or by imitating organizations that exhibit the best managerial practices and sustainable behavior (i.e. mimetic isomorphism) (Corsi & Arru, 2020; George et al., 2018; Wijethlake et al, 2017).

It results clear that sustainability represents an issue-based field in which organizational activities are constrained by a defined set of legitimate options (Levy & Kolk, 2002; Hoffman, 1999) and where institutional pressures represent a

relevant factor for corporate sustainable development because of the uncertainty and significant externalities associated with sustainable development (George et al., 2018; Bansal, 2005). In the rapidly changing environment that characterizes the sustainability field (see section 1.3), a key challenge faced by organizations is to design and implement managerial practices that are able to capture the institutional pressures for sustainability coming from multiple stakeholders to pursue high standards of environmental and social responsibility and to reduce exposure towards critical financial and reputational risks (Wijethlake et al, 2017). Against these external pressures, the way companies respond to institutional pressures for sustainability represents a significant indicator of the effectiveness in addressing sustainability challenges and gaining social legitimacy (Wijethlake et al., 2017; Bansal, 2005). Companies' commitment to sustainable development can be expressed in several ways: from improving sustainability disclosure to defining new strategies and increasing commitment toward sustainable development (Corsi & Arru, 2020). In the first case, companies need to define measurements and accounting systems able to collect data and information to comply with norms, meet external requirements and being accountable to all stakeholders (Corsi & Arru, 2020). Accordingly, institutional theory become one of the dominant theoretical perspectives to study the practice of accounting in organizations and several studies focus on the role of accounting in the institutionalization process, through which change takes place, and on the influence of accounting practices in the socio-

political context of the institutional formations (among other Contrafatto & Burns, 2013; Bebbington et al., 2009; Dillard et al., 2004). For example, recent studies examine how the coercive, mimetic and normative pressures represent significant drivers for the adoption of environmental management accounting practices with the potential to enhance environmental performance and contribute to sustainable development (Latif et al., 2020; Chaundry & Amir, 2020).

In the second case, companies need for an adequate accounting and control systems which help transfer sustainable strategies into operational activities and to demonstrate the internal strategic relevance of sustainability, as well as a strong social and environmental commitment (Corsi & Arru, 2020). In this regard, a stream of research has started to question how accounting and control systems translate sustainability strategies into organizational performance focusing on the institutional pressures in explicating the diffusion of sustainability corporate practices and tools (Gunarathne et al., 2021; Corsi & Arru, 2020; Wijethlake et al., 2017), as well as, in investigating management accounting and control changes triggered by social and environmental concerns (George et al., 2018; Arroyo, 2012).

According to Wijethlake et al. (2017), management accounting and control systems play a key role in the strategic response to institutional pressures for sustainability. First, organization use management accounting control systems for specifying and communicating their sustainability objectives, policies and plan both internally and externally. In this context, belief systems could be useful to

communicate core values and sustainability commitment in a mission statement or using CSR strategic planning (Arjalies & Mundy, 2013). Second, management accounting and control systems support monitoring sustainability performance through measurement systems and other formal control systems (i.e., budgeting, variance analysis etc.). Monitoring sustainability performance represents the central task in the strategic response to institutional pressure, without which "sustainability projects and practices would not be able to complete within the financial and time constraints" (Wijethlake et al., 2017, p. 1682). Third, management accounting and control systems motivate employees to accomplish sustainability goals by linking reward systems to objective achievement. Useful accounting tools and control systems in evaluating the achievement of sustainability organizational goals relate also to balanced scorecards, material flow accounting systems and other sustainability performance measurements. In summary, under the institutionalist approach, the success of any sustainability initiative depends on organizational ability to measure and control corporate sustainability performance by considering stakeholders' demands and expectations (Wijethlake et al., 2017).

Another line of enquiry posits the attention on the ability of management accounting and control systems to support the organizational heterogeneity and organizational change in response to institutional pressure for sustainability. In contrast to the neo institutional assumption of isomorphism homogeneity, scholars increasingly recognized that management accounting and management control

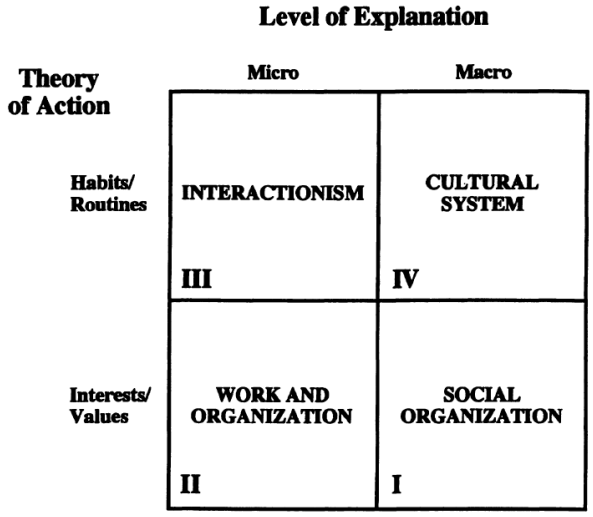
procedures and systems vary significantly between organizations, sectors and societies (Lounsbury, 2008; Whitley, 1999). Whitley (1999), for example, identifies four characteristics of control systems, that differ considerably between institutional contexts: the extent to which control is exercised through formal rules and procedures; the degree of control exercised over how unit activities are carried out; the influence and involvement of unit members in exercising control; the scope of the information used by the control system in evaluating performance and deciding rewards and sanctions. In line with this view, some studies place emphasis on how management accounting practices change in response to environmental and social concerns claimed by several stakeholders. For example, Arroyo (2012) explains the change process that organizations and organizational fields might face while they are moving from the use of traditional to sustainable accounting systems. Other authors highlight that accounting research has focus on practices that have already become institutionalized rather than on new practices and how they gradually become institutionalized (George et al., 2018; Higgins & Larrinaga, 2014; Ezzamel et al., 2007). Accordingly, some Authors have examined companies in the initial process of institutionalization of environmental and social accounting practices and of sustainability management control tools, illustrating the nature of institutional change in relation to organizational dynamics (Corsi & Arru, 2020; Bebbington et al., 2008; Bansal, 2005).

In the recent decade, management accounting and control changes have been triggered by a growing interest on sustainability issues and by the assumption that organizations are no longer passive actors but actively respond to institutional pressures (Wijethlake et al., 2017; Scott, 2013; Lounsbury, 2008). The process of change at the organizational and individual levels begins by a "precipitating jolt" taking place at the field level but that should also affect the perceptions of organizational actors of their taken for granted daily practices (Arroyo, 2012). Management accounting and control systems are able to shape intra-organizational dynamics by responding to institutional pressures for sustainability (Wijethlake et al., 2017; Lounsbury, 2008), as well as they are also seen to influence the process of institutionalization within societal and organizational fields (George et al., 2018; Dillard et al., 2004). In line with this view, Ball and Craig (2010) assess the capacity on institutional theory in providing an understanding of management accounting changes in response to social and environmental concerns. The Authors propose an extension of the institutional theory through the "institutional tool kit framework" proposed by Lounsbury (1997) to understand how timing, organization and acceptance of environmental and social accounting initiatives are likely to differ according to different institutional pressure and context. The next paragraph outlines the key dimensions of the institutional tool kit designed by Lounsbury (1997) and its main interpretation in social and environmental research field in order to build a framework to interpret the empirical evidence of this thesis.

2.4 The "institutional tool kit"

The "institutional tool kit" (Lounsbury, 1997) is a two-dimensional matrix representing four ideal-typical institutional approaches. Calling for a more integrative approach to institutional theorizing, Lounsbury (1997) provides a distinct and innovative theoretical development in which four institutional research perspectives and explanatory strategies in organizational sociology are offered based on two dimensions: theories of action and levels of analysis (figure 2.1).

Figure 2.12 - The Institutional tool kit



Source: Lounsbury (1997, p.467)

The dimension related to the theories of action concerns the two general theories of action used in institutional theory. The first relates to how the behaviour of actors is driven by habits and routines (Lounsbury, 1997). According to this view, the institutional theory emphasizes the institutionalization of organizational

structures and procedures to be taken for granted and viewed as legitimate by the organizations adopting those (Ball & Craig, 2010). The second view emphasizes the role of values and interests where social commitments, political process takes place (Lounsbury, 1997). Here, the institutional lens is conceived as "a shaper of actions by institutions" in which the engagement with specific practice is an attempt to introduce new rules and to influence organizational fields (Ball & Craig, 2010, p. 285). The other dimension distinguishes between explanations based on micro and macro level of analysis. According to Lounsbury (1997, p. 467), the "micro explanation of institutional creation or change focus on how the interaction between people or organizations are the critical motors of causality. Alternatively, explanations may concentrate on how more macrostructural factors such as collective behaviour, social organization, cultural systems and the state are key factors that drive institutional change". Thus, this dimension allows to analyse how organizational life can be effective in the presence or absence of wider societal change (Ball & Craig, 2010).

Based on this matrix, Lounsbury (1997) illustrates the differences among these perspectives by analysing the case of the emergence of recycling in the US solid waste field. Similarly, Ball and Craig (2010) theorised the role of social and environmental accounting in organisational change in two local government authorities using the "institutional toolkit" notion. The Authors enriched the understanding of the changes these organisations make in response to social and

environmental agenda and how they develop social and environmental accounting. Simultaneously, they aim to offer a perspective on the role organisations should take in addressing both social and environmental challenges. The Authors stress the importance of socially responsible and ethical environmental behaviour (reflected into social and environmental accounting or "new accountings"), to help institutions behave in a way that encourage the achievement of sustainable development. In particular, Ball and Craig (2010) have defined four institutional lenses to explain how institutional approaches can frame ideas about social and environmental change and accounting practice. These lenses shed light on the interaction of organizational actors with wider societal interests or social movements (quadrant I), refine the ideological implication of social and environmental accounting for organizational life (quadrant II), direct the attention to how organizations make sense of sustainability through new accounting practices (quadrant III) and reflect how culture, ritual and ceremony shape the reality of organizational life (quadrant IV).

Social organization

The first quadrant indicates a research focus on "how large-scale social systems are constructed" (Lounsbury, 1997, p. 467). It is based on the macro level explanation of how actions are prompted by interests and values, as well as it posits to understand how changes in organizational field reflect broader shifts in macro-social factors (Ball and Craig, 2010; Lounsbury, 1997). In the context of

sustainability field, the macro lens suggests that the debate about sustainability issues arises from the wider societal interests or macro-social factors, such as social and environmental movements (Ball and Craig, 2010). Furthermore, a social organization approach implies asking how current changes are reflected in response to a sustainability agenda, how institutions change their social interaction and how power and interest shape this change (Ball and Craig, 2010). For example, Brint and Karabel (1991) outline a two-stage process based on the generation and realization of interests within an institutional field by focusing on both internal (e.g., the beliefs and activities of managers within organizations) and external (e.g., organizational relationship with the environment) forces which facilitate or hinder the implementation of a policy. Brint and Karabel (1991) demonstrate how the structures and the opportunity in the larger society shape organizational possibilities and efforts to take advantage of the environment and to further their own interests as well as those of the society. Accordingly, through the macro/interest lens, changes are mainly driven by social pressures, and they imply a process of "re-institutionalization"[18] in which questions should arise in terms of whether and how new accountings are part of this process (Ball and Craig, 2010).

[18] Re-institutionalization process implies "exit from one institutionalization and entry into another institutional form, organized around different principles or rules" (Jepperson, 1991, p. 152).

Work and organization

The second quadrant focuses on "more localized activities inside organizations or between an organization and its immediate surroundings" (Lounsbury, 1997, p. 467). The work and organization approach investigates "the social values at stake" in conflict over the definition and the management of practices at local level and it provides a detailed analysis of "how institutional process often involve consequential struggles that results in winners or losers" (Lounsbury, 1997). Management and accounting studies adopting this approach demonstrate how organizations come into conflict over changes to a social accounting system or environmental managers had different influences in organizational responses to a change environmental agenda compared to conventional accountants (Dey, 2007; Larrinaga & Bebbington, 2001). In deploying the micro/interest lens, key questions could be "how ideological interests works within organizations? […] what is the role of the new accountings in any ongoing struggle for meaning in processes of change?" (Ball and Craig, 2010, p.289).

Interactionism

The third quadrant focuses on "how intersubjective meanings between people achieve a high degree of facticity and therefore persist over time" (Lounsbury, 1997, p. 468). The interactionalism approach is mainly interests in "how institutions are built up microprocessually and become taken for granted" (Lounsbury, 1997, p. 473). Through the micro/habit lens, environmental and social accounting appears

as an embedded practices and, as such, organizations can be considered important sources of institutionalisation of new actions, new departments (e.g., office for the environment), new practices or new work roles (e.g., sustainability managers). For example, Dey (2007) highlights how many practices of the case study examined (including fair trade and social corporate responsibility reporting) were generated within the organization and have been reproduced subsequently by other organizations. Furthermore, as stated by Ball and Craig (2010, p. 289), "through this lens we can conceive the micro processes of institutionalisation as struggles for meaning in response to issues of environment and sustainability". Thus, particular attention should be direct to how organizations make sense of sustainability through new service offerings and accounting practices. The principal focus is to explore behind seeming convergences and systems to explore internal processes and changes in terms of reproduction and habits. The micro/habits lens suggests exploring the degree to which accounting developments represent new cultural elements and are perceived as taken for granted, as well as it questions, for example, whether such developments can be linked to practices in the organization and whether new accountings are connected to the experience of those not engaged in producing the accounting (Ball and Craig, 2010).

Cultural system

The fourth and last quadrant is based on "wider knowledge systems that provide frameworks for the behaviour of units within particular systems"

(Lounsbury, 1997, p. 468). The cultural system focuses on macro level explanations of actions characterised by habit and routine, and it reflect the dominant understanding of institutional theory (new institutionalism). Cultural systems include culture, ritual, ceremony and all higher knowledge systems that shape the reality of organizational life (Ball and Craig, 2010). Furthermore, the macro/habits perspective would be useful in analysing how timing, organization, and acceptance of sustainability initiatives are likely to differ according to national context even though global initiatives exerted similar pressure on many other countries (Lounsbury, 1997). For example, Ball and Craig (2010) identify variations in environmental and social accounting practices based on political and cultural distinction across the two local governmental authorities that they examine (e.g., legally binding targets on national greenhouse gas emission reductions, congestion charge etc.).

In conclusion, Lounsbury (1997), through the development of the "institutional tool kit", offers a way of addressing the problems of understanding processes of institutional change. Lounsbury (1997) highlight that these dimensions provide a useful analytical distinction, but, at the same time, he calls for the dissolution of boundaries between the four dimensions. By adopting a new institutional lens, Ball and Craig (2010) have explored the role of new accountings (i.e., environmental and social) should play in change processes by assessing the capacity of the institutional toolkit to provide a fuller understanding of sustainability issues field

into organizational context and its surrounding. Given the growing establishment of sustainability practices into organizational activities, strengthened with the UN Agenda, and the generally recognized role business plays in achieving sustainable development and contributing to the achievement of SDGs (Corsi & Arru, 2020; Mio et al., 2020), this thesis aims to investigate, by adopting a new-institutional lens, how the changes in management accounting and control systems occur when integrating SDGs and, thus, how SDGs favour the institutionalization of internal sustainability practices. In particular, in line with the study conducted by Bebbington et al. (2008) in relation to sustainable development reporting, this study aims to offer insights into the institutionalization of SDGs and the potential new organizational practices in management accounting and control field that may emerge during the early stage of this process – "initiating events of institutional events" as mentioned by Higgins & Larrinaga (2014). Accordingly, this study aims to respond to the recent call for research into the role of management accounting and control systems in changing and improving company practices to achieve SDGs (Corsi & Arru, 2020; Crutzen et al., 2017; Johnstone, 2019; Wijethlake et al., 2017), as well as to supports Lounsbury's (2008; 1997)[19] call for contribution on how accounting and control systems shape organizational dynamics in responding to institutional pressures for sustainability (Wijethlake et al., 2017). Furthermore, as

[19] In particular, Lounsbury (2008, p. 358) states that "an institutionalist would look for systematic variation in management control practices and to link such variation to broader control logics"

we will see in the next chapters, this study develops the institutional analysis at the organizational level, rather than at the field level (e.g., industry, technologies etc.), offering insight into institutionalization of organizational dynamics and practices during the relatively early stage of SDG implementation process. This approach recognizes the important role that business organizations play as field participants and provide an alternative perspective of showing how institutional influences combine with organizational dynamics to shape how management accounting and control systems for sustainability are structured within organizations (Bebbington et al., 2008). However, before analyzing the main empirical findings in light of the neo-institutional toolkit, the next chapter provides an overview of the methodology adopt and the principal steps taken to conduct the multiple case study research.

CHAPTER 3

THE CASE-STUDY METHOD

Summary: 3.1 Introduction; 3.2 Research design: the multiple case study; 3.3 Collecting data: using multiple sources of evidence; *3.3.1 Conducting the semi-interviews*; 3.4 Data analysis; *3.4.1 Data Management; 3.4.2 Descriptive Accounts: classifying and detecting evidence; 3.4.3. Explanatory Accounts: developing explanations and generalize evidence;* 3.5 Cases background: three "journeys" toward the Sustainability Development Goals.

3.1 Introduction

This chapter outlines the main features of the research method adopted to investigate how organizations adapt different types of accounting and control systems when they implement SDGs in existing organizational practices. The research adopts a multiple case-study approach based on multiple sources of evidence, mainly document analysis, semi-structured interviews and informal meeting. The following sections provide an understanding of this qualitative research method and the major steps undertaken to conduct the multiple case study. Section 3.2 describes the motivations behind the choice of the research method and the reasons underlying the selection of the cases. Then, section 3.3 outlines the processes of data collection and provide an explanation on how themes have been identified to conduct semi-structured interviews (sub-section 3.3.1). Subsequently, data analysis (section 3.4) is described by illustrating how data have been managed (sub-section 3.4.1), classified (sub-section 3.4.2), triangulated and explained (sub-

section 3.4.3) to respond to the investigated research questions. Finally, section 3.5 provides an overview of the companies purposefully selected for this research.

3.2 Research design: the multiple case-study

This study adopts a qualitative research method based on a multiple case-study. Qualitative research aims to provide "an in-depth and interpreted understanding of the social world of research participant" by usually adopting an inductive and interpretivist approach (Ritchie et al., 2014, p. 4). The inductive approach allows to firstly gather or examine data to the phenomenon being investigated and then to construct a theory or interpretation (Bryman & Bell, 2019; Lukka, 2007). The interpretive approach drives the analysis of the case-study as interpretation, referring to explaining the meaning of something, results the best means to understand the reality which human actors construct (Chiucchi, 2012; Lukka 2007). In other words, the basic assumption is that reality is socially constructed and that people constructing such reality are "knowledgeable agents", which can explain their thoughts, intentions and actions. (Gioia et al., 2013). In this context, the main role of researchers is "to give an adequate account of the informants' experience" and interpretations (Gioia et al., 2013, p. 17). Furthermore, the inductive and interpretivist stances represent suitable approaches to help the understanding of human actions and the meanings that actors attach to a particular issue in their everyday contexts (Lukka 2007), as well as and explore the day-to-day accounting practices in the context in which people work (Scapens, 1990).

Despite of the several challenges in conducting case research (among others time consuming, need to ensure rigorous and generalizable conclusion from a limited set of case), case studies in management research are useful in an exploratory context and it can have very high impact in creating new insights and developing new theory (Yin, 2018; Voss et al., 2002). Case studies are being increasingly used as a research method for studying social practices in the field of activity in which they take place, offering the opportunity to understand the nature of management accounting in practice in terms of the techniques, procedures and systems (Scapens, 1990). In particular, the case study method "provides practitioners with a deeper and richer understanding of the social context in which they work and make them aware of the problems, and the possibilities for solutions" (Scapens, 1990, p. 278).

Within the research field of Management Accounting and Control for sustainability, the SDGs refer to the complex and so-called, "wicked" problems that pertain to governmental, social, or policy planning, for which it is not possible to define an optimal solution (Rittel and Webber, 1973). As wicked problem, implementing SDGs within organizational practices is challenging since they involve several stakeholders, with different perspectives and priorities and intertwining interests (Camillus, 2008), as well as they also require new knowledge and innovative practices and solution to engage with them that need to be further understood (Laine et al., 2020). Accounting scholars call for avoiding treating the

SDGs as an "add-on" of traditional research and approaches (Bebbington & Unerman, 2020) and to better deal with the challenges that sustainability and "wicked" problems, such as those identified by SDGs, require nowadays (Laine et al., 2020; Tweedie, 2020). Accordingly, qualitative case-study research represents an appropriate approach for addressing these issues and for conducting an exploratory study on how SDGs are embedded into management accounting and control systems in organizations and analyse key levers and barriers companies need to consider when implementing SDGs into management accounting and control systems.

According to Yin (2018), the case study represents the most appropriate method for exploring "how" and "why" research questions "being asked about a contemporary set of events over which a researcher has little or no control" (p. 13). Some Authors posit that the case method also allows the questions of "what" has to be answered with a relatively full understanding of the nature and complexity of the complete phenomenon (Voss et al., 2002; Meredith, 1998; Benbasat et al., 1987). Generally speaking, case study is an empirical method that "investigates a contemporary phenomenon ("the case") in depth and within its real-world context, especially when the boundaries between phenomenon and context may not clearly evident" (Yin, 2018, p. 15). Through the case research the phenomenon is investigated in its natural setting and meaningful and as method it allows to conduct exploratory investigations "where the variables are still unknown and the

phenomenon not at all understood" (Voss et al., 2002, p. 197). For these reasons, the case study research is a method that has been used by several other researchers to study the advancement and the integration of sustainability global issues into management accounting and control systems (among others Beusch et al., 2022; Di Vaio & Varriale, 2020; Burritt et al., 2019; Crutzen et al., 2018; Morioka & Carvalho, 2016a; de Villiers et al., 2016)

This thesis adopts a multiple case-study design based on three cases. Multiple case study is encouraged when there is the need to explore a new issue, capture the complexity of accounting phenomena, and explore the difficulties of implementing new accounting procedures and techniques (Scapens, 1990; Yin, 2018). Furthermore, a multiple case study offers a more complete and comprehensive view of the context by increasing external validity and mitigating observer bias and risk of misjudging compared to single case analysis (Yin, 2018; Voss et al., 2002). The within-case analysis and the cross-case analysis help provide an in-depth understanding of management accounting and control systems for sustainability for each individual case and to indicate the extent to which convergent and contrasting evidence are obtained (Yin, 2018).

The three cases have been selected purposefully (Patton, 1990) as they represent "information-rich cases from which one can learn a great deal about issues of central importance to the purpose of the research" (Patton, 1990, p.169). In particular, the strategy adopted for purposefully selecting the information-rich cases

was the *maximum variation sampling* (Patton, 1990), which aims to capture the problem of SDGs integration and implementation within existing management accounting and control systems across a small sample of great diversity. For this study, the strategy was to look for those companies that are adapting their existing management accounting and control systems or they are experimenting and implementing new systems to evaluate their performance for the achievement of the SDGs. Thus, this study adopts neither a longitudinal nor a retrospective perspective since this study undertakes an *exploratory case study*, which provide a preliminary investigation on management accounting systems, techniques and procedures currently used in practice as well as on new and possibly innovative practices developed by particular companies (Scapens, 1990). The selected cases operate in Italy in three different sectors and have different size and role: in particular, company A is a subsidiary of a multinational company and operates in the manufacturing sector; company B is a holding company that operates in the transportation sector; company C is a medium-sized enterprise working in the textile and apparel sector.

Stemming from these diverse characteristics in constructing the sample, data collection and analysis provide two kinds of findings: first, "high-quality, detailed description of each case" (Patton, 1990, p. 172) useful to illustrate the uniqueness of the existing management accounting and control for sustainability in place; second, shared patterns emerging from the heterogeneity of the sample assume

"particular interest and value in capturing the core experience and central, shared aspects or impacts" (Patton, 1990, p. 172) relating to the existence of potential barriers and levers in implementing SDGs. According to Patton (1990), "there are no rules for sample size in qualitative inquiry" (p.184) since a trade-off between breadth and depth should exists: "in-depth information from a small number of people can be very valuable, especially if the cases are information-rich" (Patton, 1990, p. 184). Regardless the size of the sample, it results important to go into organizations with a well-defined focus to guide the collection of data and to gain opportunity for depth of observation (Voss et al., 2002)

The design of the multiple case research consists of two phases. First, multiple sources of evidence have been adopted to collect data. Semi-structured interviews and document analysis have been adopted to gain insights and depth understanding within each case, while informal meetings have been carried out to also deepen convergent or contrasting evidence. This phase is widely explored in the next paragraph. Second, through a data triangulation process of multiple sources, the stage of data analysis helps examine the evidence and validate the findings through the lens of the neo institutional theory (i.e., analytic generalization).

3.3 Collecting data: using multiple sources of evidence

The multiple case study was conducted over a period of 9 months, from April 2021 to December 2021. However, a previous understanding of the research context has been required to develop research instruments and protocols, determine the

issues that need to be addressed in the conversation and to select the participants to interview (Voss et al., 2002). Over the above-mentioned period, multiple means of data collection, to further increase research validity and ensure data triangulation, have been adopted (Yin, 2018). Semi-structured interviews have been the prime source of data, backed up by two informal meetings and analysis of both internal and external documents (table 3.1).

Table 3.11 - Summary of interviews and informal meetings

Case	**Key informant**	**Interview date**	**Approx. duration**
Case A – Manufacturing subsidiary	Chief Financial Officer	19 May 2021	1 hour
	Controller		
Case B – Mobility holding company	Sustainability specialist	28 May 2021	1 hour
	Sustainability specialist		
Case C – Textile and apparel medium-sized enterprise	Sustainability director	8 June 2021	1 hour
	Sustainability specialist		
Informal meetings	Case A Case B Case C	20 April 2021	2 hours
		15 June 2021	2 hours

Source: Elaboration of the author

In total 3 face-to-face semi-structured interviews, one for each case (Bryman & Bell, 2019), and 2 informal meetings jointly with all the three companies were undertaken through online video conferencing tools (i.e., Microsoft Teams, Cisco Webex, etc.). Each interview has been conducted with two key informants for each company that included the Chief Financial Officer (CFO) and a controller for

company A, two sustainability specialists for company B and a sustainability director and a sustainability specialist for company C. These actors play a leading role in the development of the sustainability accounting and control systems for each company and, as so, they constitute an adequate sample in which both depth and breadth of information is achieved and saturation has been reached (O'Reilly & Parker, 2012; Voss et al., 2002)[20].

The document analysis was conducting by analysing both public documents (e.g., the company website, sustainability disclosure etc.) and internal documents (e.g., code of conduct, ethical code etc.) produced during the period under investigation. Specifically, the documents reviewed were sustainability reports, sustainability policies, companies' ethical codes and code of conducts. Material was gathered starting from public documents to obtain a general overview of company's activity and practices in relation to sustainability issues. Archival records were typically handed out during interviews, and they were presented and discussed during interviews.

The informal meetings were instrumental to the semi-structured interview and to collect further data sources. The approximately duration of each meeting was 2 hours, on average. After each informal meeting, a follow-up email has been sent summarizing the main points discussed in these meetings to receive feedback and

[20] Within quality research the sufficiency of sample size is measured by depth of data rather than frequencies. Therefore, samples should consist of participants who best represent the research topic (Morse et al., 2002). In addition, the concept of saturation is not always an appropriate criterion for establishing quality across all qualitative approaches (O'Reilly & Parker, 2012).

amendments from each company. In particular, during the first informal meeting, companies were illustrated the questionnaire built to guide the face-to-face interviews, to ensure a common understanding of the investigated topic by research participants and research coherence. In the second informal meeting, main results from the interviews have been illustrated and discussed jointly with all the three companies to identify point of convergence or disagreement about main levers and barriers in implementing SDGs within existing management accounting and control systems and account for the specificities of the single companies.

However, both document analysis and informal meetings were used to develop and confirm issues that emerged during the interviews and to construct case study's findings using multiple sources. The case and data collected through multiple methods resulted sufficient to satisfactorily address the research questions (Voss et al., 2002). The benefits of using these three sources of evidence are maximized since the rational of data triangulation is adopted (figure 3.1) (Yin, 2018; Patton, 1990). By developing convergent evidence, data triangulation helps to strengthen the construct validity of the case study since the multiple sources of evidence provide "multiple measures of the same phenomenon" (Yin, 2018, p. 128; Voss at al., 2002).

Figure 3.13 - Convergence and non-convergence of multiple sources of evidence

Source: Yin (2018, p. 129)

As the semi-structured interviews were the main source of data collection, the following section describes the interview process from the preparation of data gathering to the conduction of the semi-structured interviews.

3.3.1 Conducting the semi-structured interviews

Semi-structured interviews represent one of the most important data sources in the case study and they are designed as a kind of "guided conversation" (Yin, 2018, p. 110). Besides, semi-structured interviews are encouraged in multiple case study to generally ensure cross-case comparability (Bryman & Bell, 2019). According to Qu and Dumay (2011, p. 246), "the semi-structured interview involves prepared

questioning guided by identified themes in a consistent and systematic manner interposed with probes designed to elicit more elaborate response". Semi-structured interviews have the benefit to be a flexible and insightful tool, which allow obtaining a deep understanding of different individual perceptions (Qu & Dumay, 2011; Ritchie et al., 2014). As opposed to the survey, an interview represents an open-ended instrument in which participants can add further information during and at the end of the conversation, not necessarily linked to the question that the interviewer asks (Yin, 2018). In this way, the researcher can consider additional topics and issues related to the research question that have not come up in mind earlier. Accordingly, the interview requires relevant abilities of listening and understanding to seek further information and ask for further clarification (Ritchie et al., 2014).

In identifying the topics for the interviews, the main results from the literature analysis have been considered. In particular, literature research on the definition of management accounting and control systems allow to identify six macro themes in which a set of questions to address during the interview have been drawn. In particular, the interviews are based on six principal themes inspired to Ferreira & Otley's (2009) framework mentioned in the first chapter (table 3.2). Ferreira & Otley's (2009) identify 12 questions informing a broad view of the critical aspects of a management accounting and control systems, including the organisation structure, strategies and plans, key performance measures, performance evaluation,

information flows and uses, and reward systems. These questions may help the researcher consider the role of accounting and control in managing organisational performance that goes beyond the traditional approaches and to consider the evolution the systems require due to the changing context because of the increasing impact of sustainability matters on organisational performance (Bebbington & Unerman, 2018; Eccles et al., 2014; Ferreira & Otley, 2009). It is important to underline that the interviews were focused on six out of 12 dimensions proposed by Ferreira & Otley (2009) since some dimensions have been merged or excluded to ensure the coherence with the investigated research questions. For example, the dimension relating to the vision and mission has been included in the dimension of strategy, while the dimension relating to key success factors or organization structure have been not considered because out of the scope of this research.

Table 3.2 summarizes the selected dimensions driving the interviews, while the detailed interview, in which each dimension is further broken down into other questions, for a total of 21 questions, is illustrated in the Appendix 2.

Table 3.12 - Management accounting and control dimensions investigated during the interviews

Dimension	**Key question**	**Explanatory item**
Information flow	Who is involved in the information flow regarding the SDGs?	Information producer; information diffuser; information receivers.
Strategy	How are the SDGs integrated into the strategy?	Strategy definition; strategic objectives and targets; strategy evaluation and analysis tools.

Performance measurement	How are the SDGs integrated into the operational performance measurement systems?	Operational objectives and targets; budgeting and management-by-objective; analysis of variance; performance measurement systems; internal reporting; costing tools; investment evaluation tools.
Information system	How are SDGs data managed?	Information collection, elaboration, and diffusion; breadth of the information system; technology platform.
Incentive system	How are the SDGs linked to the incentive system?	Compensation and rewards.
Disclosure	How are the SDGs' impacts disclosed?	Communication channels; external audience.

Source: Elaboration of the author

The interviews usually started with an opening question about key informants' current role in the company and their experience in sustainability field. This kind of questions allow to gather important contextual information on which the researchers base the following data analysis (Ritchie et al., 2014). The interview proceeded through the six macro themes, sometimes with a different order based on the principal arguments that the participants drew out. Ending questions allow key informants to express their own opinion and to add further insights not planned in the interview guide. The duration of the interviews was approximately 60 min, even if in each interview the participants expressed other additional opinions after disconnecting the recording. Interviews were recorded through the online video conferencing tools and subsequently transcribed.

During the interview a localist approach has been adopted. The localist approach implies a position of interviewing based on the fact that an interview is an "empirical situation that can be studied as such and it should not [only] be treated as a tool for collecting data on something existing outside this empirical situation" (Alvesson, 2003, p. 16). By adopting a localist approach, the interview is an empirical process in which participants produce "situated accounts" that need to be studied in a social context (Qu & Dumay, 2011, p. 242). In doing so, the researcher interprets the "story" of interviewees depending on the characteristics of the interviews. However, the data collected during the conversation are not always able to represent objective findings and it is important to be aware of potential biases that can be present in the interview process. According to Yin (2018, p. 112), the interview process can be influenced in both directions by the perspectives of both the interviewer and the interviewee.

The reflexivity represents a critical aspect in adopting semi-structured interview and it requires to the researcher to adopt a sceptical approach and to evaluate subjectively the data, considering that the interpretation "can never be an exact mirror of reality" (Qu & Dumay, 2011, p. 256). The reflexive approach consists in examining the object of research from multiple view and interpretations to avoid a single or privileged perspective (Alvesson, 2003). During the interview, the researcher and the interviewee construct meaning together through their verbal and non-verbal interaction (Bryman & Bell, 2019). According to Alvesson (2003,

p. 25) “this means challenging the initial interpretation and the researcher confronting himself or herself and possibly the reader with alternative views; these views may facilitate arriving at the "strongest" or most interesting interpretation and/or producing alternative ones, in which the study may offer more than one type of result”. In particular, in the last stage of interviews “the researcher needs to be able to step back from the interview and reflect on how they, or other environmental factors, may have influenced the data collected” (Qu and Dumay, 2011, p. 261). In order words, qualitative research methods are designed to collect personal views and experiences of participants and the research needs to remain neutral and objective as much as possible (Ritchie et al., 2014).

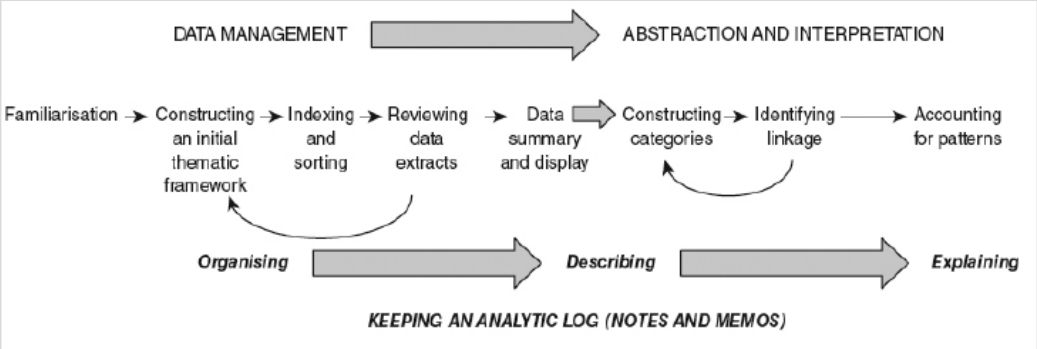
The adoption of both localist and reflexive approaches allow researchers to obtain a better understanding of the complex cases examined in this study and to examine the data in relation to the interview context. The next paragraph illustrates the second step of the multiple case research design, consisting in the data analysis.

3.4 Data analysis

The phase of data analysis “consist of examining, categorising, tabulating, testing, or otherwise recombining evidence to produce empirically based findings” (Yin, 2018, p. 132). It requires analytical skills to identify and process the data, as well as to address evidence to the research question. According to Ritchie et al. (2014), the formal analysis process moves from data-driven descriptive to more abstract themes (from “data management” to “abstraction and interpretation”), by

attempting explanation of the social world of the research actors. The analysis of qualitative research involves three main stages to capture evidence and to obtain a deep understanding of the phenomena (figure 3.2). First, the *data management* allows identifying and sorting data to extract the ones that are in line with research objectives. Second, the stage of *descriptive accounts* consists of classifying and mapping the results in specific categories to analyse and obtain a logical structure of evidence. Third, the *explanatory accounts* provide an interpretation of data by connecting the findings and by developing explanations of the phenomena. The following paragraphs describe in detail the approaches adopted in this study for each stage.

Figure 3.14 - The formal analysis process



Source: Ritchie et al. (2014, p. 279)

3.4.1 Data Management

As first step in developing data analysis, interview transcripts were organized chronologically, and all the data sources were coded and organized around the main

topics previously highlighted to build the case study database (Yin, 2018) (table 3.3).

Table 3.13 - Categorization of data sources

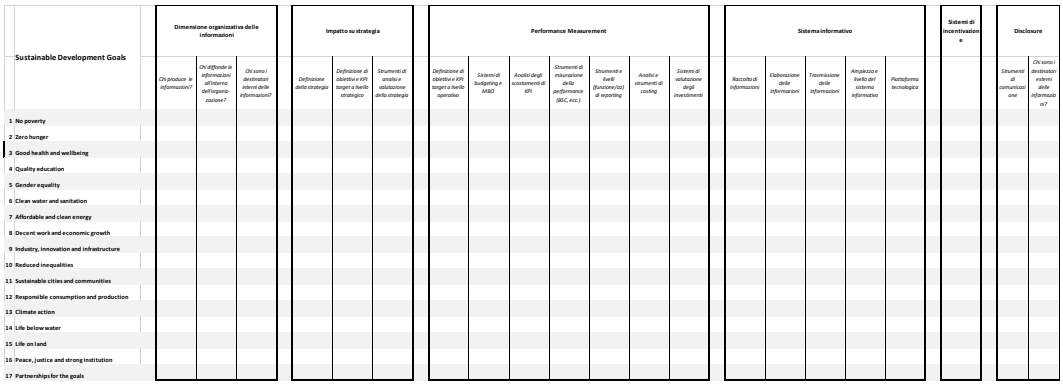
Case	Key informant	Interviewees' code	Documents
Case A - Manufactoring subsidiary	Chief Financial Officer	A1	D1- Company's sustainability policy D2 - Company's ethical code D3 - Sustainability report of the holding company D4 - Code of conduct of the holding company E1- MS Excel worksheets
	Controller	A2	
Case B – Mobility holding company	Sustainability specialist	B1	D5 - Company's sustainability report D6 - Executive summary E2- MS Excel worksheets
	Sustainability specialist	B2	
Case C – Textile and apparel medium-sized enterprise	Sustainability director	C1	D7 - Company's sustainability policy E3- MS Excel worksheets
	Sustainability specialist	C2	
n. 1	Informal meetings with all three companies	M1	D8 - summary of the topic discussed during the meeting
n. 2		M2	D9 - summary of the topic discussed during the meeting

Source: Elaboration of the author

In particular, to manage the wide range of data related to organizational mechanisms and practices underlying management accounting and control systems and delimit the analysis to the most relevant SDGs pursued by each company, the questionnaire has been transcribed in the format of a matrix, using MS Excel worksheet (figure 3.3). Companies were required to fill the matrix, to avoid

misinterpretation and bias by the researcher, thus becoming part of the data sources and ensuring feedback and checking of the data collected with interviews (Voss et al., 2002). The rows of such a matrix consist of the six dimensions further broken down into 21 questions, while the columns of the matrix represent the main SDGs the company contributions to or aims to impact (at least two out of the 17 goals).

Figure 3.15 - Matrix to collect and summarize data



Sustainable Development Goals	Dimensione organizzativa delle informazioni			Impatto su strategia			Performance Measurement							Sistema informativo					Sistemi di incentivazione	Disclosure	
	Chi produce le informazioni?	*Chi diffonde le informazioni all'interno dell'organizzazione?*	*Chi sono i destinatari interni delle informazioni?*	*Definizione della strategia*	*Definizione di obiettivi e KPI target a livello strategico*	*Strumenti di analisi e valutazione della strategia*	*Definizione di obiettivi e KPI target a livello operativo*	*Sistemi di budgeting e MBO*	*Analisi degli scostamenti di KPI*	*Strumenti di misurazione della performance (BSC, ecc.)*	*Strumenti e livelli (funzione/ucr) di reporting*	*Analisi e strumenti di costing*	*Sistemi di valutazione degli investimenti*	*Raccolta di informazioni*	*Elaborazione delle informazioni*	*Trasmissione delle informazioni*	*Ampiezza e livello del sistema informativo*	*Piattaforme tecnologica*		*Strumenti di comunicazione*	*Chi sono i destinatari esterni delle informazioni?*
1 No poverty																					
2 Zero hunger																					
3 Good health and wellbeing																					
4 Quality education																					
5 Gender equality																					
6 Clean water and sanitation																					
7 Affordable and clean energy																					
8 Decent work and economic growth																					
9 Industry, innovation and infrastructure																					
10 Reduced inequalities																					
11 Sustainable cities and communities																					
12 Responsible consumption and production																					
13 Climate action																					
14 Life below water																					
15 Life on land																					
16 Peace, justice and strong institution																					
17 Partnerships for the goals																					

Source: Elaboration of the author

In addition to the data collected through the multiple case study, the other sources of evidence, such as personal notes, documents and reports retrieved during the research period have been collected and analysed. In this phase, interacting and simultaneously analysing different and multiple sources of information with data triangulation allow to obtain a more accurate and convergent findings, as well as to increase confidence in the case study (Yin, 2018).

It is important to underline that the analysis of the case study does not begin after the collection of data, instead it is an ongoing part of the whole process of

qualitative research that should always be alert to the implications of research choices at each stage of the research process (Ritchie at al., 2014). Accordingly, at this stage, there is the risk of losing material evidence and of biasing the evidence with personal interpretations. Original evidence should receive appropriate attention and should maintain "a chain of evidence": the evidence at the earlier stage (e.g., case study questions) should reflect the concepts at the later stage (e.g., case study findings) of the case study (Yin, 2018, p. 135). Accordingly, in reducing the amount of data and maintaining the "essence" of the interviews, the researcher needs to keep original expression of participants and to ensure coherence[21] of the data (Ritchie et al., 2014, p. 229).

In conclusion, the aim of data management phase is to familiarise with data, and it consists of labelling and sorting the data in preparation for more interpretative analysis. However, once the data have been managed, the researcher should engage in the process of abstraction and interpretation (see figure 3.2) to create more analytical concepts and themes and to define patterns of meaning. The abstraction and interpretation phase are composed by a descriptive and an explanation step briefly outlined in the next paragraphs.

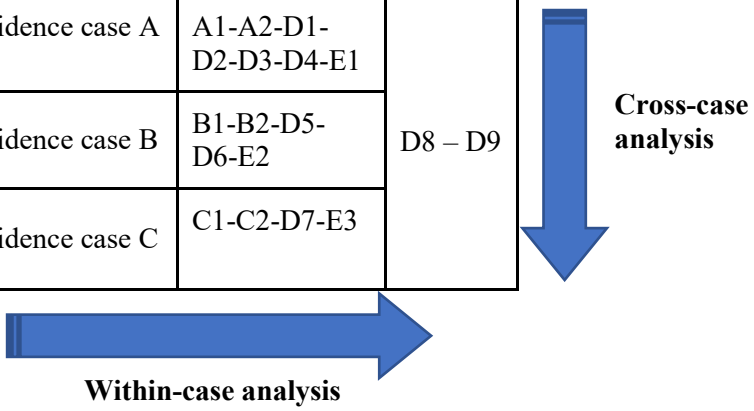
[21] "Once the data is synthesized, it should have coherence in terms of the content displayed such that its essence can be understood without recourse to seeing the original material." (Ritchie et al.., 2014, p. 233).

3.4.2 Descriptive Accounts: classifying and detecting evidence

At this stage, the researcher should map "the range and the diversity of views and experiences, identifying constituent elements and underlying dimensions and proposing key themes or concepts that underpin them" (Ritchie et al., 2014, p. 285). Through the process of categorization, the analysis moves from the surface feature of the data to more analytic properties. In particular, the data extracted and summarized during the data management phase have been categorized and analysed according to the six dimensions previously identified in the literature and adopted to build the questionnaire (i.e., information flow, strategy, performance measurement, information systems, incentive systems, disclosure). In particular, such categories have been furtherly refined, based on the relevance posit by interviewees, and new ones have been emerged (e.g., levers and barriers). For each dimension, evidence from the cases has been collected and analysed, by adopting different colour to label the similar elements and identify the main concepts related to the research questions (figure 3.4).

Figure 3.16 - Categorization of data sources

Dimension	Data source		
· Information flow · Strategy · Performance measurement · Information system · Incentive system · Disclosure	Evidence case A	A1-A2-D1-D2-D3-D4-E1	D8 – D9
	Evidence case B	B1-B2-D5-D6-E2	
	Evidence case C	C1-C2-D7-E3	



Source: Elaboration of the author

Furthermore, in this phase, the within and the cross-case analysis took place to enhance the understanding and the generalisability of conclusions drawn from cases, as well as increase the internal validity (Voss et al., 2002). Each single case has been examined taking into account, as part of data triangulation, all the data sources collected for each case. Only after decomposing each case and extracting coherent evidence within the single perspective, the similar patterns and themes across cases have been tracking and investigated, though maintaining "the unique aspects of each case" (Yin, 2018, p. 201). Accordingly, the cross-case analysis allows to compare responses and evidence in terms of similarity and difference and investigate how "separate aspects of the data interact or hang together" (Ritchie et al., 2014, p. 285).

3.4.3 Explanatory Accounts: developing explanations and generalize evidence

Explanation is usually developed at the later stage of qualitative analysis, when most of the descriptive work has already been undertaken (Ritchie et al., 2014). At this stage, the researcher tries to explain "why do the data hang together in a particular way?" by searching for "factors and processes that can account for patterns of association in the data, trying alternative explanations to see how well they fit" (Ritchie et al., 2014, p. 286).

In relation to this study, both explicit and implicit accounts have been considered. Explicit explanations consider the key informant's own accounts of the intentions and beliefs, and the researchers merely represent the reality without further interpretation (Ritchie et al., 2014). Conversely, implicit accounts involve researcher inferring an underlying logic within the data or using a key analytic concept. In the first case, different types of linkage and an explanation are developed to account for the patterns of association identified. Ritchie et al. (2014) state that "linkage alone does not provide an explanation but constitutes a puzzle that needs to be explained. It is up to the researcher to construct a convincing argument, returning to the data again and again until they understand how the link works, and in what way or ways different factors could have influenced particular patterns or outcomes" (p. 333). In the second case, researcher may wish to place the study within a particular theoretical framework from which powerful

explanatory concepts are developed together with the consultation of other data or other empirical studies to refine articulation of emergent concepts and relationship (Ritchie et al., 2014; Gioia et al., 2012). Theory is used in order to understand and explain the specific case, rather than to produce generalisations (Scapens, 1990).

In line with this latter, in this study findings are drawn on research participants' outcomes and description of reality, due to their role as "knowledgeable agents" (Gioia et al., 2013), and are discussed considering the institutional theory, illustrated the in second chapter. Hence, the multiple case analysis is based on both explicit reasons and accounts offered by the key informants, and it involves implicit explanation developed by the researcher (Ritchie et al., 2014). In particular, the use of informants' terms helps to understand their lived experience. However, being too close to the informants' views, researcher risks to lose the higher-level perspective necessary for informed theorizing (Gioia et al., 2013). The structured research protocol and the use of verbatim rather than summarized evidence contribute towards reduction of this potential bias (Voss et al., 2002).

All in all, within multiple case study the explanatory analytic technique aims to build a general explanation that fits each individual case and that address the most significant aspects of the three-case study (Yin, 2018). The next paragraph provides an overview of the three cases under investigation and illustrates their "journey" toward the implementation of sustainability practices within management accounting and control systems. In particular, companies show

different paths, due also to their different roles and sizes within the societal contexts where they operate, and they are currently at a different stage of their commitment toward sustainable development.

3.5 Cases background: three "journeys" toward the Sustainability Development Goals

Case A

Case A is an Italian large-sized company operating in the manufactory sector. Its headquarter and the main plant is located in Italy, the company has also manufacturing branches and more than 40 operational offices abroad. It also boasts several partnerships worldwide. The company employs more than 1.000 people and has an annual turnover of about 190 million euros. It is an innovation-intensive company and handles all activities related to the design, manufacturing, delivery and sales of its products. Recently, the company has been acquired by a multinational company (hereafter the Parent Company) operating worldwide and managing 13 different brands in the electrotechnical industry. This acquisition represented for case A an important turning point also in terms of sustainability commitment since it contributes to the sustainability reporting and disclosure of the Parent Company. Following the publication of its Parent company's sustainability report, company A has publicly affirmed its commitment goals for "a sustainable future", by contributing to economic progress, social well-being and environmental

sustainability in the geographical areas it operates. Such efforts have been translated into the integration of sustainability elements within the company's values, codes and policies.

Concerning the values, the company founds its responsible commitment on: humanity, to promote the well-being of the people, the company and the environment through the care for empathy, working relationships and reciprocal trust in all activities carried out; integrity, to guarantee the sustainable growth of people and the local area with ethics, morality and responsibility; innovation, aimed to improve the way of thinking, being and working not only of the company but also for the development of the industry; openness, to operate in a network with no borders and to face differences as a way of growing; beauty, to conduct research and stimulate the continuous improvement and excellence.

Company A is guided by the principles and behavioural guidelines of both its own code of conduct and the code of conduct of the Parent Company, in which lay the foundations for a solid relationship with all partners and stakeholders that combines business growth and financial solidity with social and environmental sustainability. Furthermore, the company implement five different policies, which are part of the sources of evidence collected to conduct the case study. These policies namely are "Policy on Human Rights and Working Conditions", "Policy on Health and Safety in the Workplace", "Policy for a Sustainable Supply Chain", "Environmental Policy" and "Energy Policy". Through these instruments, case A

expresses its responsibility for the environment, the people and the supply chain. However, the company do not own a sustainability functional area ad-hoc even if a sustainability managers would be appointed forthcoming. Hence, for the case study, Finance and Administration has been the main functional area involved in the research.

Finally, in line with its Parent Company, case A explicit its commitment to sustainable and responsible company developments in line with Agenda 2030 for Sustainable Development, from which four out of 17 SDGs represent the key priorities: clean and accessible energy (SDG 7); sustainable cities and communities (SDG 11); responsible consumption and production (SDG 12); climate action (SDG 13). For this study, company A selected SDG 7, SDG 11 and SDG 12 on which to base the analysis of its management accounting and control systems. In particular, the first goal mainly refers to the production process, while the latter two goals refer to the company's products.

Case B

Case B is an Italian holding company operating in the mobility sector. Its headquarter and all its subsidiaries are located in Italy to manage and develop mobility networks, services and logistics in Italy and abroad. The company employs around 700 people and has an annual turnover of about 160 million euros. Company B coordinates and controls the whole industrial and financial process of the group

and it coordinates its subsidiaries through five business units: infrastructure design, infrastructure maintenance, services, real estate and business support services.

The sustainability journey of case B is longstanding. The first sustainability report has been published in the early 2000s according to the GRI reporting guidelines. In the same period, the holding group signed the "European Solidarity Charter" for the development of social and societal initiatives in railway stations. The document, inspired by the Treaty of Lisbon[22], involves railway operators of 12 European countries and recognizes the joint efforts of railway and urban transport companies in civic and social engagement by managing social hardship in stations and in the neighbourhoods. The signatories "European Solidarity Charter" also adhere to the European Green Paper on corporate social responsibility and recently the principles of the "European Solidarity Charter" become part of the UN Agenda 2030 for sustainable development. Since then, the sustainability commitment of case B increases and evolved to meet social expectations and comply with the national and international policies, which showed a growing interest and focus on sustainability issues. Among other initiatives adopted by the case B and the whole group, the most significant are: the adoption of the first environmental policy; the carbon footprint certification for the measurement of greenhouse gas emissions produced (ISO14064) and the first certification for the environmental management

[22] The Treaty of Lisbon is an international agreement that amends the two treaties which form the constitutional basis of the European Union (EU). The Treaty of Lisbon, which was signed by the EU member states on 13 December 2007, entered into force on 1 December 2009 (https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=OJ:C:2007:306:TOC).

system (ISO 14001); the creation of the first panel of stakeholders to discuss and gain proposals to improve corporate sustainability commitment; the creation of a Group Sustainability Committee; the joint to the UN's Global Compact network; the renewal of environmental policy with the principles of circular economy, the first Non-Financial Disclosure and, more recently, the approval of a Group's Sustainability Policy.

Nowadays, Case B intends to act as a point of reference for the economic recovery by generating growth, work and income to allow new generations to live in a more sustainable and resilient country. As so, the company has set three main long-term objectives, related to energy and emission, sustainable mobility and safety, and it is currently particularly committed to six goals consistently defined by the Agenda 2030: SDG 12 (responsible production and consumption) and SDG 13 (climate action), both linked to the aim to become carbon neutral by 2050; SDG 9 (industry, innovation and infrastructure) and SDG 11 (sustainable cities and communities) concerning sustainable mobility, to further the modal shift towards collective and shared mobility and incentivise people to use public transportation; SDG 3 (good health and well-being) and SDG 8 (decent work and economic growth), linked to the aim to become best in class in Europe in safety issues by eliminating by 2050 fatalities amongst employees, supplier and other people who interact with the railway and road systems. Since these SDGs almost share the same procedures and practices within organizational management accounting and control

systems, the case B has considered all six goals for the purpose of this study. The main functional area in charge of the implementation of SDGs is represented by the sustainability function, which belongs to the central division of strategy, planning, innovation and sustainability.

Case C

Case C is a medium-sized corporate operating in the textile and apparel sector. Its headquarter and the main plant is located in Italy. The company employs around 250 people and has an annual turnover of about 100 million euros. The company suffered from the 2008-2009 financial crisis that led to a restructuration process for more than 10 years. After the long recovery efforts of machinery and highly skilled workforce, the company reopened and started a new and more sustainable way of doing business. Since 2015, the company implements a series of responsible changes in its industrial practices, starting from the tracking process of foreign suppliers and the transition to more sustainable forms of energy for the production process and the power supply of the headquarter. In addition, the company has created an ad-hoc functional area named Sustainability & Intangible, in charge of overseeing and monitoring all the issues related to sustainability issues, including those pertaining the Agenda 2030.

Case C is currently working on the publication of its first sustainability report. The company choses a step-by-step and methodological approach to integrate sustainability into the creation and redesign of efficient and responsible processes.

This process toward sustainability is experienced day-by-day to overcome challenges and limits, as well as to gradually reduce impacts and improve sustainability performance. The case C is an early stage of its commitment toward sustainable development since, as the same company states, “we believe that sustainability is a long journey and we want every step to be meaningful and relevant”. Accordingly, the company has chosen so far to adhere and align most of its practices related to procurement and production activities with the best international standards and certifications, such as the Better Cotton Initiative and the Global Organic Textile Standard, as well as it is promoting the increasing use of sustainable packaging with recycled materials. For this study, case C opts for addressing the SDG 8 (decent work and economic growth) and SDG 12 (responsible production and consumption) in relation to the management accounting and control systems as they represent the key sustainability issues that the company are facing nowadays.

CHAPTER 4

INTEGRATING SDGs INTO MANAGEMENT ACCOUNTING AND CONTROL SYSTEMS: KEY FINDINGS AND DISCUSSION

Summary: 4.1 Introduction; 4.2 The state of art of SDGs into organizational management accounting and control systems: a cross-case analysis; 4.3 Emerging challenges and opportunities; 4.4 Discussion of the main findings through the lens of institutional theory; *4.4.1 Social organization; 4.4.2 Work and organization; 4.4.3 Interactionism; 4.4.4. Cultural system*.

4.1 Introduction

This chapter aims to contribute to the literature on management accounting and control systems for sustainability by adopting the institutional theory as a lens to interpret the evidence collected from the multiple case study. To this end, the chapter illustrates and discusses the main findings for investigating how SDGs are embedded into existing management accounting and control systems and which levers and barriers companies need to consider when implementing SDGs into those systems. The empirical findings will be presented in section 4.2 through the six main dimensions, identified for conducting the interviews, which overly the key aspects of management accounting and control systems. In response to the first research question, findings illustrate the state of the art of the actual systems and practices to account for SDGs' contribution and impacts. The results show the evolution of the systems required for introducing sustainability matters within the

organisational performance. Furthermore, section 4.3, by answering the second research question, provides a broad view of the critical aspects and main opportunities that organizations recognize in management accounting and control systems in the specific context of Agenda 2030. Then, the main findings are discussed in section 4.4 by adopting insights from the institutional view of organizations and based on the four institutional perspectives proposed by Lounsbury (1997) (sub-sections 4.4.1, 4.4.2, 4.4.3, 4.4.4), while the research implication and contributions are outlined in section 4.5.

4.2 The state of art of SDGs into organizational management accounting and control systems: a cross-case analysis

This section presents the main findings of the multiple case study in the form of the six dimensions related to management accounting and control systems. These dimensions help consider the role of accounting and control in managing organisational performance that goes beyond the traditional approaches and the evolution the systems require due to the changing context because of the increasing impact of SDGs, as an expression of sustainability global issues, on organisational performance (Bebbington & Unerman, 2018; Eccles et al., 2014; Ferreira & Otley, 2009). In detail, by answering the first research question about how SDGs are embedded into existing management accounting and control systems, empirical findings cover the dimensions of (1) information flow, to understand who are the actors and organizational divisions involved in the information and production of

SDGs-related information; (2) strategy, to understand the pervasiveness of the SDGs in the strategy formulation process; (3) performance measurement, to provide insights on what kind of information is usually produced for the performance measurement and what kind of tools are adopted with reference to the SDGs; (4) information system, to shed lights on the process of production, transmission and use of SDGs-related information from a technical point of view; (5) incentive system, to understand how the SDGs are linked to the remuneration and reward systems; (6) disclosure, to look for consistency and linkages between externally and internally communication of the SDGs' impacts.

Each dimension is examined by highlighting the different perspectives of each case study to bring out the main differences and similarities across the three organizations analysed. In addition, verbatim quotes of the participants are reported to provide a better understanding of the main perspectives and evidence in line with the research questions that this study aims to investigate.

Information flow

Information flows, systems and networks represent the essential enabling mechanisms in management accounting and control systems since they allow the transmission from the producer to the key recipients of the information. This dimension refers to how performance and control information is structured and which characteristics the information flows have in terms of scope, frequency,

aggregation (i.e., by period or by functional area) and integration (i.e., inter-relationship and interactions between subunits) (Ferreira & Otley, 2009).

Findings demonstrate that, in addition to the characteristics of the SDGs-related information, which requires reliable and comparable data reflecting companies' contribution towards the Agenda 2030 (UNCTAD, 2019), the mechanisms in place for information flows, overlying the entire management accounting and control systems, are highly dependent on organizational structures of the company and on the presence or absence of a sustainability functional area. In line with the study conducted by Morioka & Carvalho (2016b), sustainability performance information and data are mainly produced by a specific functional area or department. The operational functions mainly refer to the area of Environmental and Safety, for what concerns the information related to energy consumption, Sourcing, in relation to the scouting of innovative and sustainable materials, and Product Planning and Design, with the support of Quality or Marketing functional area, in relation to the assessment of sustainability features of the products starting from the product concept and creation phase. In this process, a key role is played by the sustainability function within the organization since it acts as a collector of the sustainability information coming from the operational functions and it diffuses such information within the organization. In the absence of the sustainability functional area, as for case A, it is possible to notice how the information flow follows different channels depending on the responsibility and the account of each

function in producing and diffusing a specific information connected to the SDGs issues. In particular, in this latter case it is possible to recognize two information flows: first, information for internal reporting is mainly produced and diffused by operational functions; second, information for external reporting is collected and transmitted by financial functional area towards the parent-company.

Another significant aspect underpinning the role of sustainability function within the information flow dimension is the relevance of networks, which is something that is shaped by the prevailing organizational culture (Ferreira & Otley, 2009). As explained by the sustainability director of case C:

> "The sustainability function adopts an in-house approach for everything is technical and sustainability related. However, it assumes a cross-cutting extension within the organization because it involves different functions in terms of information, goal setting and strategy implementation. All the functions necessarily must work on sustainability and consequently the various sustainability information is often transversal to people and functions because sustainability operates across the lines. […] So, the production and the diffusion of information arise from the interaction between Sustainability and Operation and Product functional areas. Then, the sustainability function conveys the information produced, consolidates it, makes it more usable, but it comes from an interaction between all these functions." (C1)

Thus, the sustainability function can create a network between different functional areas and it plays a key role in the dissemination of information within the organization. Furthermore, the creation of a cross-functional team, as for case C, allows to obtain a more comprehensive and holistic overview for both strategic and operational decisions. Each functional area contributes to the cross-functional team with its technical information and assessment in relation to the sustainability

performance of suppliers and products. Adopting a multidisciplinary approach, in which different organizational area are committed, allow all the employees to be both involved and acquire professional skills and knowledge to behave according to SDGs (Di Vaio & Varriale, 2020).

At the end of the flows, the information is shared mainly with the Direction through periodic reporting. Ad-hoc reports are produced only for operational functions for internal use or by request. Hence, a systemic diffusion of sustainability reports and information across the organization seems to lack, unless of explicit requests. Conversely, the diffusion of sustainability information across different functional areas enables the full involvement of all company levels, activities and tools required to address sustainability issues (Vitale et al., 2019).

Furthermore, it emerges how the information flow is mainly guided to comply with specific international certifications and programmes widely recognized and accepted, such as the World Class Manufacturing (WCM) programme or Global Organic Textile Standards, which calls for continuous improvement and increased efficiency in the production process by reducing wasting materials. For example, in relation to energy efficiency linked to SDG 7, the CFO of company A states that:

> "Most of the information is used to control consumption and consequently costs. It also includes optimization activity for the World Class Manufacturing program, so for waste reduction, and as far as we know, these are essentially efficiency reasons" (A1).

Several data and information on sustainability issues, most of which are recalled by the SDGs, are already collected by organizations since they are required

to obtain international certification and programme adherence. Thus, it seems to be confirmed the trade-off between readily available data that had been originally framed for other purposes and the data ideally suited for calculating performance against the SDGs' performance (Bebbington & Unerman, 2020; Sobkowiak et al., 2020).

Strategy

This dimension tackles the issues of how strategies and plans are created and communicated (Ferreira & Otley, 2009). Strategy represents "the direction the organization choose to pursue over the long term as the means of achieving organizational objective" (Ferreira & Otley, 2009, p. 270). Research highlights the fragmented approach that most organizations take to incorporate SDGs into their business strategy (Bebbington & Unerman, 2020; PwC, 2019) and the lack of tools for the early stages of strategy management and development, which can shape transformative change and foster SDGs action (Grainger-Brown & Malekpour, 2019). These results are confirmed by the empirical evidence of the cases under analysis, which present three different ways and stages of SDGs' integration within organizational strategy. The most structured process in definition of SDG-related strategy is implemented by case B, which deals with the selected SDGs with a one-size-fits all process. The sustainability specialist of the company explains that:

> "Our main SDGs, to which we contribute, are essentially related to some long-term goals that we have defined for 2030-2050, in 2019. It was a sharing journey done with the main stakeholders of the Group, such as the Ministry,

> associations, and industry representatives. We shared with this panel the three long-term goals that involve three key lines of analysis, namely: energy and emissions, to get to Carbon Neutrality in 2050; sustainable mobility in terms of modal shift, both passenger and freight side; and a goal, which is more a vision, related to safety, which is to get to zero fatalities in 2050. In any case, these goals represent an important commitment by the Group with these stakeholders and they are publicly available in sustainability reporting and on our website" (B1)

For case B, the materiality assessment and the stakeholders' engagement process have defined further strategic priorities, which highlight other social expectations in relation to the themes of ethical business conduct, linked also to SDG 16 (peace, justice and strong institutions), or to themes of inclusion, people's development and empowerment, strictly related to the SDGs 5 (gender equality) and 10 (reduce inequalities). By examining the sustainability report (D5) and the executive summary (D6) of the holding group, it emerges also how the main strategic priorities, having a direct impact on the company's contribution to SDGs, mainly come from external regulatory pressure. Within the report, case B explains how its activities and its industrial and strategic plan are aligned to the recent European Taxonomy (Regulation UE 852/2020), addressing the issues of sustainable investments and compliance with the principle of *Do Not Significant Harm* (DSNH). Furthermore, an alignment also with National Recovery and Resilience Plans (PNRR) is boasted, which promotes infrastructure for sustainable mobility and the achievement of the Agenda 2030.

However, whereas the "ideation phase" of the strategy, as defined by Grainger-Brown & Malekpour (2019, p. 5) by referring to the development of the desired or expected objectives informed by the organization's socio-economic purposes, seems to be well established within case B, the interviews highlight the lack of expected outcomes in the form of specific and measurable objectives. This is due to the fact that the organization, as for the other investigated cases too, is still at an early stage of strategy development. In its role as holding group, the company is planning to implement and integrate sustainability plans for all the subsidiaries in which each sustainable and strategic initiative and goal is mapped, deployed and measured through KPIs able to indicate the contribution towards the SDGs.

In relation to cases A and C, the alignment of SDGs to organizational strategy is missing or not explicit. In particular, as emerged in other studies (Beusch et al., 2022; Grainger-Brown & Malekpour; 2019), the alignment with the most strategic SDGs for both companies is made ex-post the definition of organizational strategy and the integration of sustainability is rather made into companies' core values and Code of Conduct. For example, case A created environmental, energy and procurement policies, which comprise some of the issues partially covered by the selected SDGs (D1). Although, those policies, together with the Code of Conduct (D4), have been designed to be aligned with the parent company and to share with the main stakeholders (i.e., suppliers) broad sustainable goals. Similarly, case C, to comply with international certifications, sets some sustainable strategies to enhance

and develop a competitive and sustainable supply chain and products. Such strategies recall some of the aspects addressed by SDG 8 and 12, but they are developed for other purposes. As explained in one of the documents shared with the researcher, in relation to SDG 8, case C states that:

> "Achieving positive results in terms of social performance also represents an opportunity to increase the competitiveness of the supply chain: if shared with the market, it allows to obtain an added value for the consumer and to represent an element of brand distinction, at a historical moment when awareness and sensitivity to these issues is increasing considerably" (E3)

The market pressures, in term of competitors' practices and customers' expectations, is widely felt as the company put in place several sustainability actions in line with best practices and competitors' performance belonging to the fashion industry. In particular, case C monitors the performance of its suppliers through specific scorecards provided by internationally recognized independent third-party entities, with which the company analyses and monitors the suppliers' performance improvements, also based on the geographic context and the size of the firm. Once the rating is obtained for each supplier, results are compared with the average industry performance of the given geographic area to which they belong. Through this scorecard, which analyses 21 sustainability criteria concerning ethics, environment, social dimension and supply chain management, the aim is to build a long-term partnership with suppliers with a logic of growth both "technical and performance that needs to be shared with the manufacturer" and to "work together to reduce the environmental and social impacts that are

related to products, product development and production" (C1). The sustainability director also concludes by stating that:

> "We will plan to start evaluating these products from the point of view of environmental impacts and start giving a quantitative connotation to these efforts that we are making to see how we can reduce the environmental impacts or monitor the social aspects of our products annually." (C1)

The findings confirm that the approach to sustainability issues is a continuous and constant process that need to be managed daily alongside traditional managerial practices, business tools and functions (Vitale et al., 2019). The integration of sustainability in strategic elements and goals results incrementally and gradually added in existing management control systems and practices to reinforce and ensure corporate sustainable commitment (Vitale et al., 2019; George et al., 2016). Management accounting and control systems allow to formalize both short and medium-long term objectives and then translate them into operational activities (Laine et al., 2021). However, findings demonstrate that, at an early stage of integration of SDGs into management accounting and control systems, companies' strategies results mainly focused on mapping their existing programs or value chains against SDGs and using the SDGs as a competitive advantage and to align business activities accordingly (Grainger-Brown & Malekpour; 2019). An integration of SDGs performance management and measurement at an operational level is lacking as it will be discussed in the next paragraph.

Performance measurement

The dimension of performance measurement facilitates the links between operational and strategic goals and it includes both financial and non-financial measures used at different levels to evaluate the success in achieving organizational objectives and strategies (Ferreira & Otley, 2009; Chenhall, 2005). This dimension embraces all the management accounting and control tools which are included in the cybernetic control package according to Malmi & Brown's framework (2008), such as budgeting, costing and hybrid performance measurement systems (e.g., BSC).

Given the infancy stage of the integration of SDGs at strategic level, it is not surprising that the development of management accounting and control tools to evaluate and measure SDGs' performance and contributions result also limited in considering the cases under analysis. The performance measurement systems seem to be driven by the different paths and stages that each company has taken toward the sustainability journey. For example, the controller of case A explains that:

> "The work we are doing on sustainability is fairly "new," because we have focused on this area since last year as we have been acquired by our parent company, which prepares the sustainability report. Only now we are entered more operationally into measuring this kind of information related to social, environmental and governance issues. We had to equip ourselves in collecting the information and not all areas are fully covered yet. For example, on social issues, we don't have as much data or initiatives to mention. […] The parent company indicates what the SDGs are and where we are going to work. However, there is still not the mechanism, at the parent company level of strategy, for measurement […] to date they don't give us targets to reach. This is for us the zero point from which we will try to improve our performance.

> Let's say, we are in a very embryonic stage. We are in the "let's get organized to gather as much information as possible" stage." (A2)

The lack of implementation of sustainability-oriented management accounting and control tools leads organizations to derive information and data related to SDGs performance from conventional management and control tools. During the interviews, all the companies under analysis have stressed some of the limits of their performance measurement systems "as-is" and they particularly focused on the potential of their systems "to-be". They plan and they aim to have a more structured integration of sustainability performance within existing management accounting and control systems and to adopt sustainability-related tools such as the LCA or the SBSC. For example, as explained by the sustainable director, case C is trying to integrate the three dimension of sustainability and the issues related to SDG 8 within the existing scoring system in place for the evaluation of its suppliers, which involve cross-functional meetings and semi-annual reporting able to provide an overall assessment of the sustainable performance of the supply chain. The interviewee also states that:

> "We are evolving the work we are doing for sustainability day-to-day, and we are trying to integrate it into the traditional part of the business. We are working on it through more automated and shared analytical tools that go from the cost area to the corporate ERP [Enterprise Resource Planning] system. But we are at the beginning." (C1)

Similarly, for case B, where more defined strategic and operational targets are identified in relation to the priority SDGs, the budgeting, costing and investing systems are at the early implementation phase for the holding company and all the

subsidiaries. In particular, the performance measurement system in place is built for external communication and to comply with the GRI Standard reporting (Morioka & Carvalho, 2016b). As stated by one of the sustainability specialists:

> "You will not find specific indicators related to the SDGs. But, through a customization of what are the GRI disclosure requirements, we can correlate indicators to SDGs. There is, therefore, a "custom" section in the system, which in addition to the reporting of all the data and information aimed to the GRI Standard reporting, it is also open to a whole other requirement of disclosure, collection of information that may arise from requirements related, for example, to the CDP [Carbon Disclosure Project]." (B1)

These findings show a propensity for the so-called "outside-in" approach illustrated by Maas et al. (2016b). According to the "outside-in" approach, the purpose of the internal measurement system is mainly driven by the outside pressure and the assessment requirements coming from several stakeholders, which evaluate company's impacts on environment and society (Maas et al., 2016b). Accordingly, internal measurement supports the reporting to create transparency about the company's impacts and, as so, indicators should be "based on an acknowledged and socially legitimized international standard set of indicators", such as the GRI or the CDP (Maas et al., 2016b, p. 238). However, this approach, on the one hand can lead to standardized, quantified and comparable measures between companies and over time, as well as understandable indicators for a broad range of external stakeholders, on the other hand, collecting sustainability performance data for external reporting purposes can lead to greenwashing mechanisms since companies do integrate sustainability performance data into their

sustainability report but not into their managerial decisions (Maas et al., 2016b). In the latter case, a contribution to sustainable development and creation of value for society can be very limited. Similarly, some market practices such as sustainability ratings or scorecards, as in the case of evaluation process of sustainable supply chains for case C, may also influence the content and approaches of creating sustainability-related information (Maas et al., 2016b).

Information system

The information system mainly refers to the information and technology infrastructure (i.e., IT systems) used to organize accounting and control information (Ferreira & Otley, 2009). Accordingly, the information systems pervade the entire organization and the quality of the information provided needs to be assessed according to its vulnerability to manipulation and misreporting (Ferreira & Otley, 2009).

Findings demonstrate that automatized procedures and systems are lacking since manually elaboration of accounting data prevails in relation to several SDGs-related information. Most of the companies under analysis adopt the Enterprise Resource Planning (ERP) system, which is interdependent with accounting and other control processes (Chapman, 2005b). However, only case B adopts a different platform specialized in managing sustainability information for external reporting purposes. Thus, such platform is mainly adopted to produce the annual sustainability report and the semi-annual report limited to account for

environmental impacts, which are "the most relevant issue within the holding group" (B1). In the other case, the ERP systems are supported by other conventional systems, such as lean project management tools and online platforms, in the case of the supply chain, or business intelligence systems for information related to the energy consumption and products' design and production.

In order to guarantee the reliability and quality of the information entered and managed through these different IT systems, each company owns approval mechanisms and authorisation workflows, which also guarantee the segregation of duties and information traceability. An interesting outlook is provided by the sustainable specialist of case C, which state that:

> "The breadth of the information level is semi-shared, everyone has access to the information, but only the actively involved people can change or update the data. In this way, we try to make sure that the employees have an extensive awareness of what is being done within the company" (C2).

Companies should be confident about the quality of information gathered and reported. However, the need for well-developed and reliable systems that are generally in place to provide financial information is recognized for sustainability-related information, which often assumes a non-financial nature or is limited by the logics of conventional accounting. As stated by the sustainability specialist of case B:

> "Over the years, we have always tried to make the process more automatized. However, this is complicated because you should operate, basically, there where the information originates. Often, the information is born in the world of conventional accounting, then you should create a link, a bridge directly into the process to obtain sustainable information. The holding Group is still

> working on since its main goal is to define an integrated reporting process also in response to the new requirements of the EU Non-financial Information Directive, which brings these two worlds closer together. However, I think we will not be able to concretize this process before 2023" (B2).

Accordingly, the lack of proper information systems makes challenging the evaluation and monitoring of the performance achieved in relation to sustainability issues. Companies recognize the digitalization and automatization as strategic growth driver for sustainability-related information (Beusch et al., 2022). However, the technical integration that some authors require to create methodological links between the management control system and sustainability control system, such as the presence of a common infrastructure to gather information for both systems and to enable the collection, analysis and follow-up of financial and sustainability data for performance measurement and decision-making processes (Beusch, 2020; Gond et al. 2012), seems to be far from what businesses are experiencing in practice.

Incentive system

The incentive systems represent the outcome of performance evaluation (Ferreira & Otley, 2009). Through rewards and compensations, this system focuses on motivating and increasing the performance of employees and alignment with organizational goals and activities (Malmi & Brown, 2008). Findings show that incentive systems related to SDGs performance are almost missing or indirectly linked to reward systems in place for another programme, such as the WCM. The only evidence comes from case B which adopts management by objectives (MBO)

systems in which the variable component of remuneration is related to the achievement of specific objectives. According to the sustainable report of company B (D5), the objectives are assigned annually according to a top-down approach and define two kinds of indicators: corporate indicators, which aim to ensure that performance is oriented towards the achievement of significant results at holding group/company level, with particular reference to Operating Income (EBIT) and CO2 emissions (carbon efficiency); role-related indicators, which aim to assign responsibility and to recognize the individual contribution to the achievement of company objectives. For the first year, the goal of carbon efficiency (i.e., economic value generated per unit of CO2 produced) and safety have been assigned in relation to SDGs 13 and 8, respectively, to promote the holding group's commitment to reducing climate change and to constantly increase the culture and sensitivity of employees towards these global issues.

Disclosure

Sustainability disclosure does not represent the focal dimension of this research, rather it is analysed in the perspective of the strength and coherence of the links between the elements of management accounting and control systems and the ways in which they are used (Ferreira & Otley, 2009). Furthermore, corporate reporting and disclosure provides key insights related to the main stakeholders to whom organizations are accounting for and may support organizations in planning,

implementing, measuring and communicating more effectively their SDGs efforts and commitment (Rosati & Faria, 2019a, b).

Findings demonstrate how information related to SDGs performance and sustainability performance in general, are disclosed through the company website to reach a wide range of stakeholders. However, specific disclosure is made toward targeted stakeholders by companies A and C. In the first case, sustainability reporting is mainly disclosed by the parent company on the behalf of its subsidiaries (D3), which limit their external communication with clients, by providing product information and description, or suppliers, by sending to them the sustainability policies and ethical code to which they should adhere (D1 and D2). In the second case, no sustainability report is produced yet, however, an "ethical package", which includes the code of conduct and ethics, the list of materials used in the production of products (D7), is provided by default to the supplier and certifying entities.

Additionally, in this dimension, the theme related to the stakeholders' engagement recurs for case B as a more structured management process able to improve the reporting cycle, as well as decision-making and performance. In particular, the sustainability specialist suggests that:

> "By identifying a map of stakeholders, targeting them, and asking for evidence also from the operating subsidiaries about what are the individual engagement activities that are done day-to-day, from customer surveys to customized services, to any dedicated panels on certain issues or projects, we can manage that process in a continuative way not just, let's say, spottily or when there is a need to produce the materiality matrix as a function of the external reporting" (B1).

In line with the “outside-in” approach, stakeholders' engagement plays a significant role in designing an integrated sustainability reporting and assessment approach well linked to management accounting and control systems (Maas et al., 2016). Some studies have demonstrated how sustainability reporting can offer additional benefits if stakeholders are interactively engaged with companies and how, thanks to information exchanges that are created, innovative strategic priorities and directions can be opened for companies to contribute toward sustainable development (Higgins & Coffey, 2016).

4.3 Emerging challenges and opportunities

To respond to the second research questions of this thesis, this section addresses the main opportunities and challenges that organizations have been identified in embedding SDGs into management accounting and control systems.

As far as SDGs opportunities are concerned, it is recognized that Agenda 2030 fully acknowledges the integrated and systemic nature of sustainable development issues and it delimits a set of sustainability issues in the economic, social and environmental context, by offering an integrated approach and a goal-based model (van Zanten & van Tulder, 2018). Accordingly, the research participants have highlighted, in both interviews and informal meetings, two main aspects in embedding SDGs into their management accounting and control systems.

Firstly, the implementation of SDGs at an organizational level consists of a process that involves the entire organization, as well as its extra-organisational

contexts. In this vein, case C is currently working on a few SDGs that have a cross-cutting connotation throughout the company (i.e., involvement of multiple functional areas in both strategical and operational activities). Furthermore, its supply-chain assessment process requires the involvement of several organizational functional areas, such as the procurement, distribution and commercial functions, and the partnerships with supply-chain actors to identify and monitor shared and valuable objectives for a continuous improvement of sustainable performance and impacts that go beyond the company's boundaries. As explained by one of the interviewees:

> "Improving the sustainability performance enables the supply chain to acquire additional competitive values that need to be rightly transferred to the consumer and the society through the brand in terms of trust, recognition, and distinctiveness within the market" (C1).

Besides, the theme of partnership is recurring and rhetoric within the Agenda 2030, which calls for improving collaborations not only between different actors (e.g., scientists, policymakers, etc.) but also between different organizations to build innovative networks (i.e., cross-country or cross-industry collaborations) and an inclusive supply chain, for example in favour of SMEs and local entrepreneurs (Prashantham & Birkinshaw, 2020; Scheyvens et al., 2016). Hence, SDGs may enhance corporate accountability by better meeting societal expectations and contribute to sustainable development along the entire value chain (Schönherr et al., 2017). Furthermore, corporate commitment to Agenda 2030 requires a plurality of cultural and organizational aspects to engage, both internal and external to

corporate boundaries (Vitale et al., 2019). Moving in this direction, case B is planning a more structured and extensive involvement with all its stakeholders to meet sustainability requirements, given also the multidimensional and systemic nature of SDGs.

Secondly, to enable effective measuring, monitoring and evaluating of the progress towards the achievement and implementation of the Agenda 2030, the SDGs require the production and the consumption of heterogeneous data. In particular, the multidisciplinary nature of SDGs information (biophysical, socio-economic etc.) lead organizations and, particularly, accountants to manage complex indicators (Bebbington & Unerman, 2018; Gusmão Caiado et al., 2018), often with a physical/technical nature that mainly refers to a specific operational area (e.g., Environmental and Safety, technical facilities etc.) and that do not guarantee the same rigor as financial data. In this context, companies at an infancy stage of the SDG journey, such as case A, are trying to adapt the management and control activities normally carried out within the company to the SDG-related information requirements. Evidence demonstrates also how the investigated companies recur to third-party measurement tools (e.g., GRI metrics, rating, certifications etc.) or traditional costing methods (e.g., energy and water consumption) readapted for the SDGs' measurement impacts. This process allows to systematize the information and the procedures that already exist within the organization and that need to be further reorganized. As stated by the research participants:

> "The SDGs have not yet been fully integrated. Actually, for several years a lot of activities had been carried on in the context of the WCM programme on different aspects, such as the consumption of energy, GHG emissions, and personnel safety. However, all these activities were all disconnected. There wasn't an integrated view in coordinating all these aspects, even if some aspects overlap with sustainability requirements" (A2).

> "The experience of the contribution to the parent company's sustainability report helped us to systematize things that were distributed in various organizational areas. They were there, but they were structured and thought for a different purpose than what sustainability pursues. The idea is to shift and reprogram the activities with the perspective of sustainability and achieving the SDGs' goals. We will be obligated. In the sense that at the group level this is the strategy. So, we would be held accountable for achieving certain targets. In next year's budget, we will have some targets related to that. In fact, the Sustainability Manager position was established only last year because it is expected that specific activities will have to be undertaken at a more coordinated and strategic level. […] In any case undertaking this program on sustainability, having an incipit from the parent company to organize and structure sustainability information in this way, also requires a series of activities and investments to improve corporate sustainability reporting." (A1)

The SDGs implementation in organizational practices may offer a pathway for more sustainable practices and an opportunity for a new way of thinking. As stated by Schönherr et al. (2017), "SDGs offer a real opportunity to shift the focus from what companies do (activities for sustainable development) towards what they achieve (impacts on sustainable development) through their core business and philanthropic engagement" (p. 43). However, the transition toward SDGs and more sustainability requirements demands greater investments especially in innovative accounting solutions and in training and education of the employees. Furthermore, the integration of the SDGs into existing costing tools, investment evaluation, and performance measurement can benefit from emerging sustainability tools such as

life cycle costing and the sustainability balanced scorecard (Figge et al., 2002; Chan et al., 2014), which are still not widely implemented and used as the findings of the previous paragraph have shown.

In relation to the main criticalities emerging from research evidence, organizations face several limits when considering the SDGs within their management accounting and control systems. Firstly, findings seem to confirm the difficulties in operationalizing SDGs at the corporate level occurring from the lack of understanding of the SDGs Agenda and in determining goals trade-offs (Christ & Burritt, 2019; Ike et al., 2019). During the multiple case analysis, only seven out of 17 SDGs have been covered. In some cases, some SDGs recur in more than one case study by assuming a different perspective. For example, SDG 12, which relates to responsible production and consumption, is referring to materials procurement in case A, product design and production in case C, and energy and GHG emissions - together with SDG 13 (climate action) - in case B. Similarly, the SDG 8, dealing with decent work and economic growth, is mainly addressed to working condition in the supply chain for case C and employee safety, in conjunction with SDG 3(health and wellbeing), for case B. The lack of univocal interpretation of the single SDGs could be diminishing the ethical duties conveyed by the SDG target, which can be positive (‘‘doing good’’) or negative (‘‘avoiding harm’’) (van Zanten & van Tulder, 2018) and promote greenwashing mechanisms, which can lead to an apparent and superficial engagement (Di Vaio & Varriale, 2020). Additionally,

during the second informal meeting, companies collectively recognise the need to develop a sectoral approach for implementing SDGs at a company level, which better promotes comparison and benchmarking among companies (M2).

Secondly, SDGs barriers and challenges in relation to managerial thinking and behaviour become extremely significant if considering the economic, social and environmental commitment required by Agenda 2030. In academia, several authors claim for a shift in conducting business "as usual" (Scheyvens et al., 2016) and call for a change at a more strategic level when talking about SDGs (Di Vaio & Varriale, 2020; Vitale et al., 2019). In particular, the implementation and alignment of SDGs within organizational context require a cultural change, which should stem from the top management (Avery & Hooper, 2017). This issue has been highly questioned by the sustainability specialists of case B in its role as holding group and a strong difference can be seen in relation to the case A. While in case B, there is strong coordination and guidance from the holding group towards each subsidiary on SDGs issues, the strategic and operational direction from the parent company in case A is broader and with a higher-level perspective, since it operates mainly at policy level. These results imply that in case A, long-term goals and targets are less explicit than case B, in which, conversely, cultural-organizational resistance has been observed within the subsidiaries in implementing different management accounting and control procedures. In relation to a pilot project launched to measure externalities, direct and indirect economic impacts (e.g., new jobs, economic value

for the local community, emission reductions) in a more structured way that would allow these analyses to be replicated for all types of sustainable initiatives, the sustainability specialist of company B explains that:

> "I won't hide from you that it has been a complex project because it also required a paradigm shift in people who have always understood investments as a simple economic-financial analysis, which do not always take into account what, instead, are the real impacts on the territory, whether positive or negative. So, a guideline that we hope to finalize this year is to have an assessment system that considers the SDGs perspective, to meet also what are the new regulatory compliance, such as Regulation 852/20. With these guidelines, we would like to cover the area of performance measurement systems and investment systems. On the one hand, to have the possibility to quantify the cost in ESG terms of a project, and then also related to the SDGs, because we will have to somehow communicate it maybe in a better way and to concretizes what is the positive or negative impacts of the Group on sustainability issues. The idea is to take this project forward, however involving so many heads is not easy." (B1)

Furthermore, a research participant adds that:

> "The difficulty is also that the Group often thinks with a bottom-up approach, especially for the investment area, so we clearly can make guidelines and give directions to the subsidiaries, but then the real paradigm shift must happen within the organization of the individual company. This is why, in parallel with the definition of these tools and guidelines, we are working on a change management process to give tools also at the organizational level that allow the Group to ground all the sustainability projects and initiatives at the operational level. It is a project that is also quite complex because each subsidiary is organized differently. In some cases, for example, the sustainability functional area is in the Directional and Strategic area, as in the holding company, in other entities it is found in the Human Resources Department. We will have the real shift when this link between sustainability and business is not only at the operational level but also at the strategic level. […] So, a transition from the simple world of sustainable reporting, because all the organizations started then from reporting to a world where sustainability is integrated within business strategies is necessary." (B1)

SDGs commitment requires new forms of accounts and governance structure, as well as transformative actions and strategies that go beyond mere compliance to regulatory requirements and external reporting perspective. Firms are called to activate organizational change to meet SDGs requirements (Di Vaio & Varriale, 2020), as well as to increase awareness within organizations and improve environmental and social knowledge to be included and translated into managerial and employees' skills (Adams, 2017).

Finally, despite the different experience levels in the sustainability journey, findings demonstrate a general lack of ad-hoc measurement systems related to the SDGs. The results show a greater difficulty for companies in determining adequate costing tools and investment evaluation systems that can quantify the positive and negative externalities of the actions and projects undertaken in the direction of contributing to sustainable development. Furthermore, companies highlight their difficulty in determining direct and indirect impact metrics that can link corporate goals with SDG targets (M2). The relevance of measuring SDGs in terms of impacts and the need to consider potential trade-offs between SDGs has been emphasized in the literature (Laine et al., 2020). However, SDGs targets and indicators are often linked to broader sustainability goals and issues (from more societal goals - i.e., poverty, education etc. – to environmental and economic goals – i.e., pollution, urbanization etc.), which need to be contextualized at the managerial level (Schaltegger et al. 2017). Hence, such difficulty emanates from the macro-level

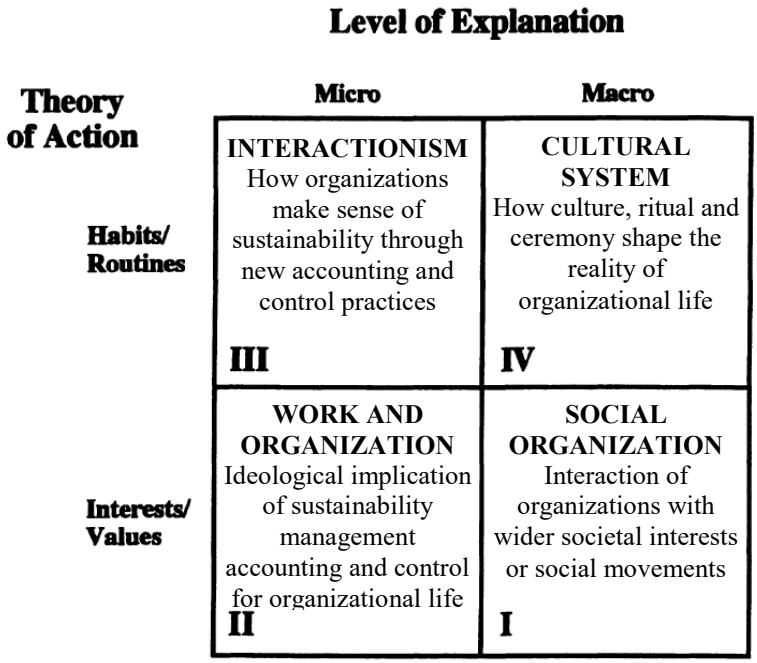
perspective adopted by Agenda 2030, which requires a conceptual and pragmatic effort for its translation into micro-level metrics. The macro-level and top-down approach of Agenda 2030 in designing SDGs goals and targets has been widely criticized in management accounting literature since they are primarily addressed to governments and Nations (Sullivan et al., 2018). Some authors consider this approach as an enabler of a challenging, universal and holistic framework for businesses in contributing to sustainable development (Lu et al., 2019); while others questioned the prevailing "neoliberalism" role of business in addressing SDGs, since the same UN Agenda lacks attention and actions in addressing structural causes of current social, economic and environmental issues, requiring a structural change at a global level (Scheyvens et al., 2016).

4.4 Discussion of the main findings through the lens of institutional theory

As discussed in the previous chapter, institutional theory can offer interesting insights for understanding an organization's accounting responses to sustainability issues and social expectations (Ball & Craig, 2010). Companies are pressured by internal and external factors to improve their corporate performance concerning their global sustainable development responsibilities (Morioka & Carvalho, 2016a). In this section, the main findings are discussed and read through the four institutional research perspectives developed by Lounsbury (1997) and adopted by Ball & Craig (2010) in developing explanations of change in the context of social

and environmental accounting. Specifically, the four approaches (or quadrants as called by the Author), namely social organization, work and organization, interactionism and cultural systems (figure 4.1), offer different lenses to examine how organizations embed SDGs, as means of the last edge of sustainable development and sustainability global issues, and which levers and barriers they face when implementing them into management accounting and control systems.

Figure 4.17 - The Institutional tool kit for management accounting and control for sustainability



Source: Elaboration from Lounsbury (1997, p.467) and Ball & Craig (2010)

4.4.1 Social organization

The first quadrant “social organization” sheds lights on the interaction of organizations with wider societal interest and values. The macro lens suggests that the debate about sustainability issues arise from macro-social factors, which shape organizational commitment to take advantage of the environment and to further their own interests and those of the society (Ball & Craig, 2010; Brint & Karabel, 1991). In line with other studies (Maas et al., 2016a; 2016b; Schaltegger et al., 2006), which stressed how sustainability assessment and reporting is strongly influenced and driven by societal expectations, reporting requirements, and standards, the investigated companies demonstrate how some current practices are reflected in response to macro-social factors concerning sustainability agenda. External context factors could be represented by society and environment pressure (Morioka & Carvalho, 2016a; Kolk and Mauser, 2002) or industry specific competitive dynamics (Morioka & Carvalho, 2016a; Grosvold et al., 2014).

The first factor is predominant in case B where SDGs implementation and contribution are mainly driven by stakeholder pressure, which evaluate company's impacts on environment and society (Maas et al., 2016b). Stakeholders can exert relevant pressure on firm behaviour (Vitale et al., 2019) since business decisions are proposed to be taken in order to satisfy their needs, inform them about firms' performance using reports and other communication instruments, and integrate them in making relevant decisions (Morioka & Carvalho, 2016a), such as defining

long-term strategies. Through a stakeholder engagement process, Case B demonstrates to understand and integrate the needs and interests of the various stakeholders by adopting management accounting and control systems to supports external reporting and to create transparency about the company's impacts on sustainability global issues (Maas et al., 2016b). In line with Wijethlake et al. (2017), in case of company B. Management accounting and control systems represent a strategic response to institutional pressures for sustainability since the various systems or "packages" are used to specifying and communicating their sustainability objectives and plan both externally and internally (within the entire group) and to measure and control corporate sustainability performance by considering stakeholder' demands and expectations. A further company's response to such institutional pressure is by motivating employees to accomplish sustainability goals through MBO systems (Wijethlake et al., 2017). Accordingly, the integration of sustainability with existing management accounting and control systems can be connected to the "compliance-driven sustainability strategy" configuration described by Gond et al. (2012) that is often observed during early stages of sustainability integration. According to this configuration, the sustainability control systems is used as "management by exception tool to detect a big issue and to demonstrate (e.g., through disclosure of sustainability performance information in annual report) that organization has everything under control" (Gond et al., 2012, p. 212). In this context, sustainability issues are managed through a

system that operates parallel to the dominant management accounting and control systems and the level of technical, organizational and cultural integration can be very low (Gond et al., 2012). This is also demonstrated by the fact that company B, as discussed in the information system dimension, adopts a different platform specialized in managing sustainability information for external reporting purposes and data collection is mostly decentralized toward the subsidiaries, highlighting the multidisciplinary challenge of issues concerning to sustainability.

The second external factor, related to industry specific competitive dynamics, is mainly addressed in company A and C through the adoption of international certifications and programmes widely recognized and accepted, such as the World Class Manufacturing (WCM) programme or the Global Organic Textile Standards, which highlight the power of the normative isomorphism (Corsi & Arru, 2020; Di Maggio & Powell, 1983). Similarly, the adoption of GRI standard by company B evokes normative mechanisms since it is based on acknowledged and socially legitimized international standard (Corsi & Arru, 2020). Normative isomorphism strongly shapes both values (i.e., desirable way of being and acting) and norms (i.e., how things should be done), thus leading organizations in adopting good business practices and reflecting the presence of mimetic institutions (Scott, 2004; Bebbington et al., 2008). The interplay between normative and mimetic institutions supports companies in sustainability strategy development and deployment of existing performance measurement systems since organizations tend to imitate the

best processes and practices to improve organizational performance (Corsi & Arru, 2020; Bebbington et al., 2008). As a result, the integration of sustainability into management accounting and control systems in the examinate cases follows two streams. The first relates to the integration at a higher level of the strategy, thus affecting the beliefs or cultural systems (Beusch et al., 2022; Malmi & Brown, 2008; Simons, 1995), as for case A, which implements the most strategic SDGs into corporate policies and Code of Conducts. The second relates to the integration mainly driven by market pressures, in terms of competitors' practices and customers' expectations, widely felt in company C, which expressed the need for a sustainability alignment with best practices and competitors' performance in the fashion industry and constantly considers industry benchmarks in the process of performance evaluation of its supply chain. In addition, in line with the study conducted by Bebbington et al. (2008), for both companies, some inconsistencies exist since sustainability disclosure is not seen as the major component of their sustainability activities, despite they experienced some supply-pressure and acknowledged some impacts associated with their operations and industry.

However, when referring to the initiation of organizational activity, such as the implementation of SDGs into management accounting and control systems, "organizations dynamics appear to influence the extent to which institutions are perceived as legitimate and come to shape managerial decision-making"

(Bebbington et al., 2008, p. 613), thus elements from a micro level of explanations should be considered.

4.4.2 Work and organization

The second quadrant "work and organization" provides a more local perspective of institutionalism process within organizations and it mainly focuses on the ideological thrust and interests or organizational practices for sustainability issues (Ball & Craig, 2010; Lounsbury, 1997). A common element for interpreting the results of the multiple case in light of this institutional perspective concerns the role played by the sustainability function within each organization, since it is where sustainability activities are "localized" inside organizations (Ball & Craig, 2010). Findings demonstrate how the sustainability function acts as a collector of the sustainability information coming from the operational functions and it diffuses such information within the entire organization. However, the sustainability function or the sustainability managers have different influences on organizational responses to a social and environmental agenda compared to conventional accountants (Ball & Craig, 2010: Larrinaga & Bebbington, 2001). In the case of company A, the absence of the sustainability function is replaced by a strong commitment of the Finance and Administration function, as well as of Operations functional area towards sustainability issues. In addition, the Finance and Administration function strictly collaborates, through information flows and systems, with the sustainability function of the parent-company, which support its

subsidiaries in several sustainability activities, from the definition and guidance of strategic SDGs to the external reporting and disclosure. Despite the transition toward SDGs and more sustainability requirements demand greater investments, especially in innovative accounting solutions and in training and education, the activities undertaken for the parent company allow company A to systematize the information and the procedures that already exists within organization. Furthermore, the company has the opportunity to move forward to meet sustainability requirements by starting to implement new processes that offer a pathway for more sustainable practices, such as the plan to nominate a sustainability manager within the Finance and Administration function.

Conversely, company B evidences many conflicts in developing the SDGs alignment in the existing management accounting and control systems for two main reasons. First, each subsidiary is organized differently and the sustainability function is not always collocated in the directional and strategic corporate area, thus covering a secondary role in the organizational priorities and activities. Second, difficulties in operationalizing SDGs at the corporate level occur due to the lack of technical integration and automatized information systems, which makes challenging the evaluation and monitoring of the performance achieved in relation to sustainability initiatives and to reach the same information quality and reliability of the conventional accounting system. These results are in line with the perspective offered by the second quadrant of Lounsbury's framework (1997), which looks at

the interest at stake in conflicts over the definition and organization of practices at the local work level.

The emphasis on struggles over values and meaning at the micro-level helps to develop a normative outlook on sustainability accounting and to ask how ideological interests work within organizations or to what extent companies exert pressure for change (Ball & Craig, 2010). An interesting result comes from case C, which confirms how sustainability requires a continuous and constant process that needs to be managed daily alongside traditional managerial practices, business tools and functions (Vitale et al., 2019). In its journey toward sustainability, the company devotes a great effort to the emerging function "Sustainability and Intangibles", which covers a central role by interacting and networking with all the functions within the organization. Hence, company C recognizes not only the relevance of having a sustainabiliity department, but also the unique expertise that this specific department covers and that supports the development of the necessary know-how for integrating sustainability in corporate strategic and operational planning (Ruhnke & Gabriel, 2013) and for pursue sustainable performance (Eccles et al., 2014; Corsi & Arru, 2020). The sustainability actions of the company are potentiated by the creation of a cross-functional team to obtain a more comprehensive and holistic overview for both strategic and operational decisions in the context of sustainability supply chain management. In the same way, the implementation of SDGs at an organizational level consists of a process that

involves not only the extra-organisational contexts, as explained under the perspective of the first quadrant, but the entire organization. This suggests an increase of awareness that sustainability is no longer the exclusive responsibility of the environmental, health and safety departments of the firm, rather it is embedded in all other functions involved in the product life cycle (Morioka & Carvalho, 2016a). The life cycle approach takes into consideration the institutional responsibility of an organization from the beginning of life to the end of life of a product and it offers an interesting approach for managing sustainability performance since it seeks to minimize the negative impacts of a company on society and natural environment, but also to identify more comprehensive and sustainable business models (Morioka & Carvalho, 2016a; Balkau and Sonnemann, 2010).

4.4.3 Interactionism

The third quadrant "interactionism" focuses on how institutions are built up microprocessually and become taken for granted (Lounsbury, 1997). In light of this perspective, organizations become significant sources of institutionalization of new actions and practices, including social corporate reporting (Ball & Craig, 2010). Furthermore, this perspective allows explaining the extent to which sustainability accounting is employed and developed, as well as the extent to which they are taken for granted and merely ceremonial (Ball & Craig, 2010).

Findings highlight the lack of implementation of new and innovative sustainability-oriented management accounting and control tools, thus leading organizations to derive and readapt information and data related to SDGs performance from conventional and institutionalized management and control tools. In this context, companies are at an infancy stage of the SDGs journey and, as so, they are trying to adapt the management and control activities normally carried out within the company to meet SDGs-related information requirements. These findings are supported by the evidence that investigated companies recur to third-party measurement tools (e.g., GRI metrics, ratings, scorecards, certifications etc.) or traditional costing methods (e.g., energy and water consumption) to measure and monitor their SDGs' impacts and contribution. Both coercive and normative pressures require organizations to collect several data and information on sustainability issues to comply with specific regulations or to obtain international certification and programmes. These mechanisms lead companies to adopt taken-for-granted and conventional practices considering the trade-off between readily available data that are originally framed for other purposes and the data ideally suited for calculating performance against the SDGs' performance (Bebbington & Unerman, 2020; Sobkowiak et al., 2020).

According to Morioka & Carvalho (2016a), the integration of sustainability performance into business should take into account the sustainability business elements, which can be considered important sources of institutionalization and are

identified in processes and practices (i.e., production and supply chain management), capabilities (i.e. human resources, financial resources, technology, performance measurement systems etc.), offerings (i.e. products and services) and contribution to sustainable development (i.e. short, medium and long term impacts).

Process and practices can contribute to sustainability performance when conducted according to the principles for corporate sustainability (Morioka & Carvalho, 2016a). For example, in company C, sustainability process and practices are mainly associated with sustainable supply chain management, which involves the entire organization and it includes the construction of valuable partnerships with supply-chain actors to identify and monitor shared objectives and practices (e.g. joint planning and sustainability goal definition, green purchasing) for a continuous improvement of sustainable performance and impacts that go beyond the company's boundaries.

In relation to the capabilities to pursue corporate sustainability, findings outline how the transition toward SDGs demands greater investments especially in innovative accounting solutions and in training and education. In line with other studies (Busco et al., 2019), a switching behaviour characterized by routine and imitation of industry leaders requires at least a "one-off" investment, through which, once a company achieves the level of integration desired, it mostly tends to remain stable (Di Maggio & Powell, 1983). Instead, human capabilities depend on whether the firm's leadership can deploy changes in organizational culture to

integrate sustainability into business (Morioka & Carvalho, 2016a). In this context, cultural and organizational resistance has been observed in case B from its subsidiaries in implementing different management accounting and control procedures. Compared to the parent company of case A, company B demonstrate a strong strategic and operational direction and coordination for the entire group in relation to sustainability initiatives, thus facing several challenges in relation to managerial thinking and behaviour. As far as it concerns technology and cybernetic dimension of management accounting and control systems (Malmi & Brown, 2008), IT systems and corporate performance measurement systems are also important capabilities for promoting integration between business and corporate sustainability (Morioka & Carvalho, 2016a). Sustainable development challenges demand a development of ad-hoc sustainable technologies and measurement systems that are lacking in the companies under investigation. Several authors (among others Vitale et al., 2019; Battaglia et al., 2016; Crutzen et al., 2016) promote the adoption of emerging sustainability tools, such as life cycle costing and the sustainability balanced scorecard, from which the integration of the SDGs into existing performance measurement systems can benefit. However, these emerging tools and widely discussed in the literature are still not implemented and used by all the three companies under investigation.

The other sustainable business element proposed by Morioka & Carvalho (2016a) is represented by the firm's offering, including products and services. All

the companies under analysis demonstrate to integrate sustainability features into their products/services, thus promoting business towards innovative and more sustainable products and services. The choice to contribute to SDG 12, which relates to responsible production and consumption, can be read from this perspective. In particular, cases A and C mainly integrate sustainability elements in relation to recycled and sustainable materials for packaging and product design, whereas Case B is committed to reducing energy and GHG emissions, as well as it aims to offer more sustainable services by increasing and promoting more sustainable mobility in the long-term period.

Finally, the contribution of the other elements to global sustainable development and, at the same time, to corporate competitive advantage, represents the effort to promote sustainable value towards societal well-being and environmental conservation, considering short, medium and long-term impacts (Morioka & Carvalho, 2016a). In this regard, a key role is played by the disclosure dimension through which organizations can make sense of sustainability together with new services or product offerings (Ball & Craig, 2010). Sustainability reporting plays an important role in influencing the perception of corporate sustainability performance and it is adopted as a channel to gain legitimacy (Morioka & Carvalho, 2016a). Bebbington et al. (2008) demonstrated how choosing to engage in sustainability reporting appears not to be a rational choice, but rather is driven by a cognitive mechanism if considering an institutional

perspective. Accordingly, the early development of external sustainability reporting in company A and C results initiated because it has come to be an accepted part of pursuing a differentiation strategy, it offers some contribution to existing business challenges and it is widely recognized the rewards it offers (Bebbington et al., 2008). Conversely, for company B where external sustainability disclosure is a consolidated praxis, in line with Morioka & Carvalho (2016a), findings demonstrate how sustainability reporting affects how management accounting and control practices are conducted and how sustainability performance is related to SDGs is measured.

4.4.4 Cultural System

The fourth quadrant "cultural system" draws attention to the macro level explanation of how action is prompted by habits and routine, and it is useful to analyse the temporal dimension of sustainability management practices based on political-cultural distinctions (Lounsbury, 1997). According to Ball & Craig (2010), this perspective focuses on ritual, culture and ceremony and higher-level framework that shape the reality of organizations. In particular, it is recognized the role of the State as central to the legitimation process since sustainability practices or initiatives are likely to be adopted if they are perceived to be supported by government policy (Ball & Craig, 2010).

In theorizing the findings under this dimension, the dissolution of boundaries between this quadrant and the first one (i.e., social organization) can be argued, as

suggested by Lounsbury (2007) when explaining the institutional tool kit framework. In particular, in relation to the main results of this thesis, the "cultural system" dimension provides a useful analytical distinction based on the macro level of explanations, which can be mainly addressed to the external context factor represented by legislation (Morioka & Carvalho, 2016a; Tan et al., 2014).

This factor is predominant in case B where SDGs implementation and contribution are mainly driven by regulatory pressure (i.e., coercive isomorphism according to Di Maggio & Powell (1983)) coming from the need for compliance to European Taxonomy (Regulation UE 852/2020), the adherence to the National Recovery and Resilience Plans (PNRR) or the EU Non-financial Information Directive for external reporting. As for the society and environment pressure discussed for the first quadrant, company B expresses its commitment to sustainable development by defining new strategies, such as the three long-term goals for 2030-2050, and by adopting a sustainability performance measurement, management and reporting approach in line with the "outside-in" approach, according to which the purpose of the internal measurement system is mainly driven by the outside pressure and by the transparency perspective (Corsi & Arru, 2020; Maas et al., 2016b). Furthermore, these findings point towards once again the concept of isomorphism, according to which organizations experience pressures that lead them to adopt rules and structures to enhance legitimacy (de Villiers & Alexander, 2014; DiMaggio & Powell, 1983). In particular, SDGs' integration seems to be a

manifestation of the corporate culture and is based on what a firm has done in the past in relation to other sustainability initiatives (i.e., routine), as well as on what other firms do, especially in the same industry (i.e., imitation). Thus, organizations become isomorphic and tend to adopt similar rules and structures to companies that demonstrate a visible and authentic commitment to sustainability for the success of the company (Busco et al., 2019; de Villiers & Alexander, 2014). Furthermore, in line with the research conducted by Corsi & Arru (2020), informal controls result to be stronger in the presence of cognitive pressures to meet society expectation than regulative ones, which in case of company B, shape the more formal control related, for example, to investment evaluation systems and the performance measurement to comply with the EU Taxonomy and the Non-financial Information Directive, respectively.

CONCLUSIONS

Over the past decade, the focus of academia has broadened to explore management accounting and control systems for sustainable business practices (Ghosh et al., 2019). Despite the extensive knowledge on management accounting and control systems, which developed into a wider and more holistic approach that includes a broad range of managerial activities, from the (e.g., strategy processes, operational activities etc.) as proposed by Ferreira & Otley's framework (2009), organizations are called for a more accountable behaviour and greater attention in facing environmental and social issues at managerial level (Traxler et al., 2020; Vitale et al., 2019).

With the launch of Agenda 2030 for Sustainable Development, it is recognized the crucial role that organizations, through their managerial practices and commitment, can play in making sustainable business purposes and strategies operational (Vitale et al., 2019). In particular, through the 17 SDGs emanated with the UN Agenda 2030 corporate sustainability has been strengthened due to their ability to cover a wide range of economic, social and environmental objectives alongside the priorities linked to wicked problems, such as poverty, health and education (Corsi & Arru, 2020; United Nations, 2015). However, management accounting and control for sustainability requires well-designed and integrated systems able to deal with all sustainability information needs to be required for internal decision-making (Beusch, 2020; Maas et al. 2016b) and appropriate

systems for assessing corporate sustainability performance in achieving the SDGs are required (Bebbington & Unerman 2018; 2020; Sobkowiak et al., 2020; Vitale et al., 2019). This body of research is at an early stage of development and calls for further inquiries on more empirical research on the complex and dynamic relationship between management control systems and the SDGs, as an expression of sustainable development requirements.

As illustrated in the first chapter, in order to fill these gaps and to address the call for studies on management accounting and control systems for sustainability and on the last edge of sustainable development, the SDGs, this thesis examines the following research questions:

R1 - How are SDGs embedded into management accounting and control systems in organizations?

R2 - Which levers and barriers do companies need to consider when implementing SDGs into management accounting and control systems?

To answer these research questions and to enlighten the organizational dynamics in adopting management accounting and control systems when integrating global sustainability issues, such as those promoted by the SDGs, a neo-institutional approach has been used as a useful analytical lens for interpreting the empirical evidence derived from the multiple case study. In particular, the main findings are discussed and read through the four institutional research perspectives

developed by Lounsbury (1997) and adopted by Ball & Craig (2010) in the context of social and environmental accounting.

Findings demonstrate how current practices are adopted in response to macro-social factors concerning the sustainability agenda. Specifically, societal expectations, stakeholders and industry pressures, as well as legislative requirements drive the process of defining sustainability-oriented strategies and institutionalising sustainability practices to comply with international certifications and standards. In this context, sustainability issues, most of which are in line with the macro themes tackled by the SDGs agenda, are managed through a system that operates parallel to the dominant management accounting and control systems and the level of technical, organizational and cultural integration can be very low (Gond et al., 2012). Furthermore, organizations seem to be moved by normative mechanisms, which strongly shape both values (i.e., desirable way of being and acting) and norms (i.e., how things should be done), thus leading organizations in adopting good business practices and imitating the best processes and practices to improve organizational performance (Corsi & Arru, 2020; Bebbington et al., 2008). Hence, the interplay between normative and mimetic institutions supports companies in sustainability strategy development and deployment of existing performance measurement systems.

From a micro level of explanations, sustainability activities are localized and faced within the sustainability function, which acts as a collector of the

sustainability information coming from the operational functions and it diffuses such information within the entire organization in a systematic manner. However, the sustainability function in each organization implies different influences on organizational responses to a social and environmental agenda and different levels of interacting and networking with all the functions within the organization. Despite the different stages of progress of each company in the sustainability journey and the organizational culture directed to address sustainability issues in an integrated way, rather than as an "add-on" of traditional research and approaches (Bebbington & Unerman, 2020), results confirm how sustainability requires a continuous and constant process that needs to be managed daily alongside traditional managerial practices, business tools and functions (Vitale et al., 2019).

In addition, the lack of new and innovative sustainability-oriented management accounting and control tools leads companies to adopt taken-for-granted and conventional practices. To meet SDGs-related information requirements, companies recur to third-party measurement tools or traditional costing methods considering the trade-off between readily available data that are originally framed for other purposes and the data ideally suited for calculating performance against the SDGs' performance (Bebbington & Unerman, 2020; Sobkowiak et al., 2020).

Other sustainability business elements can be considered important sources of institutionalization and are identified in processes and practices according to the principles for corporate sustainability, for example, the production and the supply

chain management, capabilities, in terms of human and financial resources and technology, offerings (i.e., products and services) and contribution to sustainable development, in terms of short, medium and long term impacts. Among other aspects, findings demonstrate how the transition toward SDGs demands greater investments especially in innovative accounting solutions and in training and education of employees to increase the awareness of sustainability issues and to face several challenges in relation to managerial thinking and behaviour.

Finally, sustainability reporting plays an important role in influencing the perception of corporate sustainability performance, together with new services or product offerings, and it is adopted as a channel to gain legitimacy. Companies demonstrated to have a stronger external perspective to sustainability in line with the outside-in approach outlined by Maas et al. (2016b).

All in all, the use of a qualitative method, such as the multiple case study has permitted to obtain rich and meaningful findings which can be compared with extant literature in order to refine, challenge or advance the knowledge on a specific topic (Yin, 2018). By combining the empirical evidence of the multiple case study with the theoretical insights from a neo-institutional perspective of organizations, this thesis permits to offer multiple contributions to literature.

First, the findings of this thesis contribute to prior literature concerning management accounting and control for sustainability by providing a comprehensive view on how organizations adapt different types of accounting and

controls systems simultaneously – from strategic to operational processes - when they integrate sustainability elements in existing organizational practices.

Second, findings contribute to accounting research by answering the calls for developing knowledge that progresses sustainable development (Adams & Larrinaga, 2019; Bebbington et al., 2017; Bebbington & Larrinaga, 2014), as well as by providing initial evidence on how the companies are integrating some aspects of the SDGs into their management accounting and control systems, thus covering the all three dimensions of sustainable development (Bebbington & Unerman, 2020; 2018; Sobkowiak et al., 2020; PwC, 2019; Scheyvens et al., 2016).

The thesis also offers practical contributions. By highlighting the opportunities and the limits of SDGs implementation more in detail, findings provide food for thought for companies engaged in integrating the SDGs into management accounting and control systems, consequently measuring and monitoring the outcomes and the impacts of sustainability policies and practices. Furthermore, this thesis provides evidence that can guide both top/middle managers and the members of the accounting and sustainable department in the development of a fruitful relationship between management accounting and control and sustainable development. The evidence of the study also indicates how organisational actors can use and adapt existing management accounting and control practices and processes to meet sustainable development requirements and to direct decision-making and strategic processes for sustainability issues.

In addition, from a practical perspective, the findings from this study suggest that companies are not all the same in their SDGs journey, indeed they can be substantially different, and these differences need to be carefully considered across management accounting and control systems and integration with sustainability performance (Busco et al., 2019).

While the thesis has highlighted the significance of management accounting and control tools and practices for sustainability and it has brought to the fore some complexities and opportunities of SDGs integration, some limitations need to be acknowledged. A limitation regards the main point of view from which the topic of the thesis is investigated. Most of the interviews were conducted with the members of the sustainability functions. Therefore, the point of view of top managers involved in other departments affected by sustainability issues or further business functions is not considered. However, the attention was voluntarily focused on sustainability actors and documents to better understand how the most recent evolution in the sustainability accounting field affected management accounting and control systems. Furthermore, this research is exploratory and focuses on the SDGs agenda as an expression of key sustainability issues that the company are facing nowadays.

Besides, the sample includes three Italian companies with different size and operating in different sectors. Other companies, equally interested in sustainability issues, may have different structures, procedures and capacities leading to a

different design and use of management accounting and control systems, as well as different feeling of institutional pressure toward sustainability. The choice of the sample was driven by the aim to provide a snapshot of how companies are integrating SDGs and how they are considering their impacts and outcomes. Hence, the results, with the necessary adaptations, can provide some baselines to other organizations. For example, while cases A and B provide some interesting insights from a subsidiary and a holding group perspective, respectively, case C mainly focuses its analysis on the management accounting and control systems adopted to monitor and assess its supply chain.

From the Gond et al. (2012) seminal work, management accounting and control for sustainability is gaining momentum and there is clearly room for further studies in this area. Future research could explore the interplay between accounting, control and reporting also in light of the introduction of new norms and requirement (i.e., EU Directive 2014/95, European Taxonomy etc.) and the future institutional pressure that will derive from increasing attention to global issues and risks. Future research could provide empirical evidence on planning systems that, together the implementation of sustainable performance measurement tools and the reward and compensation systems, seem to be an under investigated area. Furthermore, it could be worthwhile to extend the study to other companies which have been implement SDGs using different practices and procedures and to enrich the analysis of the levers and barriers to the achievement of SDG at an entity-level.

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APPENDIX 1

Summary of study selected for conducting the systematic literature review

Author	Title	Journal	Year
Asiaei, K., Bontis, N., Barani, O., Moghaddam, M., Sidhu, J.	The role of sustainability control systems in translating CSR into performance in Iran	Management Decision	2022
Cavicchi, C., Vagnoni, E	The role of performance measurement in assessing the contribution of circular economy to the sustainability of a wine value chain	British Food Journal	2022
Beusch, P., Frisk, J.E., Rosén, M., Dilla, W.	Management control for sustainability: Towards integrated systems	Management Accounting Research	2022
Mio, C., Costantini, A., Panfilo, S.	Performance measurement tools for sustainable business: A systematic literature review on the sustainability balanced scorecard use	Corporate Social Responsibility and Environmental Management	2022
Khalid, S.K., Beattie, C., Sands, J.S.	Barriers and Motivations to Integrating Environmental Performance in the BSC: a case study in health care	Sustainability Accounting, Management and Policy Journal	2022
Zharfpeykan, R., Akroyd, C.	Factors influencing the integration of sustainability indicators into a company's performance management system	Journal of Cleaner Production	2022
Slacik, J., Grüb, B., Greiling, D.	New wine in old bottles: governing logics for applying sustainability management control systems in Austrian electric utilities	International Journal of Energy Sector Management	2022
Cavicchi, C., Oppi, C., Vagnoni, E.	Mobilising management control systems to support sustainability strategy in SMEs: the case of a waste disposal firm	Meditari Accountancy Research	2022
Hristov, I., Appolloni, A., Chirico, A.	The adoption of the key performance indicators to integrate sustainability in the business strategy: A novel five-dimensional framework	Business Strategy and the Environment	2022

Tuan, V.K., Rajagopal, P.	The mediating effect of the budget process on the performance of small-and medium-sized enterprises in Ho Chi Minh City, Vietnam	Journal of Entrepreneurship, Management and Innovation	2022
Gunarathne, N., Lee, K. H., Hitigala Kaluarachchilage, P.K.	Tackling the integration challenge between environmental strategy and environmental management accounting	Accounting, Auditing and Accountability Journal	2022
Kühnen, M., Silva, S., Hahn, R.	From negative to positive sustainability performance measurement and assessment? A qualitative inquiry drawing on framing effects theory	Business Strategy and the Environment	2022
Mengistu, A.T., Panizzolo, R.	Tailoring sustainability indicators to small and medium enterprises for measuring industrial sustainability performance	Measuring Business Excellence	2022
Schaltegger, S., Christ, K.L., Wenzig, J., Burritt, R.L.	Corporate sustainability management accounting and multi-level links for sustainability – A systematic review	International Journal of Management Reviews	2022
Asiaei, K., Bontis, N., Alizadeh, R., Yaghoubi, M.	Green intellectual capital and environmental management accounting: Natural resource orchestration in favor of environmental performance	Business Strategy and the Environment	2022
Frost, G., Rooney, J.	Considerations of sustainability in capital budgeting decision-making	Journal of Cleaner Production	2021
Gunarathne, N., Lee, K.-H.	Corporate cleaner production strategy development and environmental management accounting: A contingency theory perspective	Journal of Cleaner Production	2021
Feder, M., Weißenberger, B.E.	Towards a holistic view of CSR-related management control systems in German companies: Determinants and corporate performance effects	Journal of Cleaner Production	2021
Hristov, I., Appolloni, A., Chirico, A., Cheng, W.	The role of the environmental dimension in the performance management system: A systematic review and conceptual framework	Journal of Cleaner Production	2021

Tuori, M.A., Rois, R.S.R., Martowidjojo, Y.A.N., Pasang, H.	Formulating a Sustainability Balanced Scorecard (Sbsc) For a Leading Integrated Palm Oil Based Consumer Products Public Company in Indonesia	Journal of Management Information and Decision Sciences	2021
Asiaei, K., Bontis, N., Barani, O., Jusoh, R.	Corporate social responsibility and sustainability performance measurement systems: implications for organizational performance	Journal of Management Control	2021
Gunarathne, A.D.N., Lee, K.H., Hitigala Kaluarachchilage, P.K.	Institutional pressures, environmental management strategy, and organizational performance: The role of environmental management accounting	Business Strategy and the Environment	2021
Chaker, F., Bonsu, S.K., El Ghaib, M.K., Vazquez-Brust, D.	Isn't it time we transitioned to integrated sustainability? De-codifying the hard-soft divide from a systems-theoretic perspective	Sustainability Accounting, Management and Policy Journal	2021
Sahu, A.K., Padhy, R.K., Das, D., Gautam, A.	Improving financial and environmental performance through MFCA: A SME case study	Journal of Cleaner Production	2021
Al-Shaabaney, S.I.Y.	Causality of developing a balanced scorecard under sustainable development: an applied study	International Journal of Accounting, Auditing and Performance Evaluation	2021
Hristov, I., Appolloni, A.	Stakeholders' engagement in the business strategy as a key driver to increase companies' performance: Evidence from managerial and stakeholders' practices	Business Strategy and the Environment	2021
Aminaimu, Z., Fernando, Y.	Psychometric instrument development of the sustainable balanced scorecard for the success of a new product development	International Journal of Productivity and Quality Management	2021
Jusoh, R., Yahya, Y., Zainuddin, S., Asiaei, K.	Translating sustainability strategies into performance: does sustainability performance management matter?	Meditari Accountancy Research	2021
Tipu, S.A.A.	Organizational change for environmental, social, and	Review of Managerial Science	2021

	financial sustainability: A systematic literature review		
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APPENDIX 2

Questions for conducting semi-structured interviews

Information flow

This section is cross-cutting the other themes and it aims to understand who the actors are involved in the production and consumption of SDGs-related information

- Who produces the information? Role or function involved in the production or calculation of the SDGs-related information.
- Who disseminates the information within the organization? Role or function that is responsible for disseminating the SDGs-related information in the organization.
- Who are the internal audience of the information? Role or function that uses the SDGs-related information.

Strategy

This section aims to understand the pervasiveness of the SDGs in strategy formulation.

- In strategy formulation, are the SDGs explicitly mentioned (or at least is the theme to which it relates) and does the company expressly aim for their achievement?
- Goal setting and target KPIs at the strategic level: are the SDGs declined into one or more goals with related indicators and targets?
- Strategy analysis and evaluation tools: has the formulation of the strategy, with reference to the SDGs, been supported by analytical tools (e.g., SWOT or other) and also by tools that aim to evaluate the impact at the strategic level?

Performance Measurement

This section aims to understand what kind of information are usually produced for the performance measurement and what kind of performance measurement tools are adopted (both traditional and more evolved tools) with reference to the SDGs.

- Definition of objectives and KPIs at the operational level: are the SDGs declined into one or more objectives with indicators and targets at the operational level (referring to individual activities, functions, etc.?). If so, in which tool are they included?
- Budgeting and MBO systems: are there explicitly targets related to the SDG in budgeting system (with related resources, indicators and targets)?
- Variance analysis at the operational level: are any deviations and their causes analysed with reference to the established targets and KPI?
- Costing analysis and tools: are costing techniques adopted (e.g., LCC or LCA) that take into account costs typically referable to certain SDGs?
- Investment evaluation systems: has the decision to invest in the implementation of a certain SDGs been supported by an analysis of the investments these implies?
- Performance measurement tools: in the context of performance measurement tools (e.g., BSC), what are the role and relevance of SDG-related indicators and targets within the tool (e.g., from what perspective of the BSC?)
- Tools and levels/function of reporting: Is the information part of 'local' (function, process/activity) and/or corporate reports? Please indicate reports, periodicity of production, and mode of representation.

Information system

This section is cross-cutting the other themes and it aims to understand in detail the process of production, transmission and use of SDGs-related information from a technical point of view.

- Information gathering: how does information gathering takes place? (e.g., manual, databases, etc.)
- Information processing: how does information processing takes place? (e.g., manual, structured calculation procedures, etc.)
- Transmission of information: how does the transmission of information takes place? (e.g., manual, electronic form etc.)
- How are the breadth and level of information system organised? (e.g., functional-organizational dimensions covered, who has access to information, co-existence of multiple software, etc.)
- Technology platform: is there software for producing and/or collecting and/or transmitting information (e.g., ERP, BI, other)? If yes, which one? If no, what systems are then used?

Incentive systems

- Is the incentive system explicitly linked to the SDGs? If yes, how?

Disclosure

This section aims to check for consistency and linkages between externally and internally communication, even if it is not a specific object of interest.

- Communication tools: in which external communication tools are the strategy, goals and information, with reference to the SDGs, communicated?
- Who are the external audience of the information? Are there privileged audience to whom the external communication of the SDGs is "built"?