

**UNIVERSITÀ DEGLI STUDI DI NAPOLI
“PARTHENOPE”**



**Dipartimento di Studi Aziendali ed Economici
Corso di Dottorato in Economics, Management and Accounting**

XXXVIII Ciclo

***“Environmental Accounting for the Measurement of Public Value:
Theoretical Profiles and Empirical Evidence”***

Anno Accademico 2024/2025

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*finanziato dall’Unione Europea – NextGenerationEU
Decreto Ministeriale n. 351 del 9 aprile 2022 - CUP: I61I22000320007*

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Introduction

This dissertation takes public value as its primary object of inquiry and adopts environmental accounting as the main analytical lens. Its aim is to examine whether, and to what extent, environmental accounting can serve as an effective instrument not only for measuring public value, but also for making it visible and actionable within managerial and decision-making processes. This approach rests on an assumption widely acknowledged in the management and accounting literature: what we measure shapes what we do. The capacity to observe, quantify, and communicate a phenomenon inevitably influences how it is managed and the outcomes it produces.

The entire research architecture is grounded in three key concepts—sustainability, public value, and environmental accounting—which are clarified at the outset to avoid interpretative ambiguity and to establish a coherent theoretical foundation.

The first of these, sustainability, is an omnipresent yet often misused term, frequently invoked in a rhetorical or generic sense. Its definition and measurement vary considerably across institutional and organizational contexts. Each organization interprets sustainability in light of its own identity, mission, and institutional configuration, translating it into distinct operational practices and governance models. Consequently, sustainability cannot be understood as a universal or abstract value, but rather as a situated construct—one that acquires meaning only when embedded within the concrete reality of an organization.

The second core concept, value, is equally complex and elusive. Its definitional challenges stem from its inherently interdisciplinary nature. The notion of value has deep roots in both economic theory and axiology, the branch of philosophy that examines the nature, hierarchy, and relativity of values. Whereas economics explores the practical manifestations of value—how values are translated into choices and behaviors—axiology investigates their normative and moral foundations, distinguishing between absolute and relative forms.

Over time, economic value has undergone a process of progressive subjectification. Whereas it was once conceived in objective terms—linked to labor, scarcity, or utility—the rise of modern thought, particularly through the contributions of authors such as Weber and Schmitt, brought awareness that value arises from the interplay of multiple individual and social judgments. Contemporary economic theory therefore interprets value as the expression of subjective preferences and perceptions of utility held by different actors. Yet this subjectivity may generate conflict when actors attribute importance to divergent or incompatible values.

Axiology describes this condition as a “polytheism of values”, namely, the coexistence of multiple and potentially competing value systems. Such pluralism is mirrored in organizational life, where decision-makers must constantly balance different forms of value, including:

- Economic value, associated with efficiency, productivity, and profit.
- Social value, linked to equity, inclusion, and cohesion.
- Environmental value, connected to sustainability and ecological stewardship.

Within the management and accounting literature, the creation and distribution of value has become a central theme. To inquire into value is to question the meaning and purpose of economic action, moving beyond the traditional logic of profit maximization toward a broader understanding of the firm as a complex and evolving system (Garzella, 2000; Lai, 2004).

This view is rooted in the Italian tradition of *Economia Aziendale*, which conceives the firm not merely as a generator of wealth but as a producer of collective well-being. Zappa (1956) argued that business production does not end with the achievement of income but finds completion only in its fair and equitable distribution among those who participate in the enterprise. Similarly, Ferrero (1968) maintained that producing wealth means producing well-being, both for individuals and for the community at large. In this tradition, the firm is not simply an economic instrument but an institutional entity responsible for maintaining balance among diverse interests and ensuring the long-term sustainability of its operations (Garzella, 2000). Whereas the Anglo-American perspective has long emphasized profit as the primary measure of success, the European—and particularly the Italian—tradition has highlighted the importance of integrating economic and financial value creation with the satisfaction of multiple stakeholder expectations (Scaletti, 2003).

Within this framework, value creation is understood as a complex and dynamic process, sustained by long-term social interaction. Limiting the notion of value creation to a single perspective means overlooking the systemic nature of the firm (Bruni, 2002). For this reason, Italian scholarship introduced the concept of “extended value creation,” which encompasses not only quantitative and monetary aspects, but also qualitative dimensions related to economic, social, and environmental sustainability (Borgonovi, 2001; Bruni, 1994; Vicari, 1995).

The notion of extended value creation can thus be seen as a precursor to the concept of Creating Shared Value (CSV), which calls for a renewed integration between economic and social objectives by recognizing that corporate competitiveness and societal progress are interdependent (Porter and Kramer, 2011).

However, as Govindarajan and Srivastava (2020) observe, the translation of this vision into concrete managerial practice remains limited—partly due to the absence of accounting tools

capable of integrating economic, social, and environmental dimensions into a unified evaluative framework.

Within this context, management accounting plays a crucial role in steering decision-making processes toward the achievement of shared value objectives (D'Onza, 2022; Marchi, 2020). The well-established interconnection between the information–accounting system and the decision-making system with value creation theory, highlighted by scholars of *Economia Aziendale* (Amaduzzi, 1973; Garzella *et al.*, 2025; Miolo Vitali, 1993), suggests that accounting should not be conceived merely as a measurement tool, but rather as a cognitive and cultural device capable of shaping organizational behavior (Carnegie *et al.*, 2021). Traditional accounting, however—anchored in financial indicators—fails to adequately represent the multidimensional nature of value creation or to support decision-making processes oriented toward sustainability (Scaletti, 2003). The challenge, therefore, lies in developing accounting instruments capable of integrating economic, social, and environmental dimensions within a coherent measurement system. This entails moving beyond conventional metrics and adopting accounting approaches that reconcile quantitative and qualitative dimensions, financial indicators, and ethical considerations.

In this scenario, the reflection on the concept of value regains central importance. The traditional profit-maximization paradigm is no longer sufficient to capture the complexity of the relationships linking organizations to their social and environmental contexts. The Creating Shared Value (CSV) framework (Porter and Kramer, 2011) has contributed to overcoming this limitation by proposing that corporate competitiveness and social progress can be mutually reinforcing. Yet, the notion of shared value remains primarily firm-centered and instrumental, where the creation of social benefits ultimately serves the purpose of sustaining competitive advantage.

This study seeks to move beyond the shared value perspective by adopting the conceptual framework of public value, which operates at an institutional and collective level. Unlike shared value, public value does not arise from the alignment of interests between the firm and its stakeholders but from the joint responsibility of multiple actors—public, private, and civil society—in generating widespread well-being, trust, equity, and sustainability (Meynhardt, 2009; Moore, 1995). Public value is realized when organizational action produces positive outcomes for society, improving quality of life, strengthening social cohesion, and safeguarding the environment as a common good.

Within this framework, environmental accounting serves as a privileged analytical lens for examining how organizations can translate the principles of public value into concrete practices.

It is not understood as a mere technical measurement system but as a mediating instrument capable of integrating economic, social, and ecological objectives within a unified vision of sustainability. Through the measurement and reporting of environmental impacts, environmental accounting makes the organization's contribution to the collective good visible and assessable, providing a shared language through which decisions can be guided toward a long-term equilibrium between growth, equity, and environmental preservation.

From this perspective, the purpose of environmental accounting is not limited to quantifying impacts but to activating processes of learning and accountability that strengthen the connection between organizational performance and public value. By transforming environmental measurement into a driver of cultural and institutional change, environmental accounting fosters a new understanding of how sustainability becomes embedded in managerial practice and organizational identity.

This dissertation is organized into four chapters, which together construct a theoretical, methodological, and empirical pathway aimed at understanding how environmental accounting contributes to the creation and measurement of public value within hybrid organizations.

The first chapter, *Accounting and Public Value: Evolution and Conceptual Boundaries*, lays the conceptual foundations of the research. It examines the transformation of accounting's role in the context of contemporary grand challenges—climate change, social inequality, and declining trust in institutions—and analyzes how the notion of public value has emerged as an interpretive framework capable of transcending traditional economic-financial paradigms. The chapter highlights the contribution of the Italian *Economia Aziendale* tradition, which anticipated the idea of collective value through the principle of balance among economic, social, and moral dimensions, and revisits international literature that positions accounting as a cognitive and social infrastructure oriented toward the common good.

The second chapter, *The Evolution of Environmental Accounting: Theoretical Pathways and Bibliometric Evidence*, reconstructs the historical and normative evolution of environmental accounting—from the early developments in social reporting during the 1970s to current systems of integrated measurement and disclosure. It offers a comprehensive overview of the conceptual and methodological approaches that have defined the field, emphasizing the growing convergence between environmental accounting, sustainability reporting, and public accountability. The chapter also presents a bibliometric analysis identifying the main research trajectories, thematic clusters, and author networks that have contributed to shaping

environmental accounting as an autonomous discipline, while revealing its connections to the theory of public value.

The third chapter, *Accounting for the Environment and the Public Good: Theoretical Perspectives*, develops the integrated theoretical framework guiding the study. It reviews major interpretive approaches in accounting—legitimacy theory, stakeholder theory, institutional theory, and critical theory—and demonstrates how each contributes to understanding the relationship between accounting practices, sensemaking processes, and public purposes. Particular attention is given to the institutional logics perspective as a theoretical lens for explaining the tensions among economic, regulatory, and community logics in hybrid organizations. From this standpoint, environmental accounting is conceptualized as a mechanism of mediation that connects organizational performance and public value, acting as a technical, social, and symbolic device capable of integrating the multiple dimensions of sustainability.

The fourth chapter, *Empirical Analysis of Environmental Accounting for Public Value as a Mediator for Institutional Logic Tensions*, presents the empirical study conducted on an Italian municipal corporation operating in the environmental services sector. The objective is to analyze how the implementation of environmental accounting—particularly the measurement of the carbon footprint—contributes to the creation of public value in a context characterized by multiple and potentially conflicting institutional logics. Using a qualitative interpretive approach, the analysis adopts Benington's (2011) public value outcomes framework to assess the effects generated by environmental accounting across four dimensions: economic, social, ecological, and institutional. By examining both processes and results, the chapter shows how environmental accounting functions as a mediating mechanism between economic objectives and public purposes, translating sustainability principles into tangible outcomes for the community.

Finally, the conclusion synthesizes the theoretical and empirical findings, highlighting the study's contribution on two levels: first, the redefinition of accounting's role as an enabling instrument for public value creation; and second, the reconceptualization of environmental accounting as a space of dialogue and mediation among institutional logics—one that renders the contribution of organizations to systemic sustainability both visible and measurable.

CHAPTER 1 - Accounting and public value: evolution and conceptual boundaries

1.1 The Contemporary Context: Addressing Grand Challenges

The 21st century has been defined by the emergence of the Anthropocene, a new geological epoch in which global natural ecosystems are significantly shaped by human activity (Hoffman, 2017). Beyond the climate crisis, human societies face a convergence of interrelated challenges, including economic, social, political, health-related, technological, and cultural issues. These crises, deeply interconnected and mutually reinforcing, constitute what scholars have termed a “polycrisis”, which makes the pursuit of effective and lasting solutions considerably more difficult (Morin, 2011). At local, national, and global levels, a range of urgent problems has emerged, whose identification and resolution (or at least meaningful mitigation) is essential for any society that aspires to be considered civil (Gray, 2006). As a result, global issues such as climate change, demographic aging, public health outcomes, the rise of new technologies, and mounting sociopolitical uncertainties have renewed academic interest in producing research with tangible social impact (Brammer *et al.*, 2019).

Within this broader context, a key set of pressing issues has been conceptualized as “Grand Challenges” (GCs). The term originated in mathematics when David Hilbert, in 1900, proposed a list of 23 unsolved problems that, if resolved, would advance the discipline. Initially adopted by niche academic communities, the concept gained momentum across scientific fields during the early 2000s, becoming increasingly complex and interdisciplinary (Howard-Grenville and Spengler, 2022; Kaldewey, 2018; Omenn, 2006). More recently, management scholars have shown growing interest in engaging with GCs, both to frame their academic identities and to contribute to solving societal problems (Howard-Grenville, 2020). This orientation also helps journals align with the production of impactful research and enables funding bodies to support high-impact projects (Howard-Grenville and Spengler, 2022; Kaldewey, 2018).

Although definitions vary, George *et al.* (2016) describe GCs as “specific critical barrier(s) that, if removed, would help solve an important societal problem with a high likelihood of global impact through widespread implementation” (p. 1881). Similarly, Eisenhardt *et al.* (2016) define them as “highly significant but potentially solvable problems such as urban poverty, insect-borne disease, and global hunger [that] affect large numbers of people in often profound ways [and] are typically complex with unknown solutions and intertwined technical and social elements” (p. 1113).

GCs are marked by complexity, uncertainty, and value-laden dynamics, often necessitating collaboration across sectors and disciplines (Ferraro *et al.*, 2015). Accordingly, they can only be plausibly addressed through coordinated and collective responses (George *et al.*, 2016). The growing visibility of GCs has encouraged scholars to align their work with both disciplinary advancement and societal relevance (Howard-Grenville and Spengler, 2022). Leading academic journals in management and accounting have issued calls for research that tackles GCs as a way to generate socially relevant knowledge (Seelos *et al.*, 2023), with several special issues dedicated to the theme (Kunisch *et al.*, 2023; Ricciardi *et al.*, 2021; Voegtlin *et al.*, 2022). Topics explored include climate change (Howard-Grenville *et al.*, 2014), societal resilience (Van Der Vegt *et al.*, 2015), and gender inequality (Joshi *et al.*, 2015).

The relevance of GCs gained further momentum with the launch of the United Nations 2030 Agenda and its Sustainable Development Goals (SDGs), which provided a structured framework for engaging with these challenges (Brammer *et al.*, 2019). GCs remain defined by their multidimensional nature, characterized by high uncertainty and the involvement of contested values, which make cross-sectoral collaboration essential (Ferraro *et al.*, 2015).

To systematize this heterogeneous domain, Brammer *et al.* (2019) proposed a typology of GCs comprising four categories, as illustrated in Figure 1.

The authors identify two fundamental dimensions for understanding and classifying GCs. The first concerns geographic scope, a dimension widely debated in the literature. According to Buckley *et al.*, (2017), GCs should be regarded as inherently multinational, whereas other scholars, such as George *et al.* (2016), emphasize that these challenges may also manifest in local contexts. For instance, Berrone *et al.* (2016) argue that GCs materialize in specific territorial environments, while McDougall and McDavid (2014) show that some challenges may originate locally but have global repercussions, as in the case of pandemic disease outbreaks. At the same time, the local dimension of GCs can carry context-specific nuances that are critical for scientific inquiry, as highlighted by Vakili and McGahan (2016).

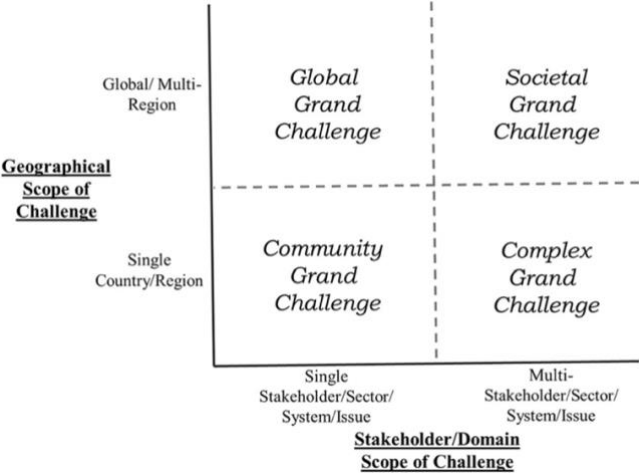
The second dimension relates to the socio-technical, scientific, systemic breadth, and the diversity of actors involved. Numerous studies emphasize the complexity and multiplicity of interests, disciplines, and institutions required to address GCs. By combining these two dimensions, four main types of GCs can be delineated. “Social GCs” which occupy the upper-right quadrant of the framework, are characterized by their global reach and high complexity. They involve issues such as climate change, poverty, and food insecurity and require long-term, multilevel, and multi-actor interdisciplinary cooperation. “Global GCs”, located in the upper-left quadrant, are also transnational in scope but more limited in terms of actor diversity and

complexity. These include challenges related to financial systems or energy storage, which can often be addressed through coordination among well-defined scientific or sectoral communities.

“Complex GCs”, situated in the lower-right quadrant, have a more geographically limited impact (national or subnational) but involve high system complexity and a wide array of actors. Examples include droughts, wildfires, or localized conflicts. These are phenomena that, while geographically circumscribed, display intricate dynamics. Finally, “Community GCs”, positioned in the lower-left quadrant, are local in both scale and scope. These pertain to issues affecting a specific community or region, such as corruption or infrastructure adaptation. While less complex, they still require active engagement from relevant academic and institutional communities.

This classification of Grand Challenges does not serve merely as an analytical taxonomy but also provides a valuable lens for understanding the inherent complexity of sustainability. By framing sustainability as an interconnected set of challenges spanning multiple quadrants, its multilevel, multidimensional, and plural nature becomes evident. This perspective enables recognition of sustainability’s global and local dimensions simultaneously and supports the development of an operational definition, not as an abstract or universal concept, but as a constellation of problems and opportunities. Addressing these effectively requires the coordinated engagement of diverse actors, the mobilization of heterogeneous resources, and adaptive governance that can reconcile ambition, complexity, and feasibility of action.

Figure 1. Characterizing types of “Grand Challenges”. Source: Brammer et al. (2019)



1.2 The Emerging Role of Accounting

The GCs of our time (environmental, social, economic, and democratic) cannot be addressed through incremental adjustments alone. Rather, they demand profound systemic transformations. These transformations extend to individual and collective values, lifestyles, economic models, international relations, managerial logics and, crucially, the tools by which value is measured and decisions are guided (Drucker, 1993).

The prevailing economic paradigm, often referred to as “business as usual”, is underpinned by several structural characteristics. First, its fixation on short-term profitability drives organizations to disregard the long-term consequences of their actions, thereby exacerbating ecological and social crises (Schwab, 2021). Second, the system is fueled by a relentless drive toward consumption, where the use value of goods is subordinated to the imperative of constant replacement. While consumption and waste are inevitable features of economic activity, their systematic maximization poses a direct threat to sustainability (Farley and Smith, 2020). Third, nature is treated as devoid of intrinsic value: there is no comprehensive reporting of the destructive impacts economic activity imposes on social and ecological systems, perpetuating unsustainability (Costanza *et al.*, 1997).

Perhaps most concerning is the fourth dimension, which reveals the anthropological depth of the problem: human life itself is not recognized as a core value. Economic growth is built on the erosion of the conditions required for sustainable life, if not the outright annihilation. Workers are treated as interchangeable units, social relationships are seen as impediments to productivity, and the pursuit of short-term profits often entails the systemic devaluation of the conditions essential for human flourishing (Parrique *et al.*, 2019). Financial accounting, as a technical expression of this paradigm, contributes to the social construction of a reality dominated by efficiency and calculation, but devoid of humanity (Hines, 1988).

Consequently, the current economic system is sustained by organizational models and performance measurement tools that equate success with increased production, consumption, and profits, while ignoring adverse environmental and social consequences. These models are far from neutral; they are supported by an accounting and evaluative apparatus that reinforces logics of exploitation and inequality (Gray, 2006).

As Hines (1988) contends, accounting does not merely reflect reality; it actively constructs it. What is measured determines what is valued, and what is ignored. Thus, what we measure affects what we do. Conventional accounting has systematically excluded everything that cannot be monetized: love, beauty, leisure, happiness, relationships. Financial efficiency has

increasingly colonized all spheres of life, reducing accounting to a tool of dehumanization and oversimplification (Bebbington and Gray, 2001; Gray, 2013).

This reduction of complexity to economic dimensions thrives in the context of neoliberal hegemony, where cost-benefit logic extends into domains traditionally outside the economic sphere (Brown, 2015; Miller, 2008). Within such a framework, social and environmental needs are routinely marginalized because they are not recognized by conventional systems of calculation (Chua, 1986). As a result, accounting practices become technologies of power that legitimize some interests while excluding others, thereby reinforcing existing power structures (Cooper *et al.*, 2005; Gallhofer and Haslam, 1991).

Pluralistic societies are, by their nature, characterized by a diversity of actors, both human and non-human, who represent competing and sometimes irreconcilable interests. In such a contested space, value judgments are inevitable, and accounting becomes embedded in the public process of decision-making and justification. As Vinnari and Dillard (2016) argue, effective democracies must be capable of managing these inherent tensions, acknowledging that accounting is, ultimately, also a political practice. Accounting will always be “contestable in terms of the interests it legitimizes and those it excludes” (Arrington and Puxty, 1991, p. 32). If financial accounting has helped construct the problem, it is reasonable to ask whether a reimagined form of accounting might contribute to the solution. According to Gray (2006), only a radical rethinking of the accounting system can support meaningful responses to contemporary challenges. This rethinking involves more than the integration of environmental and social indicators into financial statements. It demands a redefinition of the very foundations of accounting: who counts, for whom, with what purposes, and with what consequences.

Historically, accounting has been primarily regarded as a technical discipline. Early definitions reflect this orientation. The American Institute of Accountants (1953) defined accounting as “the art of recording, classifying, and summarizing in a significant manner and in terms of money, transactions and events which are, in part at least, of a financial character, and interpreting the results thereof”. Similarly, the American Accounting Association (1966) described it as “the process of identifying, measuring and communicating economic information to permit informed judgments and decisions by users of information”. These definitions are aligned with the dominant economic rationality, which has framed accounting as a neutral and technical endeavor (Moerman *et al.*, 2023). Accounting is typically perceived as the provision of “objective” and “impartial” information to support decision-making processes (Arrington and Puxty, 1991; Hopwood, 1989). This perception has contributed to

accounting's enduring "aura" of validity and truthfulness (Gallhofer and Haslam, 1991; Sikka and Willmott, 1995).

However, in recent decades, the field of accounting has attempted to respond to the escalating challenges posed by sustainability along two primary trajectories: the refinement of conceptual frameworks for financial reporting and the expansion of business reporting toward broader forms of accountability (Nørreklit *et al.*, 2024). The former can be traced back to the foundational work of the 1960s and 1970s, including contributions from Sprouse and Moonitz (1962) and Stamp (1981), which initiated a critical examination of the principles and postulates underpinning financial accounting. Yet even the most recent framework advanced by the IFRS Foundation, claiming the aim of "bringing transparency, accountability, and efficiency to financial markets" (IFRS, 2022), remains anchored in a conventional, finance-centric paradigm that prioritizes the needs of investors and relies on principles such as relevance and faithful representation.

This approach continues to account for economic values through a reductive lens, neglecting the environmental, social, and ethical dimensions that constitute the foundations of a good life (Lehman, 2021). In response to these limitations, a second trajectory has emerged: the integration of non-financial content into corporate reporting, catalyzed in part by the global Sustainable Development Goals (SDGs) agenda (Bebbington and Unerman, 2020). This has led to the proliferation of international initiatives aimed at developing new metrics and disclosure standards on climate, social, and governance issues, such as the GRI, CDP, SASB, CDSB, IIRC, and ISSB¹ (Rogers, 2019). The European regulatory framework has also played a key role, notably through directives like the NFRD and, more recently, the CSRD, which tasked EFRAG with developing mandatory sustainability reporting standards (Schimperna and Loizzo, 2022). Despite these efforts, the field remains highly fragmented and lacks a coherent and unified regulatory framework. While the proliferation of standards and approaches signals progress, it has yet to produce the structural shift required to overcome accounting's subordination to profit-maximization and the dominant financial paradigm that reduces complex moral dilemmas to the singular objective of maximizing shareholder value (Dillard *et al.*, 2005). This paradigm,

¹ In detail: The Global Reporting Initiative (GRI) sets voluntary standards for sustainability reporting, currently among the most widely adopted frameworks internationally. The Carbon Disclosure Project (CDP) collects voluntary corporate data on climate change, water usage, and deforestation. The Sustainability Accounting Standards Board (SASB) develops industry-specific standards for ESG disclosures deemed material to investors. The Climate Disclosure Standards Board (CDSB) promotes the integration of environmental information into traditional financial reports. The International Integrated Reporting Council (IIRC) advanced the concept of integrated reporting, linking financial and non-financial performance. Lastly, the International Sustainability Standards Board (ISSB), established by the IFRS Foundation, aims to deliver global sustainability disclosure standards with a clear investor orientation (Nørreklit *et al.*, 2024).

with its short-term horizon, privileges immediate financial performance over long-term sustainability, incentivizing practices such as earnings management and overlooking the actual social and environmental impacts of business activities (Drew, 2009).

Although initiatives like Integrated Reporting (IIRC), the CDSB, and the ISSB claim to enhance transparency, they remain embedded within investor-oriented logics and promote a weak form of sustainability (Garcia-Torea *et al.*, 2023), ultimately subordinating environmental and social concerns to financial capital. This perspective, rooted in the classical problem of information asymmetry (Jensen and Meckling, 1979), is legitimized by an accounting discourse that continues to address itself primarily to investors (Shearer, 2002). Moreover, the quality of sustainability disclosures remains low, often based on fragmented indicators and compromises between data accessibility and relevance to stated objectives (Bebbington and Unerman, 2020; Sobkowiak *et al.*, 2020).

This situation leaves open the fundamental question of how accounting might be reimagined as an effective tool for promoting a more equitable and sustainable society (Serafeim, 2022; de Villiers *et al.*, 2017).

Contemporary scholarship increasingly challenges the traditional, technocratic view of accounting by conceptualizing it as a social and moral practice. As Carnegie *et al.* (2021, p. 69) assert, “Accounting is a technical, social and moral practice concerned with the sustainable utilisation of resources and proper accountability to stakeholders to enable the flourishing of organisations, people and nature”. This perspective implies that accounting does not merely represent social reality; it actively shapes it. It influences behaviors, expectations, decision-making processes, and the legitimacy of institutions. Metrics such as key performance indicators and financial statements help construct organizational culture, define who and what are included or excluded, and foster or erode trust, identity, and credibility. In this regard, accounting emerges not as a neutral instrument, but as a form of power and social ordering.

The moral dimension of accounting lies in the ethical implications embedded in every social practice. Accounting is not a passive exercise in record-keeping; it determines what is seen as valuable and what is not, thus creating moral obligations by shaping who is acknowledged, who is ignored, and who may be adversely affected. For this reason, accounting must be practiced with both technical competence and ethical discernment. Francis (1990) similarly emphasizes that accounting is as much a moral as a discursive practice. Moral responsibility, in this sense, involves responding to a normative question: “How should I act in this particular situation?” Rather than mechanically applying predefined rules, it requires the capacity for judgment, the

willingness to assume responsibility, and the ability to act thoughtfully within complex and contested contexts.

This renewed understanding repositions the purpose of accounting as the sustainable use of resources and accountable engagement with a broad range of stakeholders. It emphasizes long-term value creation over short-term gain and promotes inclusivity by extending accountability beyond investors and executives to include employees, communities, and the environment. Such a perspective aligns with a multi-capital framework that recognizes the interdependence of financial, natural, human, and social capital. It also calls for a dialogic orientation, wherein accounting becomes a relational practice embedded in collective deliberation and the pursuit of the common good.

Ultimately, the goal is “to enable the flourishing of organisations, people and nature”. The notion of flourishing evokes the Aristotelian concept of “eudaimonia”, referring to the realization of human potential and purpose. This raises a fundamental question: what conditions must be in place for flourishing to occur, and how can accounting serve to identify, support, and sustain those conditions? This work argues that these conditions are intrinsically linked to value creation, particularly the generation of public value.

1.3 The Concept of Public Value

Over the past decade, the public value has emerged as a central topic in both academic literature and public management practice (Van der Wal *et al.*, 2015; Williams and Shearer, 2011). This growing interest reflects the ongoing evolution of public administration thinking and the increasing complexity of the challenges faced by public institutions (Kaufman, 1969; Peters and Pierre, 1998). The fundamental differences among major public administration models lie precisely in the values and normative principles that underpin them (Denhardt and Denhardt, 2015). Traditional public administration historically prioritized efficiency as its core value, while New Public Management expanded this focus to include performance and effectiveness. In contrast, the emerging approach of Public Value Governance adopts a broader, more inclusive perspective that recognizes a plurality of values, such as democratic legitimacy, social justice, and collective well-being (Bryson *et al.*, 2014).

Building on Moore’s (1995) seminal work, the concept of public value has become increasingly widespread and is now widely adopted across multiple research fields as a concept, theory, and

framework. Public value is defined as a contribution to the public sphere that is valued by the public itself (Ansell and Torfing, 2021; Benington, 2011; Hartley *et al.*, 2017; Moore, 1995). To create public value, practitioners must first identify what is considered relevant by the public, understood as a heterogeneous set of social groups. This process of collecting input from the public to specify the desired public value outcomes is referred to by Moore (1995) as defining public value. Since different groups value different things, this definition constitutes a contested and negotiated democratic practice (Benington, 2015; Hartley *et al.*, 2017;). Furthermore, Nailer *et al.* (2019) distinguish between anticipated value and realized value, that is, the transformation of expected value into outcomes actually generated through specific activities.

In this context, the concept of public value seeks to address the limitations of earlier paradigms by redefining both the goals and the means of public action. The literature on public value is organized around three core concepts: public values, public value creation, and the public sphere. *Public values* refer to a set of normative principles shared within a society, as articulated by various scholars (Andersen *et al.*, 2012; Bozeman, 2002, 2007; Jørgensen and Bozeman, 2007; Meynhardt, 2009). These are not created but rather realized through practices of good governance (Bryson *et al.*, 2014; de Bruijn & Dicke, 2006; de Graaf & Paanakker, 2015). Procedural public values, such as transparency, are associated with good governance, while performance-related values refer to effectiveness and efficiency in the delivery of public services; both are normative and process-oriented (de Bruijn & Dicke, 2006; de Graaf & Paanakker, 2015). *Public value creation* pertains to the production of goods, services, and outcomes that are perceived as valuable and meaningful to the public, or that contribute to strengthening the public sphere, evaluated according to criteria derived from public values (Alford, 2008; Alford and O'Flynn, 2009; Benington and Moore, 2011; Stoker, 2006). Finally, the *public sphere* represents the discursive and institutional space in which public values are defined, contested, and realized (Benington, 2011).

Within this framework, Barry Bozeman (2007) defines public values as those normative principles for which there is a reasonable degree of societal consensus concerning the rights, duties, and benefits of citizens, as well as the foundations of public policy. A *public value failure* occurs when neither market mechanisms nor public institutions can ensure the provision of goods and services necessary to uphold these values. Addressing such failures requires evaluating inputs, processes, outputs, and outcomes against specific public value criteria. Bozeman's approach is both descriptive—when analyzing existing consensus—and normative—when advocating for corrective action in the face of unmet public values. Despite

the challenges of conceptualizing and measuring them, Bozeman argues that public values can be identified and empirically assessed.

Mark Moore, (1995, 2014), meanwhile, emphasizes the strategic role of public managers in creating public value. He conceptualizes public value as the public sector equivalent of shareholder value in the private sector and proposes a framework for identifying, promoting, and delivering what is collectively valued by citizens. According to Moore, the public expects three things from government: (1) high-performing, service-oriented bureaucracies; (2) efficient and effective public organizations that deliver socially desirable outcomes; and (3) fair and equitable institutions that promote both procedural and substantive justice. While Moore's definition is less prescriptive than Bozeman's, it nonetheless identifies a core set of priority values: efficiency, effectiveness, equity, and democratic legitimacy. His framework is grounded in the *Strategic Triangle* (1995), which holds that public strategies must (1) generate substantive public value, (2) be politically legitimate and sustainable, and (3) be administratively and operationally feasible. In this view, the success of public managers lies in their capacity to initiate or reshape institutions to enhance collective value over time. Moore contends that this requires a "restless and value-seeking imagination" (Benington and Moore, 2011, p. 3). Like Bozeman, Moore treats public value as measurable and considers it both a reflection of objective social outcomes and an intrinsic dimension of effective democratic governance. The *public value account* makes these benefits visible by comparing collectively valued outcomes to the costs associated with using public authority and resources.

In contrast to these institutional and managerial perspectives, Timo Meynhardt (2009) offers a psychological and experiential approach to public value. He argues that public value is generated within the relationship between the individual and society and is defined by the perceived quality of that relationship. This quality is evaluated through the extent to which basic human needs are satisfied, based on four dimensions: moral-ethical, political-social, utilitarian-instrumental, and hedonistic-aesthetic. The "value" an individual assigns to an experience depends on how well that experience meets fundamental needs, assessed through these lenses. Importantly, these assessments are subjective, emotionally, and motivationally driven reactions to experiences involving the public sphere. Unlike Bozeman and Moore, Meynhardt does not prescribe institutional arrangements but emphasizes the interpenetration of the public and private realms. While paying less attention to supra-individual processes, he nonetheless maintains that public value is measurable through the dimensions he identifies and validates through psychometric tools.

John Benington (2011) extends this conceptual landscape by situating public value within the *public sphere*, which he defines as a democratic space composed of values, rules, knowledge, and cultural resources that provide society with meaning, belonging, and continuity. This sphere must be continuously constructed and negotiated through dialogue. For Benington, public value is inherently contested and arises through dynamic processes of deliberation. The public sphere is the psychological, social, political, institutional, and physical space where public values and public value are held, generated, or eroded. Public value, by definition, includes all contributions to the vitality of the public sphere. From a practical standpoint, determining who the “public” is, and what it values, remains a complex task (Frederickson, 1991). Nonetheless, Meynhardt (2009, p. 205) describes “the public” as an “indispensable operational fiction” that provides orientation in complex environments. The more complex the context, the more the public becomes a necessary yet elusive social construct (p. 204).

In summary, the literature on public value has evolved as a response to the limitations of efficiency-driven paradigms like NPM. It offers a more holistic, inclusive vision of public action, centered on the collective construction of what is considered good, desirable, and meaningful for society. In line with this perspective, public value can be defined as the outcome of organizational action that aligns with the institutional mission of the entity, is directed toward the sustainable satisfaction of collective needs, and contributes to a systemic balance between the organization and its broader economic, social, and environmental context. It is manifested through positive impacts on the public interest, consistent with principles of cost-effectiveness, democratic legitimacy, and institutional harmony.

1.4 The Public Value Pyramid

The definition of public value adopted in this study - understood as the outcome of organizational action that aligns with an entity’s institutional mission, aims to sustainably meet collective needs, and fosters systemic balance between the organization and its broader economic, social, and environmental context - entails a high degree of conceptual complexity. This complexity presents a significant operational challenge: the difficulty of translating such a multifaceted and multidimensional concept into concrete and applicable measurement criteria.

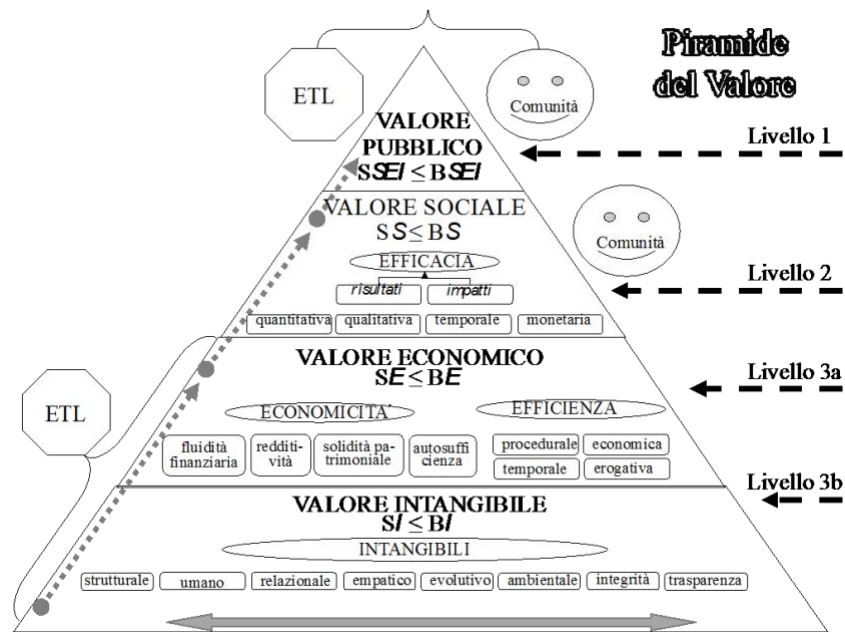
Public value extends beyond traditional economic or performance-based indicators; it encompasses ethical, social, environmental, and relational dimensions that are often qualitative

and inherently subjective. As such, identifying tools capable of capturing the substance of public value in a systematic, comparable, and decision-relevant manner proves problematic. Without a structured methodology to observe and assess the actual generation of public value, the concept risks remaining abstract or merely rhetorical, thereby losing its transformative potential for organizational practices and strategic direction.

For Benington (2011), the concept of public value makes it possible to move beyond the narrow perspective of market economics by incorporating social, political, and ecological dimensions. Public value is therefore not reducible to economic efficiency or user satisfaction alone but must be understood as an added value to the public sphere in its broadest sense. Within this perspective, public value takes different forms. First, economic value, expressed through the generation of productive activity and employment, goes beyond growth indicators or GDP to encompass the impact of public policies on the vitality of territories and the creation of opportunities for work. Alongside this lies social and cultural value, achieved by strengthening social capital, community cohesion, social relationships, and cultural identity, thereby fostering both individual and collective well-being as well as the development of shared meanings. A further dimension is political value, derived from the consolidation of democracy, the promotion of public dialogue, and active citizen participation, together with improved governance quality and institutional transparency. Finally, ecological value reflects the active promotion of sustainable development and the reduction of so-called public bads such as pollution, waste, and climate change, embedding environmental sustainability as an essential component of collective and intergenerational well-being.

It is precisely from this broad and multidimensional vision that the “Public Value Pyramid” proposed by Deidda Gagliardo (2015, 2018) acquires relevance. While Benington’s taxonomy highlights the plurality of substantive contents that make up public value, the pyramid constitutes a first structured attempt to translate them into measurable criteria, organizing value creation across multiple levels: from legality and efficiency to the satisfaction of collective needs and the generation of systemic impacts. In this sense, the pyramid provides both a conceptual and operational framework for addressing the crucial challenge of measurement, offering a practical foundation for assessing what, in Benington’s perspective, might otherwise remain a broad yet elusive concept.

Figure 2. Public Value Pyramid. Source: Deidda Gagliardo (2015).



At the base of the Public Value Pyramid lies intangible value, understood as the invisible foundation upon which all other dimensions of public value creation rest. This level represents the organization's intangible assets, which include resources and qualities that, while not captured in traditional financial statements, deeply influence its ability to generate both economic and social value.

This layer comprises multiple, interdependent dimensions. The structural dimension refers to the internal organizational architecture, including rules, procedures, and structures that provide operational consistency and coherence. The human dimension concerns the skills, motivation, and behavior of personnel, which are seen as critical for the quality of public action. The relational dimension addresses the quality of internal and external stakeholder relationships, reflecting the organization's ability to build networks of collaboration and trust. In addition, the empathetic dimension highlights the capacity for mutual understanding and responsiveness, while the evolutionary dimension reflects openness to change, innovation, and continuous learning. The environmental dimension underscores the organization's attentiveness to its impact on natural ecosystems, consistent with principles of sustainability. Finally, the dimensions of integrity and transparency reflect adherence to ethical behavior and the willingness to be accountable to citizens, which are essential for democratic legitimacy.

From a theoretical perspective, this level emphasizes the need to consider public value as a systemic and processual phenomenon, emerging not only from tangible outputs but also from

enabling conditions that are often intangible. Although not directly measurable, these foundational elements are essential for the creation of value across the upper levels of the pyramid.

The third level of the pyramid is economic value, which plays a critical role in assessing an organization's ability to operate sustainably from financial, patrimonial, and operational standpoints. Economic value enables the creation of public value, but it should not be regarded as an end in itself. Its full meaning is realized only when directed toward meeting collective needs and producing positive outcomes for the community.

This level is structured around two primary axes: economy and efficiency.

Economic sustainability is evaluated through:

- Financial liquidity, meaning the organization's ability to meet financial obligations in a timely manner, ensuring operational stability.
- Profitability, understood as the surplus of revenues over costs, measured through indicators such as administrative results or operating margins..
- Asset solidity, referring to the consistency and resilience of the organization's assets, which are essential for long-term sustainability.
- Self-sufficiency, which reflects the degree of financial independence from external sources such as transfers or extraordinary contributions.

Efficiency is assessed through four dimensions:

- Procedural efficiency, relating to compliance with regulations, timelines, and administrative procedures.
- Economic efficiency, which measures the ability to achieve optimal results relative to costs incurred.
- Timeliness, referring to punctual delivery of public services.
- Service quality, which concerns the continuity, adequacy, and reliability of services delivered to citizens.

From a theoretical standpoint, this level marks the intersection between accounting and management. It is where financial and operational performance are monitored using objective, quantifiable indicators. However, strong economic performance alone does not fulfill the mission of a public organization. It is a necessary but not sufficient condition for generating public value. Economic outcomes must be interpreted in relation to higher-level goals, especially the capacity to create social and systemic value for the broader community.

The second level of the pyramid is social value, which refers to the organization's capacity to deliver tangible and intangible benefits to the community by responding effectively to both

expressed and latent needs. This level marks a critical shift from internal operations to externally perceived value, highlighting the point at which organizational performance becomes a matter of public concern.

Social value is expressed through measures of effectiveness, which include:

- Quantitative and qualitative outputs, such as the number of services delivered and the quality perceived by users and the broader community
- Temporal dimensions, including timeliness in addressing needs, consistency over the long term, and continuity in policies and services
- Monetary impact, including direct and indirect economic benefits generated for individuals and communities, such as social savings, widespread economic returns, or future cost reductions

Social value serves as a bridge between economic performance and the institutional mission of the organization. At this level:

- Resources are transformed into meaningful outcomes for society
- Public action is guided by collective needs and institutional purpose
- Social legitimacy begins to emerge, as the organization demonstrates its relevance and usefulness to the public

This level enables assessment of whether the organization produces impacts that are both significant and aligned with public goals. It provides the foundation for achieving the highest level of legitimacy: public value in its fullest form.

At the top of the Public Value Pyramid is public value, conceived as the most advanced and complex result of organizational action. Public value does not merely consist of efficient service delivery or measurable performance. It occurs when the organization's actions align with its institutional mission, are recognized by the community as useful and meaningful, and are legitimized socially.

Creating public value requires mutual recognition between the organization and the community it serves. Key conditions for its emergence include:

- Coherence between institutional purpose and activities, ensuring alignment between the organization's mandate and its operations
- Positive public perception, grounded in trust, transparency, and demonstrated social utility
- Recognition of the organization's role as a relevant and legitimate actor within the public system and broader social fabric

Public value has a relational and reflexive nature. It is not confined to outcomes but is reflected in the quality of the relationship between institutions and citizens. It is not a value that organizations can claim independently; rather, it emerges through engagement and shared legitimacy. As a result, public value cannot be reduced entirely to quantitative indicators or Key Performance Indicators (KPIs). Instead, it arises through dialogue and interaction, as a synthesis between public action and the recognition it receives.

In sum, public value expresses an organization's ability to generate collective well-being, reinforce trust-based relationships with its community, and maintain systemic balance across economic, social, and environmental dimensions.

In conclusion, the comparison between Benington's perspective and Deidda Gagliardo's framework highlights two complementary approaches to the concept of public value. Benington proposes a broad and dynamic vision that identifies economic, socio-cultural, political, and ecological outcomes as the fundamental dimensions through which the public sphere is enriched. His classification moves beyond the confines of market economics and underscores the plural, relational, and contested nature of public value, which emerges from processes of co-creation and must be continuously negotiated among diverse actors. By contrast, Deidda Gagliardo's "Public Value Pyramid" represents a systematic attempt to structure this concept into measurable and graduated levels, ranging from legality and efficiency to the satisfaction of collective needs and the production of systemic impacts.

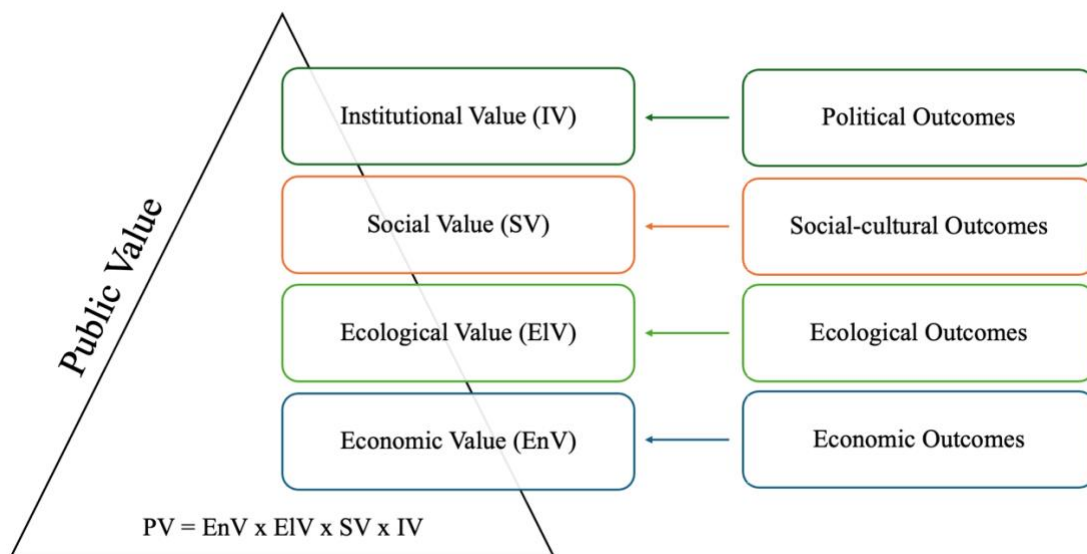
Taken together, the two perspectives provide both a substantive and an operational lens: Benington's framework captures the content and multidimensional nature of public value, while Deidda Gagliardo's pyramid offers a methodology to make it observable and assessable in practice. The outcomes identified by Benington—economic, socio-cultural, political, and ecological—define the substantive domains through which policies and services affect society, whereas the pyramid organizes these domains into progressively complex levels of value creation, from legality and efficiency to systemic and intangible impacts.

Integrating these approaches enables the development of a new framework (see Figure 3) in which Benington's value dimensions are reorganized within the structure of Deidda Gagliardo's pyramid, while at the same time moving beyond its rigidly hierarchical design. The proposed "integrated value pyramid" places economic value (EnV) at the base, representing the essential condition of balance, efficiency, and effectiveness necessary for organizational survival. Above it lies ecological value (EcV), reflecting the ability to reduce public bads and promote environmental sustainability, followed by social value (SV), associated with socio-cultural

outcomes such as cohesion, social capital, and collective well-being. At the top is institutional value (IV), which expands the idea of political outcomes to include legitimacy, transparency, and accountability, indispensable for ensuring credibility and continuity. Public value (PV) emerges from the interdependence of these four dimensions, represented in multiplicative terms ($PV = EnV \times EIV \times SV \times IV$): if one dimension is absent, the entire process of public value generation collapses.

This model underscores that public value should not be seen as the additive sum of levels but as the integrated outcome of interdependent dimensions. An organization operating at a loss, causing ecological damage, failing to foster social cohesion, or lacking legitimacy cannot generate public value. In this sense, economic outcomes are necessary but not sufficient; ecological and social outcomes broaden the scope of value creation, while institutional outcomes confer legitimacy and stability to the entire process. The integration of Benington's taxonomy with Deidda Gagliardo's evaluative structure therefore offers a more comprehensive framework for analyzing and measuring public value.

Figure 3. Integrated Value Pyramid.



1.5 Emerging Frontiers in Accounting Research: the Social Accounting Project

Recognizing and measuring public value has become a crucial challenge for accounting within public organizations. This task goes beyond the mere recording of data or the reporting of results. What is at stake is the ability of accounting to evolve into a tool that captures and enhances the positive impact an organization generates in relation to its institutional mission

and the collective needs it seeks to address. Public value, understood as the result of action consistent with an entity's mandate and aimed at fostering long-term well-being, manifests through impacts that cut across social, economic, and environmental dimensions. For this concept to effectively guide decision-making processes and organizational practices, it must be made observable, assessable, and comparable. In this context, measurement is not a secondary concern, but rather an enabling condition for integrating public value into strategy, governance, and performance evaluation.

Yet this demand for expanded accountability arises within a global context increasingly shaped by environmental and social crises. Ecosystem degradation, biodiversity loss, growing economic inequalities, and the persistence of extreme poverty are all, at least in part, the outcomes of an economic model driven by extractive logics and a short-term obsession with profit, often devoid of ethical consideration (De Woot, 2017). Traditional accounting has proven inadequate in capturing the negative externalities of economic activities, thereby contributing to their invisibility within decision-making frameworks.

In response to these challenges, the international community has advanced a sustainable development agenda, culminating in the formulation of the Sustainable Development Goals (SDGs), which call for a fundamental rethinking of the role of businesses and institutions in society (Bebbington and Unerman, 2020; Pigatto *et al.*, 2023). Within this framework, a proliferation of standards, frameworks, and initiatives has emerged, aimed at developing ESG (Environmental, Social, and Governance) metrics that more accurately reflect the complexity of organizational impacts (Lehner and Harrer, 2019). These initiatives are not merely regulatory or reputational responses. Rather, they reflect an increasing awareness that accounting can become a tool for accountability and for steering organizations toward the common good, provided it can adequately represent the diverse forms of value that organizations generate or destroy (Frémeaux *et al.*, 2020; Killian and O'Regan, 2020).

Against this backdrop, the concept of public value offers a constructive and critical alternative to the prevailing "business as usual" paradigm, which continues to dominate mainstream accounting and economic practices. If, as many scholars argue, the planet can no longer sustain a model of unbounded economic growth (Meadows and Randers, 2012; Rockström *et al.*, 2009), then the criteria by which organizational "success" is defined must be fundamentally reimagined. In such a context, efforts to make financial accounting more accurate or transparent, without questioning its underlying aims and assumptions, risk being not only ineffective but complicit in the perpetuation of an unsustainable system. It is from this awareness that the new frontiers of accounting have emerged, advocating a shift beyond

conventional boundaries to explore models capable of representing and promoting a more comprehensive vision of sustainability (Gray, 2006; Miller, 1998).

Over recent decades, critical accounting literature has increasingly emphasized the need to expand the functional scope of accounting beyond financial data recording and traditional economic reporting. Within this context, the notion of social accounting has gained prominence as an umbrella term encompassing a range of practices oriented toward sustainability, responsibility, and social justice. As depicted in Figure 4, the term “social accounting” has progressively come to include all forms of social, environmental, and ethical reporting, accounting, and auditing, as well as related practices such as accountability processes, cost analysis, responsible management, and sustainable investing (Gray, 2010a; Gray *et al.*, 2014). Gray (2002, p. 692), in his seminal work described this broader vision as the “social accounting project”, suggesting that “social accounting can usefully be thought of as the universe of all accountings”. This project seeks to reimagine the goals, subjects, and objects of accounting measurement through an expanded epistemic and practical lens. Similarly, Boyce (2014) states that social accounting recognizes the effects and consequences of traditional accounting worldviews and practices, and can be applied at the level of entities, organizations, and other units of interest, including society as a whole. In this sense, social accounting is not merely a technical activity but a discursive and political practice capable of challenging the assumptions of dominant economic paradigms and promoting alternative forms of accountability. More specifically, drawing on Gray (2010b), social accounting can be articulated along three main trajectories: (1) the critical analysis of the impacts generated by conventional accounting and prevailing economic logics; (2) the improvement of these impacts through practices aimed at mitigating harm and generating value for the broader community; and (3) the development of new accounting tools capable of fostering equity, transparency, and sustainability by redefining organizational performance metrics and evaluation criteria.

Figure 4. Landscape of the Social Accounting Project.

SOCIAL ACCOUNTING (Gray, 2010; Gray et al., 2014)



To understand the transformative potential of social accounting, it is helpful to refer to the theoretical model proposed by Wright (2013), which outlines three major traditions of social change: rupture, interstitial transformation, and symbiotic transformation. When applied to accounting, these strategies allow for a distinction between revolutionary, reformist, and hybrid approaches.

The rupture strategy assumes that capitalism will ultimately collapse under the weight of its own internal contradictions. While events such as global financial crises, ecological disasters, or systemic shocks may act as catalysts, Gray (2006) recognizes that, in its current form, social accounting plays only a limited role in processes of radical change.

More promising are interstitial transformations, which emerge in spaces not fully colonized by market logic. Some initiatives of alternative accounting practices, such as counter accounts (Tweedie, 2023; Vinnari and Laine, 2017) or independent social audits (Boiral, 2013; Himick and Ruff, 2020), illustrate how it is possible to build accountability mechanisms grounded in social and ecological justice. This perspective also includes eco-centric approaches that call for a redefinition of the accounting subject to include nature and future generations as legitimate stakeholders (Gray and Bebbington, 2000).

The third pathway, symbiotic transformation, refers to progressive reforms within the existing system, often enacted through interaction with the state or the adoption of innovative accounting practices that remain compatible with current institutional frameworks. A prominent example is the triple bottom line approach (Elkington, 1998), which incorporates

economic, environmental, and social dimensions into corporate reporting (Milne and Gray, 2013). However, this strategy carries the risk of co-optation. As Bowen (2014) warns, the discourse of sustainability may be absorbed into managerialism, stripping it of its critical potential and reducing it to a tool of symbolic legitimation rather than meaningful change.

Taken together, these trajectories show that social accounting constitutes a plural and dynamic field, shaped by tensions between radicalism and compromise, autonomy, and institutionalization. Its value lies in the ability to preserve space for imagination and experimentation with accounting practices that advance social justice, sustainability, and the common good.

Despite its transformative aspirations, much of the work in social accounting has historically followed the symbiotic path, seeking to reform conventional accounting from within in order to make it more sustainability oriented. As Gray (2010a) observes, this approach has often avoided confronting the foundational theoretical and institutional assumptions of mainstream accounting. This raises a central question: does the anchoring of social accounting in conventional frameworks offer a pathway for gradual reform, or does it instead constrain its emancipatory potential?

Social accounting's proximity to shareholder capitalism has led Gray to challenge the widely internalized managerial assumption that social and environmental accounting (SEA) is justified only to the extent that it yields benefits for the organization, particularly in terms of competitiveness, reputation, or investor appeal. In his view, this logic reflects an instrumental and self-referential understanding of reporting, one that reduces sustainability to a lever for maximizing economic value for privileged stakeholders, especially shareholders. Gray warns that this instrumental shift risks emptying accounting for sustainability of its transformative function, turning it into a procedural exercise aimed at preserving the status quo. Accounting becomes a neutral act intended to legitimize the firm rather than to challenge existing organizational models or rethink the relationships between the economy, environment, and society.

As an alternative, Gray advocates for a radical reconceptualization of SEA as a political act, one that reinforces transparency, social responsibility, and democratic participation. From this perspective, accounting assumes intrinsic value: it is not merely a tool for generating financial returns but a deliberative space in which the organization engages critically with stakeholders and civil society. The information produced should not only meet regulatory or reputational

demands, but also reflect collective concerns, making visible the trade-offs, responsibilities, and ethical choices that shape organizational action.

This approach is grounded in a plural understanding of value - not only economic, but also environmental, social, cultural, and ethical. According to Gray (2010a), privileging corporate value creation alone undermines the emancipatory potential of sustainability reporting. For this reason, he calls for reimagining SEA as a form of public accountability capable of representing the complexity of organizational impacts and providing an account of the organization's contributions (or failures) in advancing collective well-being.

In this sense, Gray's vision closely aligns with the concept of public value, understood as the relational and systemic outcome of organizational action in accordance with its institutional mandate. Accounting can no longer serve merely as a tool of shareholder capitalism. It must evolve into a language capable of representing what truly matters - quality of life, social justice, territorial resilience, and collective well-being. In other words, a new form of accounting is needed, one that can measure public value and offer the knowledge base required to guide decisions toward equity, sustainability, and the general interest. Only through this transformation can accounting actively contribute to reshaping organizational models in service of a more just and sustainable future.

As illustrated in Figure 4, social accounting constitutes a broad and heterogeneous field that includes a variety of approaches. Among these, environmental accounting emerges as a particularly salient and urgent frontier, especially considering the accelerating ecological crisis and the growing pressure to account for the environmental limits of economic activity.

However, this conceptual expansion has also contributed to growing terminological ambiguity. The overlapping and sometimes interchangeable use of terms such as environmental accounting or sustainability accounting risks generating confusion that may hinder the advancement of research and compromise the clarity needed for educational purposes, particularly when presenting and applying the various frameworks in academic and professional contexts.

Given that this work is primarily concerned with the environmental dimension of accounting, the next chapter will focus on defining environmental accounting as a distinct and autonomous field. Establishing a clear conceptualization is essential not only for ensuring analytical coherence, but also for grounding the empirical analysis in a solid theoretical framework. By clarifying the scope and purpose of environmental accounting, the following chapter lays the foundation for a critical exploration of its potential to support public value creation in the face of today's environmental challenges.

CHAPTER 2 - The Evolution of Environmental Accounting: theoretical pathways and bibliometric evidence

2.1 Environmental accounting: historical overview

The 1970s marked the rise of early attempts to report on non-financial aspects of corporate activity, with an initial focus on the social dimension. Surveys conducted by Ernst & Ernst revealed that, by 1978, approximately 90 percent of Fortune 500 companies were publishing disclosures related to corporate social responsibility, particularly in areas such as pollution control, energy conservation, and equal employment opportunity (Ernst, 1978). In Western Europe, attention was centered more on the relationship between firms and the workforce. In France, for instance, a 1979 regulation required large companies to publish an annual “Bilan Social” reporting on their social performance.

This growing momentum also found resonance in academic and professional circles, where early models of social reporting began to take shape. The American Accounting Association (AAA) engaged with topics such as the environmental consequences of business activity, human resource accounting, and the measurement of social costs. At the same time, professional bodies such as the American Institute of Certified Public Accountants (AICPA) sought to incorporate these emerging issues into the conceptual frameworks of traditional financial accounting. In the United Kingdom, the 1975 publication of “The Corporate Report” by the Accounting Standards Steering Committee, a forerunner to the Accounting Standards Board, called for a shift in reporting to address the needs of users beyond shareholders. It recommended the introduction of new reports, including a value-added statement and an employment report. By the end of the decade, however, interest in social reporting began to decline, particularly in the UK. The election of the Thatcher government in 1979 and its neoliberal orientation led to a significant shift in the public discourse surrounding corporate responsibility, which increasingly prioritized financial efficiency. In this political climate, broader social and ethical considerations were marginalized.

At the same time, environmental concerns were beginning to attract greater institutional and public attention. Toward the end of the 1970s, awareness of the ecological consequences of economic activity grew, sparking the emergence of the first forms of environmental reporting. During the 1980s, academic literature started to expand the scope of the social dimension to

include ecological sustainability. This shift laid the foundation for a new accounting paradigm focused on recognizing and managing environmental limits.

In Italy, a pioneering contribution came from Rusconi (1988), who proposed a structured approach to social reporting (*bilancio sociale*) based on the following criteria: the living and working conditions of employees; the amount of value added generated by the firm; the social evaluation of pollution and the use of non-renewable resources; the external costs and benefits related to consumers, the inclusion of individuals with disabilities or chronic illnesses, the protection of ethnic-linguistic minorities, gender equality, support for structurally unemployed individuals, child protection, knowledge dissemination, and the company's impact on both the physical and cultural environment; and the individual's perspective and quality of life. This framework reflects a broad and integrated view of corporate responsibility, where social and environmental dimensions are understood as essential components of business performance. In the Italian context, shaped by a strong tradition of *Economia Aziendale*, the goal of long-term economic continuity is seen as compatible with the pursuit of positive social and environmental outcomes. This perspective goes beyond the traditional dichotomy between profit and collective responsibility.

It also aligns with the definition provided by the United Nations, which states that companies must be accountable to society, particularly for their use of human and natural resources and for the consequences of their activities on the environment. This concept supports an expanded notion of accountability, one that includes not only economic and financial aspects but also the company's broader impact on ecosystems, natural capital, and community well-being. From this perspective, the traditional social report, originally centered on labor and community relations, can be interpreted as a precursor to environmental accounting, as it anticipates many of the same goals and concerns.

By the late 1980s, environmental concerns had gained prominence in both public policy and academic debate. A particularly influential contribution was the Pearce Report (Pearce *et al.*, 1989), commissioned by the UK Department of the Environment. The report advocated for the use of market-based instruments, such as tax incentives and tradable pollution permits, to promote environmentally responsible corporate behavior. It also emphasized the need to reform national income accounting by incorporating changes in natural capital into economic calculations.

Recognizing the implications of this shift for the accounting profession, the Association of Chartered Certified Accountants (ACCA) commissioned Rob Gray to examine how the profession might respond. The result was his report "The Greening of Accountancy: The

Profession After Pearce”, which explored both theoretical and operational changes required for environmental reporting systems. Gray argued that traditional accounting systems failed to adequately capture environmental impacts. Drawing on systems theory, he demonstrated that these systems provided a partial and market-dependent view of reality. He concluded that true environmental accounting could not be developed within the framework of neoclassical economic thought (Gray, 1990).

This perspective laid the groundwork for a new academic field. In his seminal article “Accounting and Environmentalism” (1992), Gray introduced the concept of natural capital maintenance and asserted that organizations must preserve critical, renewable, and replaceable natural resources alongside manufactured capital. He also proposed sustainable cost accounting, a method for calculating the additional costs that firms would have to bear to restore the environment to its original condition. Gray provocatively claimed that no Western company had ever achieved a truly sustainable profit. This assertion, which challenged the dominant business logic, met with significant resistance, and hindered the practical implementation of sustainable cost accounting. Nevertheless, it underscored the transformative potential of environmental accounting (Gray, 1992).

Over the following years, Gray and a growing number of scholars intensified their efforts to develop social and environmental accounting, often in collaboration with international organizations such as the United Nations. These efforts helped to establish a robust research community known as Social and Environmental Accounting Research (SEAR), supported by dedicated journals, research centers, and conferences. The CSEAR became a global hub for scholars in the field.

The early 2000s marked a period of critical reflection within the SEA community, driven by the aspiration to promote new approaches that could influence public policy and organizational practice. A plurality of perspectives emerged, giving rise to two main strands. One focused on radical change and viewed accounting as a means of social critique. The other took a more pragmatic approach, promoting gradual change through engagement with policymakers and institutions.

To move beyond this polarization, scholars introduced the concept of agonistic pluralism (Dillard and Brown, 2012, 2015). This framework emphasizes the value of dialogue between conflicting perspectives and acknowledges the role of power asymmetries in shaping accounting practices. According to this view, environmental accounting should not only document and measure environmental impacts, but also foster critical debate about collective priorities and help imagine new paths for addressing the global ecological crisis.

This perspective currently dominates the SEA field and has been crystallized in the publication of the *Handbook of Social and Environmental Accounting* (Bebbington *et al.*, 2021), the most comprehensive and systematic contribution to date. The volume defines environmental accounting through multiple lenses:

- As a set of internal processes designed to control and minimize the negative environmental impacts of organizational activity.
- As a means to account for externalities—effects experienced beyond the organizational boundary and not managed internally.
- As a vehicle to increase visibility of environmental consequences within traditional accounting and to assess the influence of environmental disclosures on financial markets.

Together, these perspectives illuminate environmental accounting as a dynamic and multi-faceted domain, one that challenges the epistemological boundaries of conventional accounting and repositions the discipline within the broader context of ecological sustainability and stakeholder accountability.

2.2 Bibliometric analysis

Despite these developments, relatively few studies have critically interrogated the conceptual foundations and boundaries of environmental accounting. Instead, the literature has tended to offer partial or pragmatic definitions, without fully addressing the sources of terminological ambiguity or the theoretical frameworks that underpin these constructs (Milne, 1996; Frey & Meier, 2003). Moreover, environmental accounting is increasingly subsumed under the umbrella of sustainability accounting, particularly in the context of institutionalized reporting initiatives such as GRI, <IR>, SASB, and the new European standards (Laine *et al.*, 2021; Larrinaga and Bebbington, 2021), further contributing to conceptual conflation.

Given these dynamics, a semantic and theoretical clarification of the notion of environmental accounting is both timely and necessary. The lack of a clearly defined conceptual space risks undermining the coherence of academic debate and limiting the effectiveness of accounting practices in addressing the ecological crisis.

To address this gap, the present study undertakes a bibliometric analysis aimed at mapping the boundaries of the environmental accounting research domain. Specifically, the analysis seeks to identify the theoretical and structural perspectives that have shaped the field over time, as well as emerging research trends that offer insight into its future trajectories. This approach

provides a systematic foundation for clarifying the identity of environmental accounting as a distinct area of inquiry, contributing to both conceptual coherence and methodological refinement.

2.2.1 Data Collection

The bibliometric analysis carried out in this study was conducted using the Web of Science (WoS) database. This choice was motivated by WoS's high level of standardisation, extensive multidisciplinary coverage, and low incidence of missing or unstructured data when processed through Bibliometrix. These features make WoS particularly well-suited for bibliometric investigations, ensuring the accuracy, completeness, and replicability of the dataset (Aria *et al.*, 2020).

For this study, the search was conducted using three WoS databases: SCI-EXPANDED, SSCI, and ESCI. These databases are widely used in social sciences due to their structured metadata fields and minimal data cleaning requirements, making them particularly well-suited for bibliometric research (Belfiore *et al.*, 2023; Zupic and Čater, 2015). To conduct the bibliometric survey, the search strategy employed the general keywords: (TS = ("environmental") OR TS = ("sustainability")) AND TS = ("accounting"). While the primary focus of this study is on environmental accounting, the inclusion of the broader term "sustainability" is justified by the significant conceptual overlap and frequent interchangeability of the two terms in academic literature. In fact, several contributions addressing environmental accounting are indexed under the broader label of sustainability accounting, reflecting a terminological fluidity that can obscure the distinctiveness of environmental concerns. Including both terms at this stage allows for a more comprehensive mapping of the research landscape and ensures that relevant studies are not excluded due to variations in terminology. The subsequent phases of the analysis will then focus on disentangling these domains, delineating the specific contours, theories, and conceptual foundations of environmental accounting as an autonomous research field.

On 18 February 2025, a search was conducted on Web of Science (WoS), yielding 23,838 results dating back to 1990. Several exclusion criteria were then applied to refine the dataset.

First, only articles published in English were considered, as English is the dominant language in academic business and management research, ensuring greater accessibility and comparability of studies across different contexts.

Second, only articles classified under Web of Science categories related to Business and Management were included, specifically those in the fields of Business, Business Finance, and Management. This selection ensures that the analysis remains focused on the core disciplines relevant to the research objectives.

The time frame was limited to 2005–2024 to capture the most relevant developments of the past two decades. Prior to 2005, publication volume was minimal (only 55 articles, about 2% of the total), and contributions were largely theoretical and fragmented. Including such a limited and heterogeneous set would have increased variability and weakened the reliability of the co-word analysis, which depends on term recurrence. Focusing on the post-2005 period ensures greater thematic coherence and robustness in mapping the field. The final dataset includes 2,254 articles.

2.2.2 Data Analysis

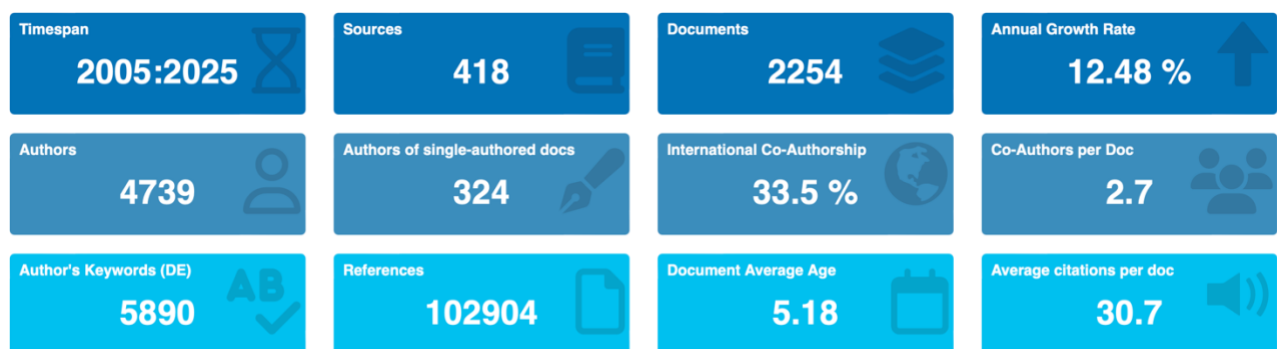
The analysis was conducted using the Bibliometrix R package, leveraging Biblioshiny for an interactive and efficient bibliometric workflow (Aria and Cuccurullo, 2017). Developed in R, Bibliometrix offers robust statistical algorithms, high-quality numerical routines, and advanced visualization tools, making it a reliable choice for scientometric analysis. Biblioshiny further enhances usability, enabling structured data processing and network visualization.

As depicted in Figure 1, the dataset spans from 2005 to 2025 and comprises 2,254 documents sourced from 418 different publication venues. The dataset includes articles formally dated 2025 but accepted and published online in 2024. As Web of Science indexes early-access publications as valid contributions, excluding them would risk misrepresenting recent research trends. Retaining these articles ensures the dataset accurately reflects research developments up to 2024. To maintain transparency, their inclusion was carefully reviewed to prevent duplication.

The field has experienced significant growth, with an annual increase of 12.48% in research output, reflecting a rising academic interest in the topic. The analysis includes contributions from 4,739 authors, among whom 324 have published single-authored documents. However, most studies involve collaboration, with an average of 2.7 co-authors per document and 33.5% of publications resulting from international co-authorship, indicating a strong degree of global research engagement. The dataset incorporates 5,890 author-provided keywords and references a total of 102,904 sources, demonstrating the extensive scholarly foundation of the analyzed

literature. The average age of documents is 5.18 years, indicating that the field is relatively dynamic but still shaped by earlier contributions. This metric, automatically calculated by Bibliometrix, measures the mean number of years between each article’s publication and the year of analysis (2025). It is relevant because it helps assess the temporal distribution of influential research. A lower value would suggest a rapidly evolving field dominated by recent work, while a higher value implies that older publications continue to play a central role. In this case, the result reflects a balanced mix of emerging and foundational studies. Furthermore, the average number of citations per document is 30.7, underscoring the considerable impact and relevance of the studies within the academic community. These indicators highlight the progressive expansion of the field, the interdisciplinary and collaborative nature of research, and the high level of engagement and influence within scholarly discourse.

Figure 5. Dataset Main Information. Source: Bibliometrix.



Bibliometric techniques are generally divided into performance analysis and science mapping. While the former evaluates research productivity, the latter explores structural relationships within the field (Donthu *et al.*, 2021). This study adopts science mapping, specifically co-word analysis, to examine the conceptual structure of environmental accounting (Baker *et al.*, 2021; Cobo *et al.*, 2011; Ramos-Rodríguez and Ruíz-Navarro, 2004).

Co-word analysis maps the co-occurrence of key terms to reveal thematic patterns. Keyword Plus, an algorithmically generated set of terms based on cited references (Garfield and Sher, 1993), was used to ensure replicability and uncover broader trends. However, due to potential ambiguity, terms were grouped into macro-keywords following prior studies (e.g. Furrer *et al.*, 2008; Cuccurullo *et al.*, 2016; Saggese *et al.*, 2016). From 1,497 keywords—81% of which appeared only once—76 refined macro-keywords were identified, each occurring at least five times.

A co-word network was then constructed, with nodes representing keywords and edges their co-occurrence. The Walktrap algorithm was applied to detect thematic clusters, enabling the identification of conceptual communities (Lancichinetti *et al.*, 2009).

This integrated approach offers a systematic mapping of environmental accounting's intellectual landscape, highlighting its thematic evolution and conceptual foundations.

To further investigate how the theoretical foundations of the field have evolved over time, the analysis distinguishes between two distinct periods: 2005–2015 and 2016–2024. This segmentation enables an assessment of the dominant theoretical frameworks guiding research within each timeframe. The choice of two sub-periods was guided by the need to ensure conceptual continuity and sufficient recurrence of keywords within each interval. Subdividing the timeline further would have generated sparse co-word networks, compromising the robustness of thematic comparisons. The year 2015 was selected as a turning point because it represents a critical moment of institutional consolidation for sustainability discourse. First, it coincides with the publication of the EU Directive 2014/95 on non-financial reporting, which member states were required to transpose by 2016. Second, 2015 marks the launch of the United Nations 2030 Agenda for Sustainable Development, which significantly amplified global interest in ESG issues and stimulated a surge in academic and regulatory attention toward sustainability. The combination of these two milestones justifies the division and highlights 2015 as a key year in the evolution of the field.

In this chapter, a classification framework is used to clarify the evolution of environmental accounting, highlighting its theoretical foundations and emerging research directions. As shown in Table 1, the literature was coded along two analytical dimensions, relevant for delineating the epistemological and structural contours of environmental accounting: Theoretical and Structural Perspectives and Emerging Research Trends.

The first dimension, Theoretical and Structural Perspectives, captures the key conceptual frameworks and methodological approaches that have been employed to study environmental accounting over time. Mapping these contributions is essential to understanding how the field has been constructed theoretically, which interpretative lenses have shaped its development, and whether it has maintained a distinctive identity or has been increasingly absorbed into broader sustainability discourses.

The second dimension, Emerging Research Trends, highlights the thematic evolution of the field in response to new environmental challenges, regulatory transformations, and societal demands. Analyzing these trajectories allows to trace how the field has responded to external

pressures and internal critique, and to assess whether environmental accounting is consolidating as a distinct scholarly domain or being redefined through convergence with adjacent fields. Moreover, this perspective is useful for identifying possible future directions and unresolved tensions that may shape the next phase of research in environmental accounting.

Together, these dimensions provide a structured basis for clarifying the intellectual boundaries of environmental accounting, offering both a retrospective and prospective view on its theoretical consolidation and academic relevance.

Table 1. Coding Framework.

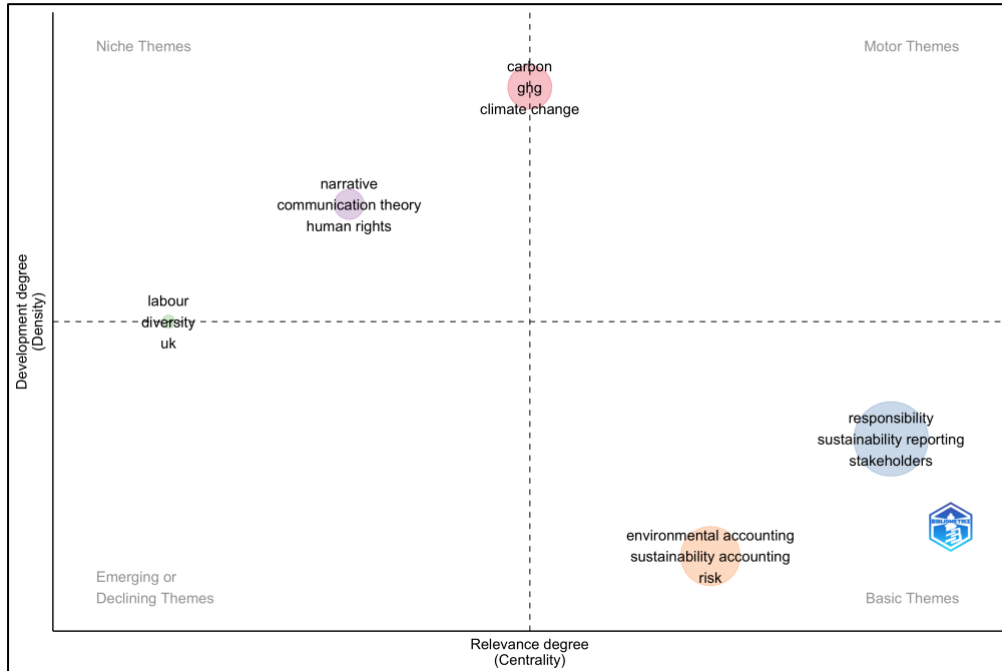
Category	Definition
Theoretical and Structural Perspectives	<ul style="list-style-type: none"> - Identifying theories and research methods applied. - Mapping key frameworks. - Determining whether they share common or distinct theoretical lenses.
Emerging Research Trends	<ul style="list-style-type: none"> - Tracking new themes, policy shifts, and regulatory changes. - Examining integration vs separation trends in recent research. - Identifying future directions in governance, accountability, and reporting.

2.2.3 Main themes and clusters

Applying the selected clustering algorithm to the network of macro-keywords can highlight different themes that make up the domain. Bibliometrix can represent each theme on a plane called Thematic Map (Cobo *et al.*, 2011), which consists of two dimensions: centrality, indicating the relevance of the topic; and density, measuring the degree of development of the topic. In this way, four categories of themes are created (Cahlik, 2000; Aria *et al.*, 2020): Niche Themes (very developed but not very relevant, i.e. isolated within the research field), Motor Themes (developed and relevant), Emerging or Declining Themes (little developed and not very relevant) and Basic Themes (very relevant but not very developed). Thematic Map covers the

entire time horizon considered in the analysis and is presented in Figure 2. It is based on the selected macro-keywords.

Figure 6. Thematic Map. Source: Bibliometrix.



Each bubble represents a network cluster. The labels are given by macro-keywords with the highest occurrence value. The size of each bubble is proportional to the cluster word occurrences. The position of the bubbles is determined by their degree of centrality and density. The thematic map provides a comprehensive overview of the research landscape, highlighting the core, specialized, and evolving themes within the field of environmental accounting. Given that this study aims to explore the distinctions between this domain, the positioning of key themes within the map is particularly relevant.

In the basic themes quadrant, environmental accounting emerges as a central yet still conceptually evolving area, positioned alongside sustainability accounting, risk, sustainability reporting, responsibility, and—crucially—stakeholders. The prominence of the stakeholder dimension underscores the growing recognition that environmental accounting must engage with a plurality of actors affected by or influencing environmental impacts. This alignment highlights the field’s gradual shift from a narrow, compliance-based focus toward more inclusive and participatory forms of accountability. The distinct positioning of environmental and sustainability accounting within the same quadrant further reflects their differentiated scope: while sustainability accounting encompasses a broad socio-environmental agenda,

environmental accounting is more specifically oriented toward ecological issues and measurement practices. This analytical proximity, however, does not imply conceptual convergence. On the contrary, it suggests the need to clarify the epistemological foundations and stakeholder-related implications of environmental accounting as a research domain in its own right—an endeavor that necessarily calls for deeper engagement with stakeholder theory and its interpretative potential.

Located in the niche themes quadrant, carbon, GHG, and climate change display high internal density but limited centrality. This suggests a well-developed thematic structure that, to date, remains somewhat peripheral to the core accounting discourse. However, these themes are increasingly connected to key areas of environmental accounting and are likely transitioning towards motor themes. Their growing prominence reflects the intensifying global focus on climate-related challenges and the development of technical tools such as carbon accounting, which are becoming integral to sustainability measurement. Additionally, the presence of narrative, communication theory, and human rights in a moderately central position highlights the growing intersection between sustainability accounting and discourse analysis, reinforcing the idea that sustainability reporting serves as a tool for shaping corporate narratives, beyond just regulatory compliance.

No clusters appear in the motor themes quadrant, typically occupied by topics with both high centrality and density. This absence suggests that the field currently lacks a dominant, cohesive, and fully developed research agenda that drives innovation and bridges multiple sub-domains. The relatively fragmented distribution of topics reinforces the need for further theoretical consolidation and integration, especially as the field continues to navigate tensions between technical measurement and normative expectations.

Similarly, the absence of themes in the emerging or declining quadrant suggests that no conceptual areas within the field have experienced a significant decline. This can be attributed to the relatively recent institutionalization of environmental accounting as academic domains, which continue to expand and diversify rather than contract or lose relevance.

To gain deeper insights into these dynamics, the subsequent section presents a co-word network analysis that traces the evolution of thematic structures over two distinct periods (2005–2015 and 2016–2024). This segmentation aligns with the trajectory of annual scientific production, as illustrated in Figure 1. The first period reflects the formative stage of environmental accounting research, characterized by gradual growth and consolidation, whereas the second marks a phase of accelerated expansion, driven by international policy milestones such as the

UN 2030 Agenda and the Paris Agreement, and further intensified by the post-2020 global context (Aviv-Reuven and Rosenfeld, 2021; Lodhia *et al.*, 2021).

2.2.4 *The evolution of the two domains over time*

The period from 2005 to 2015 establishes the foundations for the development of environmental accounting research, with a notable increase in research output from 2008 onwards.

The co-occurrence network reveals a fragmented research landscape, where sustainability reporting and environmental/sustainability accounting emerge as distinct areas.

The financial crisis played a key role in stimulating discussions on corporate responsibility and sustainability, leading to diversification in accounting approaches (Freeman and Auster, 2011). In this period there is a terminological distinction between sustainability reporting and environmental/social/sustainability accounting. The reporting primarily concerns the communication of sustainability performance to stakeholders, whereas accounting focuses on measurement methodologies for assessing sustainable impact (Jones, 2010).

The accounting-related cluster highlights correlations between social, environmental, and sustainability accounting, with Social and Environmental Accounting (SEA) emerging as the dominant research stream (Owen, 2008; Parker, 2014). However, a clear terminological distinction between these forms of accounting is not established. As Gray (2010b, p. 12) states, “social accounting as I use the term here should be taken to embrace social, environmental, ethical, responsibility and sustainability accounting, accountability, reporting, auditing, investment, and costing and management”. This period is marked by a lack of conceptual separation, with environmental, social, and sustainability accounting appearing interchangeable in the literature.

Environmental accounting is embedded in a broader institutional and regulatory framework, yet rather than forming distinct correlations with other accounting concepts, it exhibits a more interdisciplinary nature, particularly in its connections with environmental science topics, such as climate change and greenhouse gas (GHG) emissions. Despite its growing link to environmental regulation and policy, research in this area remains centered on regulatory constraints, with limited evidence of its capacity to drive substantive organizational transformation (Milne *et al.*, 2009).

The co-occurrence network highlights a plurality of theoretical and empirical approaches. Legitimacy theory dominates sustainability reporting research, suggesting that organizations strategically use disclosure to maintain legitimacy and mitigate reputational risks, especially

when their environmental performance is weak (Cho and Patten, 2007; De Villiers and Van Staden, 2006; Perego and Kolk, 2012). Green policies and environmental disclosure are often seen as responses to external pressure rather than genuine commitments to sustainability (Cho *et al.*, 2006). Critical perspectives challenge this strategic use of disclosure, arguing that sustainability reporting primarily serves as a legitimization tool rather than a transformative mechanism (De Villiers *et al.*, 2014; Spence *et al.*, 2010; Tinker and Gray, 2003). These critiques highlight the way in which sustainability is often rhetorical rather than systemic (Hopwood *et al.*, 2005; Söderbaum, 2007).

Institutional theory dominates the accounting cluster and is widely applied to corporate social responsibility and accountability (Campbell, 2007; Parker, 2005). Campbell (2007) identifies key institutional mechanisms, such as regulation, independent monitoring, industry norms, and stakeholder dialogue, that mediate economic conditions and shape corporate behavior. These mechanisms influence corporate reporting and accountability practices, reinforcing how accounting functions not only as a technical tool but also as an institutionalized mechanism that reflects broader societal expectations of corporate responsibility (Scapens, 2006).

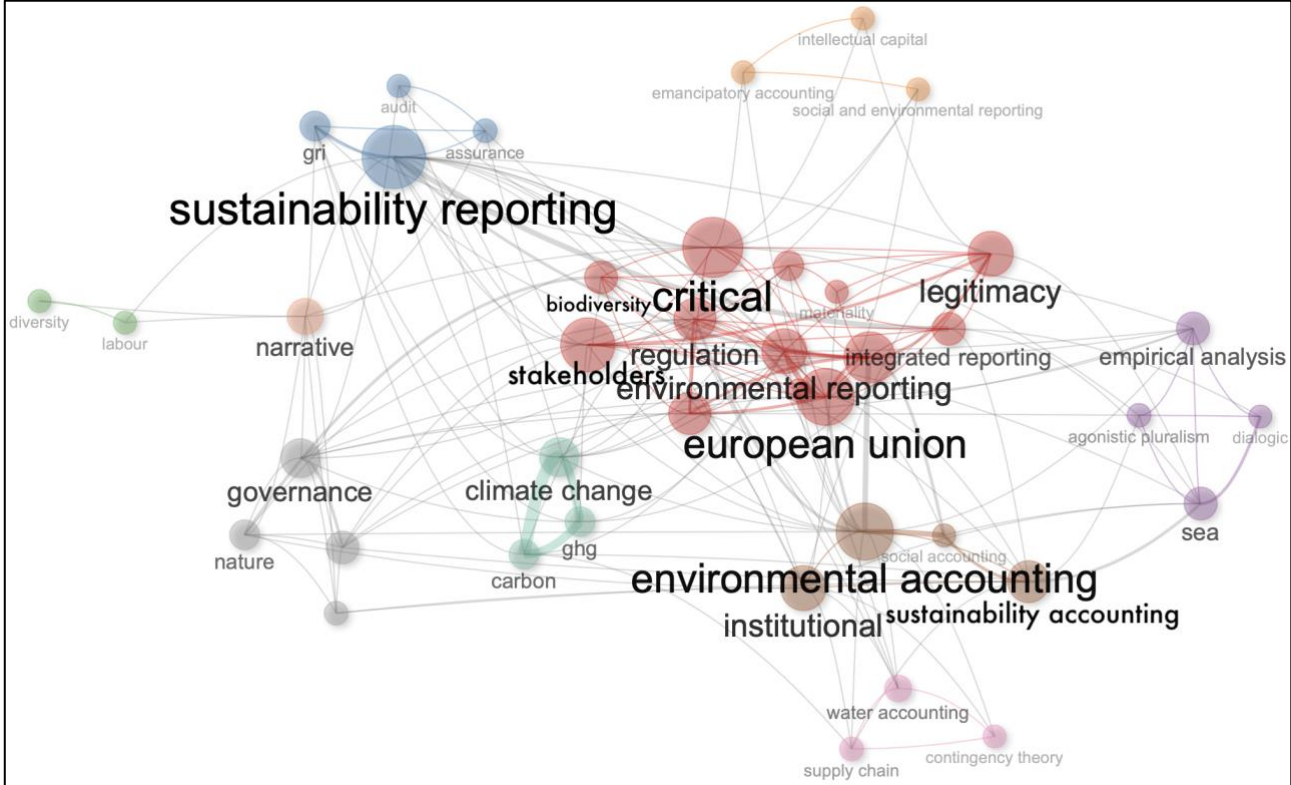
This period also sees the emergence of agonistic pluralism, further reflecting tensions in social and environmental accounting (Dillard and Brown, 2012, 2015). The research landscape is divided between critical theorists, who argue that sustainability reporting serves greenwashing purposes (Gray *et al.*, 2009; Gray and Laughlin, 2012), and reformists, who advocate for incremental change through engagement with policy and corporate actors (Bebbington *et al.*, 2007; Burritt and Schaltegger, 2010). Dialogic accounting emerges as a potential bridge between these opposing perspectives, fostering more inclusive debates on sustainability (Brown and Dillard, 2013; Ruiz and Laine, 2013).

Therefore, the theoretical landscape remains highly fragmented, with critical theory, legitimacy theory, and stakeholder theory dominating sustainability reporting research, while institutional theory is central in the accounting cluster, with agonistic pluralism gaining recognition as an alternative perspective. These competing frameworks highlight the contested nature of sustainability in accounting research, reinforcing concerns about the limitations of voluntary disclosure mechanisms and their effectiveness in ensuring corporate accountability (De Villiers *et al.*, 2014).

Emerging themes during this period include climate change and carbon accounting (Gibassier and Schaltegger, 2015; Kolk *et al.*, 2008; Larrinaga, 2014), water accounting and sustainability in supply chains (Burritt and Schaltegger, 2014; Burritt *et al.*, 2011; Spence and Rinaldi, 2014). The terms diversity and labor also show potential as emerging research trends (Liao *et al.*, 2015;

Muttakin and Subramaniam, 2015), though they do not yet form a well-defined research network. Similar patterns can be observed in intellectual capital (Dumay and Cai, 2015; Hidalgo *et al.*, 2011) and emancipatory accounting (Alawattage and Wickramasinghe, 2009; McNicholas and Barrett, 2005), which, while gaining scholarly attention, remain peripheral to the core accounting discourse.

Figure 7. Thematic Evolution in the first period (2005-2015). Source: Bibliometrix.



The period from 2016 to 2024 marks a phase of consolidation and theoretical maturation in the field of environmental accounting, coinciding with the institutionalization of the UN 2030 Agenda and the growing urgency of the ecological crisis. During this phase, the co-word network reveals a clearer and more structured thematic configuration, reflecting the increasing relevance and specificity of environmental accounting as a distinct research domain.

Environmental accounting has become progressively oriented toward examining how organizations account for, manage, and disclose their environmental impacts, and how environmental performance affects both internal decision-making and external perceptions (Marrone *et al.*, 2020). This field has grown in close connection with institutional work (Lawrence and Suddaby, 2006), exploring the processes through which environmental practices

and norms are created, maintained, or transformed, and with structuration theory (Giddens, 1984), which explains how environmental accounting mediates between agency and structural constraints within organizations.

A particularly prominent research stream is carbon accounting, which supports organizations in quantifying, monitoring, and reducing greenhouse gas emissions (Charnock *et al.*, 2021; Gibassier *et al.*, 2020; He *et al.*, 2022). This enables the alignment of internal practices with broader climate objectives and sustainability targets (Bebbington *et al.*, 2021). Accounting is thus understood as a tool not only for control and measurement, but also for enabling organizational change and promoting transitions toward low-carbon and ecologically responsible business models (Baker *et al.*, 2023).

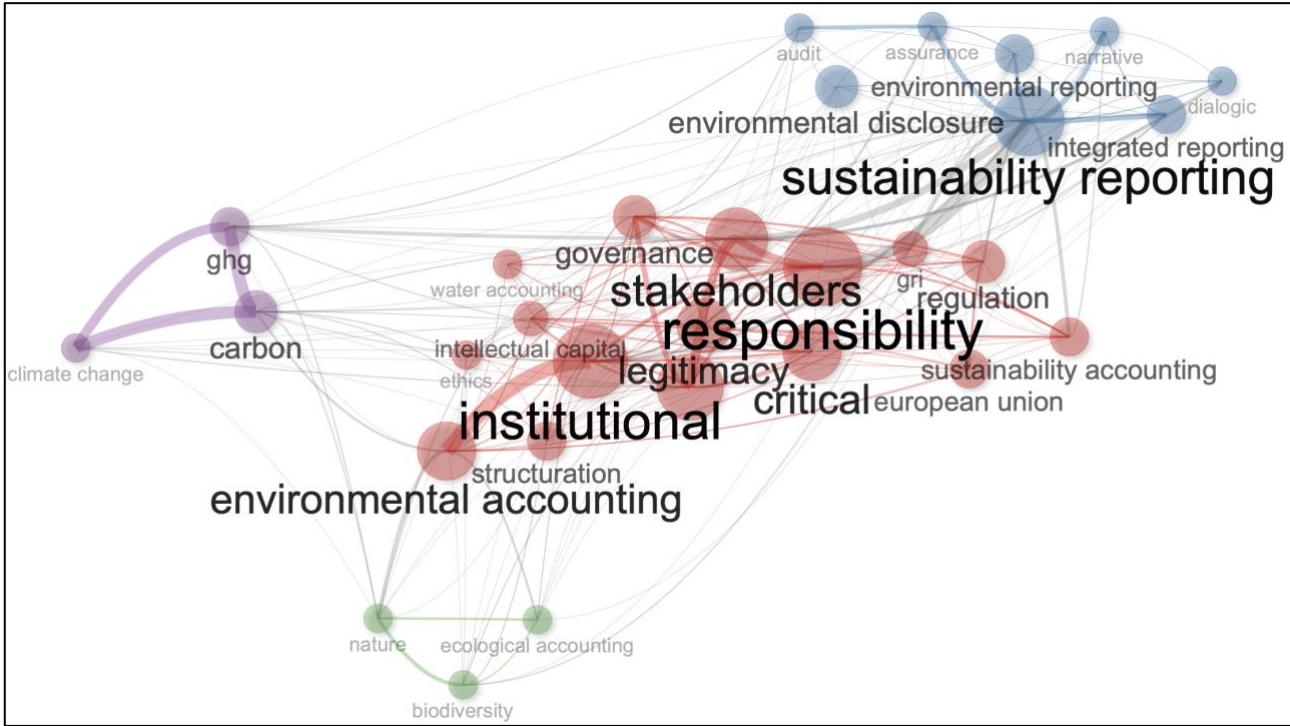
Within environmental accounting, several emerging research areas are gaining attention, including biodiversity accounting (e.g. Cuckston, 2021; Maione *et al.*, 2024; Maroun and Atkins, 2021), ecological accounting (e.g. Atkins *et al.*, 2023; Ogilvy and Vail, 2018; Zhou *et al.*, 2016), water accounting (e.g. Chandra *et al.*, 2024), and extinction accounting (e.g. Atkins *et al.*, 2018; Kopnina *et al.*, 2024; Roberts *et al.*, 2021). Such developments reflect a broadening of the field beyond carbon emissions, expanding its scope to encompass multiple dimensions of ecological degradation and environmental stewardship.

Theoretical developments during this period indicate a progressive consolidation of institutional theory, reinforcing its dominance in environmental accounting research (Del Gesso and Lodhi, 2024). While legitimacy theory continues to shape discussions on sustainability reporting, its role has become increasingly secondary to institutional perspectives (Ali *et al.*, 2021; L'Abate *et al.*, 2023). The shift towards compliance-based frameworks reflects the growing importance of external governance mechanisms in sustainability accounting. At the same time, agonistic pluralism continues to influence sustainability discourse, encouraging debate among scholars with differing ideological perspectives (Manetti *et al.*, 2021). However, while initially aimed at bridging these divisions, agonistic pluralism has increasingly aligned with dialogic accounting, which is rooted in critical theory and highlights the contested nature of sustainability reporting (Dillard and Vinnari, 2019; Grossi *et al.*, 2021). This approach challenges the assumption that greater disclosure leads to responsible corporate behavior, arguing instead that reporting practices have reinforced shareholder-oriented models without fundamentally altering corporate decision-making. Within this context, Critical Dialogic Accounting and Accountability (CDAA) has emerged as a novel approach, emphasizing the role of counter-accounting in fostering democratic contestation and social change (Brown and Dillard, 2021; Tanima *et al.*, 2024). CDAA, drawing on dialogic and agonistic perspectives,

views accounting as an inherently political tool, capable of challenging neoliberal hegemony, mobilizing diverse publics, and constructing alternative social realities.

In sum, the recent evolution of environmental accounting is characterized by a dual dynamic: the consolidation of core themes such as carbon emissions and institutional responses, and the expansion into emerging areas that capture the complexity of environmental issues. Together, these trajectories signal the development of a more robust and diversified field, capable of addressing the systemic challenges posed by the Anthropocene.

Figure 8. Thematic Evolution in the second period (2016-2024). Source: Bibliometrix.



2.3 Conceptual Synthesis: Environmental Accounting as a Public Value Enabler

The keyword co-occurrence network reveals the central position of *environmental accounting* within a dense system of thematic connections, suggesting its role as a conceptual and operational hub for addressing contemporary environmental challenges through accounting. Its proximity to key terms such as *stakeholders*, *responsibility*, and *institutional* underscores its embeddedness within a broader social and institutional context, where accounting practices are expected to respond to societal demands for transparency, legitimacy, and accountability. In particular, the prominence of the term *stakeholders* signals the shift from

a shareholder-centric view of value towards a more pluralistic approach, where multiple actors—public institutions, communities, ecosystems—are recognized as legitimate recipients of accounting information and beneficiaries of value creation processes.

This positioning suggests that environmental accounting does not merely serve a technical function of measurement or disclosure. Rather, it emerges as a mediating device that translates ecological impacts into information that can be used to inform organizational decisions, foster public deliberation, and support institutional transformation. Through its links with the cluster of *carbon*, *GHG*, and *climate change*, environmental accounting contributes to the visibility and manageability of environmental risks. At the same time, its connection with more recent themes—such as *biodiversity*, *nature*, and *ecological accounting*—highlights the expanding scope of the field, which increasingly incorporates biocentric considerations and engages with non-human and intergenerational forms of value.

The integration of environmental accounting with clusters related to *sustainability reporting* and *disclosure* further reinforces its communicative function. Accounting, in this sense, becomes a tool not only for control or compliance, but for enabling dialogue among institutional actors, shaping public expectations, and aligning corporate strategies with ecological and social priorities. By bridging the gap between environmental impacts and institutional logics, environmental accounting supports the co-construction of public value—understood as a collectively defined and contextually grounded concept that encompasses ecological integrity, social equity, and democratic accountability.

In sum, the map reveals that environmental accounting acts as an enabler of public value, not only by quantifying environmental phenomena, but by embedding them within frameworks of institutional responsibility and stakeholder engagement. Its potential lies in making the ecological dimension of public value both visible and actionable, contributing to the transformation of accounting from a tool of private calculation to an instrument of collective governance.

The bibliometric analysis revealed a broad and articulated set of keywords, which the literature groups into five distinct thematic clusters. These are not merely semantic groupings but represent the multiple dimensions through which environmental accounting contributes to the creation of public value, offering a conceptual map of its underlying value structures.

The first cluster centers on environmental and ecological values, including concepts such as environmental sustainability, natural capital, biodiversity, planetary boundaries, and the rights of nature. These keywords reflect a biocentric and intergenerational perspective of value,

positioning environmental accounting as a tool for protecting ecosystemic balance and representing the needs of environmental regeneration. The literature emphasizes the role of measurement and reporting in reinforcing ecologically informed decision-making (Jones and Solomon, 2013; Obst, 2015; Russell *et al.*, 2017; Schaltegger, 2018).

The second cluster relates to civic, public, and democratic values, including accountability, transparency, trust, participation, and the common good. Here, environmental accounting emerges as a technical-political device that renders the environmental impacts of organizations visible, debatable, and contestable, thereby enhancing democratic oversight and public deliberation. Scholarly contributions in this area show how accounting practices can strengthen institutional legitimacy and public trust (Landi *et al.*, 2022; Tregidga and Laine, 2022).

The third cluster includes economic values, such as value creation, value-for-money, performance, and measurability. Environmental accounting expands the boundaries of conventional economic metrics by incorporating environmental externalities into decision-making processes. This highlights the potential of accounting to reconcile economic rationality with ecological responsibility, promoting more holistic forms of value assessment (Deb *et al.*, 2022; Gray, 2006; Nicholls, 2020; Tommasetti *et al.*, 2020).

The fourth cluster focuses on ethical and moral values, such as environmental ethics, professional ethics, and legitimacy. In this view, environmental accounting is not a neutral technique but a normative practice, capable of guiding organizations toward responsible behavior, ecological integrity, and intergenerational justice (Chen and Roberts, 2010; Owen, 2008; Schaltegger and Burritt, 2017; Zhang-Debreceeny *et al.*, 2009).

Finally, the fifth cluster encompasses social values, including human rights, inclusion, decent work, and environmental justice. The literature demonstrates how environmental accounting can serve as a tool for social recognition, emancipation, and cohesion, particularly through instruments such as social reporting and the analysis of the distributive impacts of environmental policies (Ball, 2007; Hazelton, 2013; McPhail and Ferguson, 2016).

Table 2. Values Reflected in Environmental Accounting Literature.

Environmental Values	Civic Values	Economic Values	Ethical/Moral Values	Social Values
- Environmental sustainability	- Accountability	- Value creation	- Environmental ethics	- Human rights
- Natural capital	- Transparency	- Value for money	- Professional ethics	- Inclusion
- Biodiversity	- Trust			- Decent work
	- Participation			

- Planetary boundaries - Rights of nature	- Common good	- Performance	- Legitimacy	- Environmental justice
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The bibliometric analysis served not only to map the field’s conceptual evolution, but also to systematically identify the diverse value dimensions that environmental accounting engages with. This step was crucial to move beyond generic definitions of sustainability and capture the concrete ways in which accounting contributes to the creation of public value. By clustering keywords into five thematic domains—environmental, civic, economic, ethical, and social—the analysis illuminated how environmental accounting intersects with broader societal concerns, from biodiversity and planetary boundaries to accountability, inclusion, and justice. These clusters provide a structured vocabulary for articulating the public value potential of environmental accounting, offering analytical precision and depth to what are often abstract normative claims. Moreover, they enrich and expand the value pyramid introduced by Deidda Gagliardo (Chapter 1), which differentiates between intangible, economic, social, and public value. In particular, environmental accounting helps to specify the ambiguous category of “intangible value” by grounding it in relational, moral, and ecological dimensions, while clarifying the transition from economic to public value through the integration of environmental and social concerns into organizational practices.

This thematic articulation finds a conceptual counterpart in Hendrik Vollmer’s proposition of full-tax accounting, which calls for rethinking accounting beyond its conventional focus on efficiency, cost, and financial performance. Drawing on Latour’s *Politics of Nature*, Vollmer envisions full-tax accounting as an ecological and diffused form of accountability, aimed at representing nonhuman voices and matters of care—objects and relationships that deserve attention—through multimodal formats and alternative channels. This form of accounting is not limited to professional accountants but involves a diverse array of external actors—academics, activists, journalists, and citizens—who construct environmental accounts through texts, images, videos, and social media, thereby granting ecological concerns greater visibility and political relevance. The dual purpose of these practices is to contribute to ecological reconstitution while also challenging the modern separation between nature and society, effectively shifting the center of accountability from financial statements to the planetary biosystem.

In an era of diffused publicness, where collective values are increasingly shaped within civic, digital, and transnational spaces rather than confined to formal institutions, environmental accounting becomes a critical tool for translating abstract values—such as environmental justice, sustainability, and inclusion—into concrete decisions and everyday actions. As emphasized by Steccolini (2018), accounting can provide the operational infrastructure through which these emergent values are made actionable: it offers the routines, metrics, and procedural tools that translate general societal aspirations (such as environmental justice or intergenerational equity) into measurable outcomes, budgetary priorities, and managerial decisions. In this light, environmental accounting acts as a critical interface between plural social values and public action. Vollmer's full-tax accounting represents one of the most advanced expressions of this potential: by incorporating the value clusters identified in the bibliometric analysis into performative and communicative practices, it redefines accounting as a means of constructing and contesting public value in an era of ecological crisis. Ultimately, environmental accounting is not only about measuring environmental impacts—it is a means of redefining what counts as valuable, and for whom, in a planetary public sphere.

CHAPTER 3 - Accounting for the Environment and the Public Good: Theoretical Perspectives

This chapter explores the main theoretical and methodological contributions that have shaped the field of environmental accounting. Particular attention is given to four influential perspectives—legitimacy theory, stakeholder theory, critical theory, and institutional theory—as well as to the research methodologies most frequently employed in this domain. It is important to note, however, that the literature examined here does not explicitly address the question of public value. This should not be seen as a limitation but rather as a deliberate focus: the aim of the chapter is to clarify the theoretical mechanisms and research dynamics through which environmental accounting practices emerge, diffuse, and become institutionalized. These insights provide the necessary conceptual and methodological foundation for next chapter, where the discussion will turn to the extent to which environmental accounting may operate as an enabler of public value creation.

3.1 Legitimacy Theory

Organizational legitimacy can be defined as the condition in which the values of an entity are consistent with those of the broader social context in which it operates. Legitimacy is not absolute but relative to time, place, and the social system, and it is shaped as a collective perception that an entity's actions are “desirable, proper, or appropriate” within a socially constructed framework of norms, values, and beliefs (Suchman, 1995). In this sense, legitimacy represents a critical resource for organizational survival (Dowling and Pfeffer, 1975; O'Donovan, 2002), granted by society and sought through legitimation strategies, often grounded in disclosure practices. What matters is not necessarily an organization's actual conduct, but rather how such conduct is perceived by society, to the point that an organization may diverge from social norms yet maintain legitimacy if such divergence goes unnoticed (Suchman, 1995). Legitimacy is thus a socially constructed resource that depends on collective perceptions and cultural norms, varies across time and context, and reflects judgments of appropriateness that can range from highly legitimate to highly illegitimate (Dowling and Pfeffer, 1975; Näsi *et al.*, 1997).

According to Deegan (2019), legitimacy theory can be summarized as a positive, systems-oriented perspective in which the key resource is organizational legitimacy. It comprises both

a managerial and an institutional branch, with most social and environmental accounting research drawing on the former, and it derives from the bourgeois tradition of political economy, which typically assumes a pluralistic society. These aspects will be discussed in more detail below.

Legitimacy theory has been widely applied in social and environmental accounting research to explain why firms undertake specific actions, such as disclosing environmental or social information. It is not a prescriptive theory but a positive one, seeking to describe and predict managerial behavior (Gibassier and Unerman, 2021). It is often framed within a systems-oriented perspective, in which organizations both influence and are influenced by the social environment, and survival depends on how their conduct is perceived by other actors in that system (Suchman, 1995). Within this framework, accounting and reporting function as tools through which management seeks to shape perceptions and secure legitimacy (L'Abate *et al.*, 2023; Lai *et al.*, 2014). The literature generally distinguishes two main approaches: the strategic perspective, which emphasizes managerial actions to manipulate symbols and secure social approval, and the institutional perspective, which highlights how sectoral dynamics and cultural pressures transcend the control of individual organizations (Suchman, 1995). Most environmental accounting studies have developed within the strategic perspective, demonstrating how firms use disclosure to legitimize themselves within their social context, though some contributions extend the analysis to show how legitimacy theory can also explain the legitimation of broader institutions and processes (Archel *et al.*, 2009).

Legitimacy theory has its intellectual roots in political economy theory, which frames economic activity as inseparable from its political, social, and institutional context (Deegan, 2019). The political economy perspective emphasizes power struggles and social conflicts and interprets accounting reports as social, political, and economic documents that contribute to sustaining institutional arrangements and interests (Guthrie and Parker, 1989). From this standpoint, organizations have no inherent right to resources but exist only to the extent that society grants them legitimacy. Political economy theory itself has two strands: the classical tradition, rooted in Marxist thought, which focuses on structural inequality and class conflict, and the bourgeois tradition, which assumes a pluralistic society and tends to explain disclosure practices as tools to maintain legitimacy without challenging class relations (Gray, 2010a; Gray *et al.*, 1995). Legitimacy theory aligns primarily with the bourgeois tradition, and it is precisely its limited engagement with conflict and inequality that has drawn criticism from critical accounting scholars.

A central premise of legitimacy theory is that organizations can continue to operate only to the extent that they retain the support of the community, support that depends on being perceived as acting in accordance with societal expectations. Within the environmental accounting literature, this relationship has often been framed in terms of a “social contract” between organizations and society, whereby survival is threatened if the organization is perceived to have violated this implicit agreement (Gibassier and Unerman, 2021). Such breaches may manifest in reduced consumer demand, withdrawal of labor and capital by suppliers, or regulatory action spurred by public pressure. The social contract, however, is a theoretical construct: managers interpret it differently depending on their understanding of societal expectations, which explains why disclosure and accountability practices vary across organizations. Explicit terms of the contract may be reflected in legal requirements, while implicit terms embody broader social norms that are not codified in law (Gray *et al.*, 1996). Because legal systems are slow to adapt, internally inconsistent, and sometimes unable to capture socially contested practices, there is often an imperfect alignment between law and societal expectations (Dowling and Pfeffer, 1975). For this reason, legitimacy theory has become central in environmental accounting, offering a framework to explain how reporting practices are used by organizations to negotiate, maintain, or restore alignment with the evolving terms of the social contract (Crossley *et al.*, 2021; Qian *et al.*, 2021).

Much of the research in social and environmental accounting drawing on legitimacy theory has examined how organizations respond to legitimacy-threatening events. From the late 1980s onward, as social and environmental disclosures in annual reports became more widespread, scholars sought to explain these voluntary practices as legitimation strategies aimed at gaining, maintaining, or repairing legitimacy (O’Donovan, 2002; Suchman, 1995). The literature generally distinguishes three scenarios: the acquisition of legitimacy, necessary when firms enter new domains and face the “liability of newness” (Ashforth and Gibbs, 1990); the maintenance of legitimacy, considered comparatively easier and tied to anticipating shifts in social expectations while safeguarding past achievements (Suchman, 1995); and the repair of legitimacy, typically reactive responses to unforeseen crises, often resembling acquisition strategies but with an urgent, crisis-management orientation (Elsbach and Sutton, 1992; O’Donovan, 2002). Overall, the application of legitimacy theory demonstrates that disclosure practices are employed not merely to inform but primarily to shape perceptions and manage social expectations, thereby preserving the social approval essential for organizational survival (Scaletti *et al.*, 2025).

3.2 Stakeholder Theory

Legitimacy theory shares important affinities with stakeholder theory, as both are widely employed in social and environmental accounting research. From a managerial perspective, stakeholder theory highlights how organizations tend to respond primarily to the demands of those groups that control critical resources—the so-called “powerful stakeholders”—while paying less attention to groups with limited influence (Ullmann, 1985). In this view, disclosure becomes a strategic tool for securing stakeholder support, shaping or even manipulating expectations (Gray *et al.*, 1996). Both theories conceptualize organizations as embedded in a broader social system (Deegan and Blomquist, 2006), yet they differ in focus: legitimacy theory refers to the “social contract” with society at large, whereas stakeholder theory narrows the analysis to specific groups, explicitly recognizing the role of power in shaping organizational choices.

Stakeholder theory is one of the most influential conceptual frameworks in management and accounting, combining both managerial and ethical dimensions. Originally introduced by Freeman (1984) and later developed by Parmar *et al.* (2010), it rests on four key premises. First, firms are not isolated entities but networks of relationships among multiple stakeholders, defined as “any group or individual who can affect or is affected by an organization” (Freeman, 1984, p. 46). Second, the central task of management is to create value for stakeholders by aligning their interests and generating mutual benefits rather than merely resolving conflicts. Third, stakeholder theory advances the integration thesis, which posits that business decisions are inherently ethical, and ethical decisions have economic implications; they should not be seen as separate domains but as integrated aspects of value creation (Phillips *et al.*, 2003). Finally, businesses are organized around a shared purpose that provides the foundation for stakeholder cooperation and extends beyond the pursuit of profit. This perspective moves beyond compliance and risk management, framing stakeholder engagement as part of a broader commitment to building a more sustainable society (Wijnberg, 2000). Empirical studies confirm that effective stakeholder engagement fosters sustainable value creation (Mitchell *et al.*, 1997), though identifying relevant stakeholders remains a challenge (Dyllick and Hockerts, 2002). At the same time, integrating diverse perspectives can open opportunities for innovation and sustainability as strategic imperatives (Ozdemir *et al.*, 2023; Zhang *et al.*, 2025). In this sense, stakeholder theory functions not only as a theoretical foundation but also as a catalyst for change in business practice, steering organizations toward more sustainable models (Ruf *et al.*, 2001; Schwab, 2021).

Over the years, stakeholder theory has evolved into multiple interpretations, leading to debate over whether it should be considered a family of theories or a single theory with different strands (Smaguc, 2022). The framework proposed by Donaldson and Preston (1995) distinguishes normative, instrumental, and descriptive approaches. The normative approach is grounded in ethical principles that assign intrinsic value to stakeholders, conceiving the firm as a social institution with obligations that go beyond profit generation. This perspective draws on diverse ethical traditions, including Kantian ethics (Evan and Freeman, 1993), the theory of the common good (Argandoña, 1998), feminist ethics and the ethics of care (Engster, 2011; Wicks *et al.*, 1994), and Aristotelian virtue ethics (Wijnberg, 2000). The instrumental approach links stakeholder management to corporate performance, analyzing how engagement contributes to strategic objectives. The descriptive approach, by contrast, focuses on empirical observation of how firms actually manage stakeholder relationships. While conceptually distinct, these three perspectives are interconnected: the descriptive provides empirical grounding, the normative defines ethical commitments, and the instrumental translates them into strategies (Donaldson and Preston, 1995).

Stakeholder theory is thus central to rethinking accounting. Traditional accounting theory has not adequately addressed the role of multiple stakeholders in decision-making (Mitchell *et al.*, 2015). By situating accountability within the claims of diverse groups, stakeholder theory offers a robust framework for advancing social and environmental accounting, where disclosure becomes a means of mediating competing expectations, negotiating legitimacy, and supporting sustainability transitions.

From this perspective, stakeholder theory provides a crucial interpretive lens for understanding environmental accounting. Applying Donaldson and Preston's (1995) tripartite framework, the normative approach positions environmental accounting as an ethical duty: reporting on environmental impacts reflects respect for stakeholders' rights and the intrinsic value of the natural environment, regardless of immediate economic returns (Argandoña, 1998; Harrison and van der Laan Smith, 2015). The instrumental approach highlights how environmental accounting supports organizational survival and competitiveness by strengthening legitimacy, reducing conflict, and ensuring access to resources (Chung and Cho, 2018; Ratmono *et al.*, 2023). The descriptive approach focuses on how firms actually employ environmental accounting tools—such as sustainability reporting, carbon footprint analysis, or biodiversity accounting—to negotiate stakeholder demands in practice (Brown and Fraser, 2006; Lee *et al.*, 2024; Solovida and Latan, 2017). These three perspectives, rather than being alternatives, are complementary and together provide an integrated framework for analyzing the ethical,

strategic, and practical dimensions of environmental accounting and its role in creating social and environmental value.

This interpretive potential is exemplified by Hörisch et al. (2020) who explicitly sought to integrate stakeholder theory with sustainability accounting through the concept of “Accounting for Sustainability and Stakeholders.” Their framework demonstrates how sustainability accounting can create value not only by providing information but also by empowering stakeholders and fostering new opportunities for interaction between firms and society. It also highlights how firms can redefine their purpose in collaboration with stakeholders by identifying the sustainability issues most relevant to their context, thereby strengthening mutual interests and mitigating emerging risks. In this way, sustainability is understood not as an ancillary activity but as a lever for shared value creation and for managing the complexities that shape business–society relations.

3.3 Institutional Theory

Institutional theory holds that the environment exerts pressure on organizations in two distinct ways: on the one hand, through economic and technical demands arising from the market or quasi-market in which they operate; on the other, through social and cultural expectations that impose models of behavior perceived as appropriate (DiMaggio and Powell, 1983). The so-called new institutional theory of organizations (Powell and DiMaggio, 2012; Scott, 2010) focuses precisely on these cultural and social influences, showing how, within organizational fields—networks of actors and organizations engaged in the production of similar goods or services—certain practices and ideas gain legitimacy and become the taken-for-granted ways of thinking and acting. Consequently, organizations are not guided solely by efficiency and effectiveness, as economic theories suggest, but also by the cultural elements of the institutional environment; to secure legitimacy, they adopt beliefs and practices that have become institutionalized. A central proposition is that, over time, such pressures lead to processes of isomorphism, namely the convergence of organizational forms and practices (DiMaggio and Powell, 1983). Institutional isomorphism manifests in three modes: coercive, stemming from pressures imposed by regulatory or politically influential actors; normative, rooted in values and professional standards disseminated through training, associations, and networks; and mimetic, which arises under conditions of uncertainty and leads organizations to imitate those

perceived as successful or legitimate. Scott (1995) reformulated these mechanisms into three institutional pillars: the regulative, based on formal rules and sanctions; the normative, grounded in shared values and expectations; and the cognitive, encompassing cultural schemas so deeply internalized that certain practices appear “natural” or self-evident.

The regulative pillar, corresponding to coercive isomorphism, rests on rule-setting, monitoring, and the enforcement of sanctions and rewards. Here, the organizational field acts upon individual organizations by imposing structures and constraints (DiMaggio and Powell, 1983; Scott, 1987). Coercive mechanisms include the enforcement of regulation, market discipline, and the exercise of power, compelling organizations to align their structures with dominant rules to gain legitimacy and ensure survival. The underlying logic is the protection of organizational and managerial interests in terms of acquiring or safeguarding critical resources. Regulatory pressures also shape the development and convergence of environmental accounting: in the United States, for instance, a long history of environmental reporting to the SEC and the adversarial legalism that characterizes corporate governance have reinforced formal legal oversight, while simultaneously inhibiting the diffusion of more extensive voluntary practices such as external assurance or climate change disclosure (Axelrad and Kagan, 2000; Kolk *et al.*, 2008; Perego and Kolk, 2012). In the European Union, by contrast, the spread of environmental reporting and management systems has been promoted by the voluntary adoption of the EMAS scheme and by EU recommendations, such as the 2001 call for member states to legislate environmental disclosure in corporate accounts (Criado *et al.*, 2008). More recently, the transition from the Non-Financial Disclosure (NFD) directive to the Corporate Sustainability Reporting Directive (CSRD) exemplifies a further strengthening of coercive mechanisms, transforming previously fragmented obligations into a more comprehensive, standardized, and binding framework for sustainability reporting across Europe (Celli *et al.*, 2024; Pizzi and Coronella, 2024; Sharma, 2025).

The normative pillar of institutional theory concerns the values and norms that guide organizational behavior, prompting firms to act not only out of instrumental self-interest, as in the case of regulatory pressures, but according to what is perceived as socially appropriate (March and Olsen, 2006). In this sense, practices such as CSR or philanthropy in the United States cannot be explained solely by economic rationales but also by widespread societal expectations that render them conditions of legitimacy. Similarly, adherence to initiatives such as the UN Global Compact may appear voluntary but reflects the force of normative pressures diffused through professionalization, formal education, and professional networks, thereby acquiring normative authority (DiMaggio and Powell, 1983; Scott, 1987). A more recent

example is the United Nations 2030 Agenda, which has reinforced the diffusion of shared values and objectives embodied in the SDGs, creating normative pressures that push companies to adopt sustainability practices increasingly regarded as integral to the “right way” of conducting business (Pizzi *et al.*, 2023; Terama *et al.*, 2016). In this context, organizations align themselves with models of behavior socially expected within their organizational fields and the wider society (Bebbington *et al.*, 2012).

The cognitive pillar of institutional theory refers to symbols, meanings, and cultural rules that, although socially constructed, come to be experienced as objective and external to individuals and organizations, exerting strong pressure toward stability and compliance (Berger and Luckmann, 2011; Scott, 1995). Once institutionalized, these cognitive structures render some behaviors “natural” and taken for granted, while making others virtually inconceivable, thus providing a culturally supported and conceptually unquestioned foundation of legitimacy (Hoffman, 1999). Within this framework, mimetic isomorphism (DiMaggio and Powell, 1983) is the key mechanism of diffusion: under conditions of uncertainty, organizations imitate those peers perceived as more legitimate and successful (Tolbert and Zucker, 1983). This explains why, for many multinational corporations, failing to publish a sustainability report has become almost unthinkable, as reporting is now considered “obvious and proper” (Oliver, 1992), consolidating as sectoral orthodoxy (Fortanier *et al.*, 2011). Likewise, the widespread adoption of GRI standards reflects their progressive institutionalization as the legitimate benchmark for sustainability reporting, to the extent that non-compliance risks undermining the credibility of disclosure practices (Bebbington *et al.*, 2009; Fortanier *et al.*, 2011; Larrinaga-González, 2010; Moneva *et al.*, 2006). In this way, the cognitive dimension shows how organizational practices consolidate through mimetic processes that, once a tipping point is reached, drive convergence across the organizational field (Bebbington *et al.*, 2012).

The isomorphic perspective has been criticized for its excessive determinism, as it tends to downplay the role of agency and insufficiently accounts for organizational diversity and institutional change. To address these limitations, Friedland and Alford (1991) introduced the idea that society is characterized by multiple, and at times contradictory, institutional orders, generating competing pressures that compel organizations to manage conflicts and make strategic choices (Pache and Santos, 2010). Subsequent literature has emphasized the concept of institutional entrepreneurship, that is, the capacity of actors to transform or create new institutions (Greenwood and Suddaby, 2006), as well as institutional pluralism, which, according to Greenwood *et al.* (2008), carries ambivalent implications: on the one hand, ambiguity, conflict, and instability; on the other, opportunities for complementarity between

different identities and logics. Organizations can respond to pluralism in a variety of ways, such as rejecting some logics in favor of others, compartmentalizing them into separate structures (loose coupling), seeking compromises between competing logics, or merging them into a new synthesis capable of generating broader legitimacy and even transforming the organizational field itself.

In the field of environmental accounting, the coexistence of multiple institutional logics deeply shapes governance, accountability practices, and operational processes (Campanale *et al.*, 2021). Several studies have proposed different classifications of these logics: for example, Argento *et al.* (2016) identify three primary logics—business, compliance, and community—while Mahmood and Uddin (2021), analyzing sustainability reporting in the Pakistani context, distinguish normative logics, tied to external regulatory pressures; market logics, oriented toward efficiency and competitiveness; community logics, grounded in social responsibility and public value; and professional logics, emphasizing transparency and technical compliance. These logics often coexist within organizations, interacting in ways that generate institutional tensions which firms must navigate through compromises, innovation, or strategies aimed at preserving legitimacy (Greenwood *et al.*, 2011; Thornton *et al.*, 2012).

In conclusion, while the environmental accounting literature has traditionally relied on legitimacy theory to explain disclosure practices, several scholars argue that institutional theory offers a more comprehensive perspective, capable of capturing not only contingent legitimation strategies but also the long-term processes through which practices and institutions stabilize or evolve (Ball and Craig, 2010). Institutions can be understood as rules, norms, and cultural schemas that, once internalized, become “taken for granted” and push organizations to adopt behaviors perceived as inevitable through coercive, normative, and mimetic pressures (Berger and Luckmann, 2011; DiMaggio and Powell, 1983; Scott, 1995; Tolbert and Zucker, 1983). From this perspective, social and environmental reporting emerges not merely from strategic calculation or stakeholder demands but progressively as a shared orthodoxy within organizational fields, reinforced both by critical events and regulatory interventions as well as by the imitation of practices deemed legitimate, as exemplified by the widespread diffusion of GRI standards. Institutional theory, therefore, extends and integrates legitimacy and stakeholder theory, illuminating the connection between accounting practices and dominant social values and providing a more suitable interpretive framework for explaining organizational convergence and the long-term stabilization of social and environmental accountability practices (Gibassier and Unerman, 2021; Gray, 2010a).

3.4 Critical Theory

The critical theoretical approach begins with the recognition of pluralism, acknowledging that in a society characterized by multiple and often conflicting values, accounting, accountants, and accountability systems cannot be confined to a single conceptual framework. Instead, they must draw on both conceptual and practice-based resources from across different disciplines (Brown, 2009; Dillard and Vinnari, 2019; Judy Brown *et al.*, 2015). This insight underpins the call for “new accountings” capable of supporting democracy and enabling more participatory forms of social organization. Such a demand is particularly evident in the literature on sustainable development and on social and environmental accounting, where dialogic approaches to reporting have gained increasing attention (Brown, 2009; Dillard and Vinnari, 2019).

Within the environmental accounting literature, this pluralism is reflected in the tension between reformist and transformative approaches. Drawing on Hopwood *et al.*'s (2005) framework, Byrch *et al.* (2015) show how different conceptions of sustainability span a spectrum ranging from pragmatic solutions aligned with dominant business perspectives to calls for radical institutional change. Reformist approaches advocate tools such as eco-efficiency and the business case for sustainability, emphasizing the compatibility of economic growth, social welfare, and environmental protection (Figge and Hahn, 2012; Milne *et al.*, 2009; Sandström, 2005). Promoted as pragmatic and action-oriented, this middle ground is frequently endorsed by corporations as the most “realistic” path toward sustainability. Schaltegger and Burritt (2010) advanced this perspective by extending traditional management accounting into environmental accounting, inspired by the win–win paradigm and the eco-efficiency framework.

Transformative approaches, by contrast, demand a fundamental rethinking of the role of business, challenging the ideology of unlimited growth and grounding sustainability in new ethical and aesthetic principles that reshape the relationship between humans and nature (Ählström *et al.*, 2009; Benn *et al.*, 2007; Castro, 2004; Söderbaum and Brown, 2010; Unerman and Bennett, 2004). From this perspective, conventional accounting is not a tool to be adapted but part of the problem, making it necessary to develop radically new practices that give voice to alternative values and interests. Critics of the reformist stance argue that it sustains a morally and ecologically unsustainable business model (Cooper, 1992; Gray, 1992, 2006; Milne and Gray, 2013), one that ignores macro-level signals of degradation and inequality while obscuring

the structural conflicts of advanced capitalism (Ehrenfeld, 2005; Gray et al., 2009; Spence, 2009).

These divergences point to a broader issue: sustainability, like democracy, cannot be reduced to a single vision but must be understood through a critical pluralism that acknowledges complexity and conflict (Brennan, 1992; Söderbaum, 2007). As Brown (2009) argues, a “good society” is one that allows competing narratives to flourish and confront each other, turning tensions into spaces of counter-hegemony (Brown and Fraser, 2006). Following Mouffe (1995, 2002, 2000) and Laclau and Mouffe (2001), conflict should not be eliminated but recognized as a sign of democratic vitality. In a similar vein, Norgaard (1985) describes “environmental economics” as an unresolved contradiction, comprehensible only through multiple and incongruous perspectives.

It is within this framework that Brown (2009) advances the notion of dialogic accounting, grounded in agonistic confrontation and aimed at opening “spaces of possibility” born from substantive divergences. Building on this perspective, Dillard and Vinnari (2019) introduce the concept of critical dialogic accountability. They challenge the prevailing assumption in social and environmental accounting that accountability automatically derives from existing accounting systems, which they term accounting-based accountability. Traditional systems, they argue, have been designed primarily to serve the needs of investors and financiers, privileging financial capital (Malsch, 2013). As a result, accountability has been “black-boxed,” treated as if it were inevitably bound to the criteria of financial accounting. This has two consequences: first, it reinforces the neoliberal ideology that assumes financial disclosures suffice to meet the needs of all stakeholders (Archel *et al.*, 2011; Spence, 2009b); and second, it narrows the scope for imagining new and more inclusive forms of accountability, thereby consolidating the status quo. In such a framework, accountability risks becoming an empty concept, deployed rhetorically rather than as a genuine instrument of change (Spence *et al.*, 2010), while the repeated question “where is the accounting?” threatens to stifle critical research and weaken SEA’s capacity to contribute to a progressive social and environmental agenda (Flyvbjerg, 2001).

To overcome these limitations, Dillard and Vinnari (2019) propose inverting the relationship by developing accountability-based accounting. In this model, accounting does not set the boundaries of responsibility; rather, accountability systems—whether social, environmental, or ethical—determine how accounting should be designed. Accountability thus becomes the primary purpose of disclosure and transparency, not a mere byproduct. This vision rests on two theoretical pillars: Mouffe’s (2013) agonistic pluralism, which recognizes the coexistence of

conflicting interests and perspectives, and critical dialogic accounting (Brown, 2009; Brown and Dillard, 2013; Vinnari and Dillard, 2016), which promotes open and critical engagement among diverse viewpoints. Unlike traditional approaches, where stakeholder engagement is initiated by the organization itself, here responsibility networks—comprising individuals, communities, and even non-human entities affected by corporate actions—define the criteria for evaluating corporate behavior, and these criteria in turn guide the design of accounting systems.

In this light, accounting, disclosure, and transparency remain indispensable tools, but they cannot autonomously define the limits of accountability; they must be shaped by the information needs articulated by these responsibility networks. Applied to environmental accounting, this approach implies that systems should not merely translate environmental performance into numerical indicators but should be constructed based on the evaluative criteria developed by communities, institutions, and social groups directly affected by ecological impacts. Accountability thus assumes a broader function: not simply responding to specific demands but fostering social plurality and enabling more inclusive decision-making processes. Through agonistic engagement and the negotiation of shared criteria, environmental accounting can move beyond the mere legitimation of business practices to contribute to the creation of public value, understood as collective benefit that integrates economic, social, and ecological dimensions.

3.5 Conclusions

As shown in Table 1, the four theoretical perspectives most frequently employed in the EA literature offer complementary insights into how EA practices emerge, consolidate, and evolve. Legitimacy theory has long provided the dominant lens for explaining why organizations adopt EA practices, interpreting disclosure as a strategy to gain, maintain, or repair legitimacy in response either to immediate threats or to broader societal expectations embedded in the “social contract” (Deegan, 2014; Suchman, 1995). Closely related, stakeholder theory refines this view by shifting the focus from society at large to specific groups, showing how EA can serve different functions: normatively, as an ethical duty toward stakeholders and the environment (Evan and Freeman, 1993); instrumentally, as a strategy to secure legitimacy and resources (Chung and Cho, 2018); and descriptively, as an empirical account of how firms manage these relationships in practice (Brown and Fraser, 2006; Donaldson and Preston, 1995).

While legitimacy and stakeholder perspectives highlight the relational and ethical dimensions of EA, institutional theory explains its consolidation over time, emphasizing how coercive, normative, and mimetic pressures lead to the widespread adoption of practices such as GRI standards or compliance with EU directives like the CSRD (DiMaggio and Powell, 1983; Scott, 1995). From this standpoint, EA becomes institutionalized as “taken-for-granted” practice, extending beyond strategic intent to structural conformity.

Finally, critical theory pushes the debate further by contrasting reformist approaches, which extend conventional management accounting through eco-efficiency and business case logics (Schaltegger and Burritt, 2010), with transformative approaches that demand radically new forms of accounting capable of questioning unlimited growth and exposing the contradictions of advanced capitalism (Gray, 1992; Milne and Gray, 2013).

Table 3. Literature Overview.

Theory	Approach	EA Literature
Legitimacy Theory	<ul style="list-style-type: none"> - Strategic perspective - Institutional perspective 	<p>Strategically, EA used to gain, maintain, or repair legitimacy via disclosure.</p> <p>Institutionally, EA reflects broader cultural pressures and the “social contract”.</p>
Stakeholder Theory	<ul style="list-style-type: none"> - Normative approach - Instrumental approach - Descriptive approach 	<p>Normative EA as ethical duty toward stakeholders and environment.</p> <p>Instrumental EA as strategy for legitimacy and resources.</p> <p>Descriptive EA shows how firms manage stakeholder relations in practice.</p>

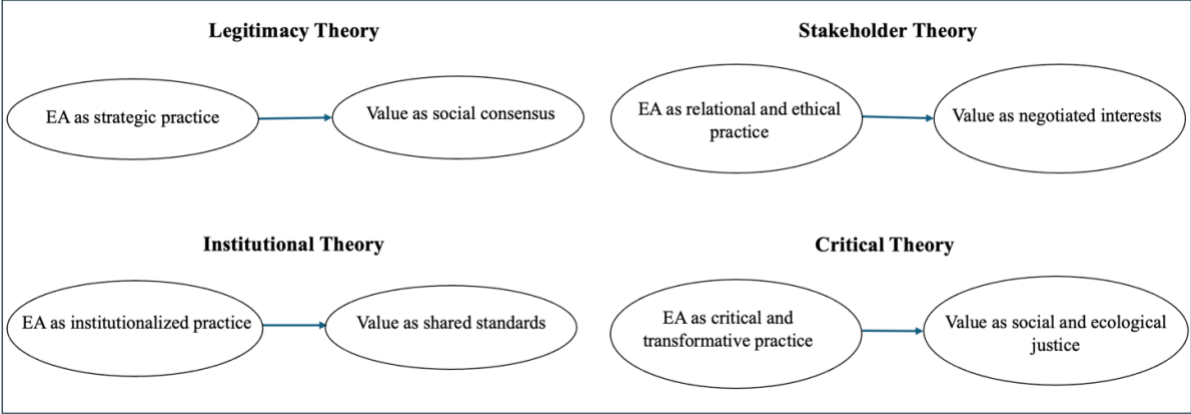
<p>Institutional Theory</p>	<ul style="list-style-type: none"> - Regulative pillar - Normative pillar - Cognitive pillars 	<p>EA shaped by coercive rules (EMAS, CSRD), normative values (UN 2030 Agenda), and mimetic adoption of GRI standards. Practices become “taken-for-granted”.</p>
<p>Critical Theory</p>	<ul style="list-style-type: none"> - Reformist approach - Transformative approach 	<p>Reformist EA extends management accounting with eco-efficiency and business case logic.</p> <p>Transformative EA calls for radical change, challenging unlimited growth and critiquing reformist EA for sustaining the status quo.</p>

Taken together, these perspectives offer a pluralistic framework for interpreting environmental accounting, illuminating its ethical, strategic, institutional, and critical dimensions, and highlighting its potential role in advancing accountability and public value. As shown in Figure 1, within this framework, public value emerges as a multidimensional concept whose meaning depends on the theoretical lens applied. From the legitimacy perspective, public value is understood as social consensus, namely the collective recognition that organizational practices are consistent with shared values and expectations. Stakeholder theory conceives public value as a negotiated synthesis of interests, built through dialogue and mediation among groups with potentially conflicting expectations, with EA serving as a space of translation and compromise. Institutional theory interprets public value as shared standards, the outcome of institutional dynamics that render environmental reporting a practice broadly accepted as legitimate within both social and regulatory contexts. Critical theory, in turn, frames public value as socio-ecological justice, emphasizing the need to move beyond the limits of existing models to address structural imbalances and give voice to alternative perspectives capable of redefining the relationship between economy, society, and nature.

Environmental accounting, therefore, assumes a plural nature: it cannot be reduced to a purely technical instrument of measurement, but functions instead as a generator of accountability spaces that integrate economic, social, and ecological dimensions. This theoretical elaboration

should not be seen as an endpoint, but rather as a conceptual framework that guides the empirical analysis presented in the following chapter, which examines the extent to which—and the ways in which—these perspectives are reflected in organizational practice.

Figure 9. Integrated Framework.



CHAPTER 4 - Empirical Analysis of Environmental Accounting for Public Value as a Mediator for Institutional Logic Tensions

4.1 Introduction

As highlighted in the first chapter, in recent decades accounting has moved beyond its traditional technical role to be recognized as a practice with social, organizational, and moral dimensions (Arrington and Francis, 1993; Hopwood, 1989; Tinker *et al.*, 1982). Carnegie *et al.* (2021, p. 69) capture this shift by defining accounting as “a technical, social and moral practice concerned with the sustainable utilization of resources and proper accountability to stakeholders to enable the flourishing of organizations, people and nature.” From this perspective, accounting is not limited to recording transactions but also informs managerial decision-making and supports entrepreneurial action, thereby contributing to sustainable development (Baker *et al.*, 2023).

Within this transformation, environmental accounting (EA) has become a crucial tool for addressing sustainability challenges, extending conventional practices by incorporating social, environmental, and collective dimensions into measurement and decision-making (Bebbington *et al.*, 2021; Gray, 2006). In doing so, EA connects closely with the concept of public value, increasingly central in accounting and public management debates (Crosby *et al.*, 2017; Lodhia *et al.*, 2021; Meynhardt, 2009; Tommasetti *et al.*, 2020). Public value requires frameworks capable of capturing the wider societal impacts of organizational activity, moving beyond the narrow focus on financial performance.

To theorize this relationship, the study builds on four perspectives widely employed in the EA literature. Legitimacy theory highlights how EA aligns organizations with societal expectations, framing public value as social consensus (Deegan, 2014; Suchman, 1995). Stakeholder theory views EA as a relational and ethical practice, where public value emerges through the negotiation of diverse interests (Brown and Fraser, 2006; Evan and Freeman, 1993). Institutional theory explains how EA becomes institutionalized through coercive, normative, and mimetic pressures, generating public value as shared standards and norms (DiMaggio and Powell, 1983; Scott, 1995). Critical theory, finally, positions EA as a transformative practice, challenging business-as-usual models and linking public value to socio-ecological justice (Gray, 1992; Milne and Gray, 2013). Taken together, these perspectives form an integrated framework in which EA is understood not only as a technical tool but as a mediating practice

at the intersection of legitimacy, stakeholder dialogue, institutionalization, and critique. At the operational level, this framework resonates with the institutional logics, conceptually mirroring the coexistence of business, community, and compliance logics (Argento *et al.*, 2016; Thornton *et al.*, 2012).

This need for multidimensional measurement and accountability systems is particularly evident in hybrid organizations, which combine public, private, and non-profit features, balancing economic, social, and environmental priorities (Battilana and Lee, 2014; Pache and Santos, 2013). Such entities pursue missions that integrate social change and sustainability (Esposito *et al.*, 2021), but must also reconcile conflicting demands. Grossi *et al.* (2021) describe this hybrid value creation as a process of mixing different types of value (Nicholls, 2009), compromising between competing goals (Campanale *et al.*, 2021), and legitimizing activities to satisfy external expectations while producing internal benefits (Vakkuri *et al.*, 2021; Vakkuri and Johanson, 2020). Addressing these tensions requires accounting and accountability systems that reflect the multidimensional nature of performance (Esposito and Ricci, 2015; Grieco *et al.*, 2015).

Within this family of organizations, municipal corporations (MCs) are a particularly relevant case. Operating at the intersection of public and private sectors, MCs are tasked with managing critical urban resources while promoting sustainable development (Collin *et al.*, 2009). Their hybrid ownership, funding, and governance structures compel them to navigate competing institutional logics (Vakkuri *et al.*, 2021). As noted by Thomasson (2009), Grossi *et al.* (2017), and Maine *et al.* (2024), MCs must balance financial sustainability with the creation of public value, facing pressures that demand not only efficiency but also environmental responsibility and social responsiveness.

One of their greatest challenges lies in measuring sustainability performance and implementing accountability mechanisms in contexts marked by divergent values and institutional logics (Skelcher and Smith, 2015). EA can act as a mediating practice that manages these tensions. As Contrafatto (2022) notes, EA has transformative potential by fostering dialogue among competing logics and enabling alignment around shared sustainability objectives. Recent contributions highlight the socially embedded nature of accounting: Busco *et al.* (2017) show how it fosters innovation while preserving institutional plurality; Dameri *et al.* (2024) emphasize the role of participatory design in supporting “value work”; and Campanale *et al.* (2021) examine how multiple value orientations shape accounting practices in hybrid organizations.

Although previous studies have explored how accounting practices foster dialogue and coordination across fragmented institutional landscapes, limited attention has been devoted on MCs, where legitimacy, sustainability, and the creation of public value play a pivotal role (Vakkuri *et al.*, 2021). Existing research has primarily examined private-sector contexts or the technical aspects of environmental measurement, leaving underexplored how EA functions as a governance and mediation mechanism in the public sphere. Moreover, while the sustainability reporting literature has increasingly recognized the broader social and institutional dimensions of measurement, the connection between EA and Public Value remains conceptually and empirically underdeveloped.

To address these gaps, the present study examines the role of EA in mediating and integrating the multiple institutional logics—business, compliance, community, and environmental—that shape the management of MCs. The overarching research question guiding this inquiry is therefore: How does EA enable MCs to mediate multiple institutional logics and contribute to the creation and visibility of Public Value?

The study adopts an action research approach, conducted within a Southern Italian municipal corporation operating in the waste management sector. The research project focused on the co-development of EA practices, with particular attention to the implementation and use of the Carbon Footprint. The author acted as both an external facilitator and embedded participant, working alongside managers and staff throughout the process. Data collection combined participant observation, semi-structured interviews, informal conversations, and document analysis, enabling a triangulated and context-sensitive understanding of how EA was interpreted and applied within the organization. Anchored in an interpretive paradigm, the study captures not only the operational outcomes but also the cultural and strategic shifts triggered by the adoption of carbon accounting practices.

4.2 Literature Review

4.2.1 The hybrid nature of Municipal Corporations: the instrumental role of Environmental Accounting

The doctrines of New Public Management (NPM) and neoliberal ideologies, with their emphasis on efficiency, have driven public sector systems worldwide to adopt hybrid forms of governance and organization. It is now common for public services, such as utilities, to be

delivered through hybrid organizations that operate at the intersection of the public sector and the market (Almqvist *et al.*, 2013; Billis and Rochester, 2020; Haigh *et al.*, 2015; Hood, 2000). Although organizational hybridity remains an ambiguous and somewhat diffuse concept, it is widely acknowledged that hybrid organizations must integrate social and political objectives with economic stability while operating within complex social structures and diverse accountability regimes (Guthrie, 1993). These organizations combine resources, governance structures, and institutional logics drawn from different sectors (public, private for-profit, and non-profit), each characterized by distinct goals and actors (Battilana and Lee, 2014; Pache and Santos, 2013). As such, they must balance several values of these sectors, making them a key focus of research on social and public value creation.

More recently, Grossi *et al.* (2020, p. 257) describe hybrid organizations as being characterized by “inter-organizational structures, roles, work practices, knowledge, and management systems that operate in the grey area between the public and private sectors, requiring the integration of potentially conflicting goals and values derived from different institutional logics”.

The literature identifies three primary forms of hybrid organisations: hybrid public enterprises, including subsidiaries and publicly owned companies; social cooperatives mandated by the public sector to achieve specific goals; and social enterprises (Esposito *et al.*, 2021; Grossi *et al.*, 2017; Jäger and Schröer, 2014).

This study narrows its focus specifically to MCs. They are inherently hybrid by nature, blending public service missions with private sector management practices. While MCs play a pivotal role in delivering essential services such as electricity, water supply, and waste management, they must navigate the challenge of reconciling financial objectives with the imperative of creating public value (D’Amore *et al.*, 2023). Their autonomy in operations is combined with their primary ownership by municipalities, creating a unique blend of public ownership and private-sector competition (Grossi *et al.*, 2015; Krause and Van Thiel, 2019). This duality introduces governance challenges, including managing mixed ownership structures, addressing conflicting organizational goals, and mediating between competing institutional logics (Kankaanpää *et al.*, 2014; Vagliasindi, 2008).

Maine *et al.* (2024), in their study of Swedish municipal corporations, observed that some actors embrace the inherent tension between competing institutional logics, managing these challenges by implementing organizational structures capable of addressing conflicting demands concurrently.

In addition to balancing financial objectives with the imperative of creating public value, MCs play a crucial role in addressing social and environmental challenges. As stewards of public

value, they are tasked with aligning their operations with economic, social, and environmental sustainability goals (Ball *et al.*, 2014; Farneti and Siboni, 2011; Kaur and Lodhia, 2019; Thomson *et al.*, 2014). Indeed, the value generated by MCs cannot be assessed solely through financial performance. Instead, it requires a broader perspective, considering the societal, environmental, and economic impacts they produce (Bozeman, 2019; Moore, 1997). However, their hybrid nature adds a layer of complexity to this responsibility, operating within complex environments shaped by multiple, often conflicting, institutional logics.

As Mundy (2010) argues, management control systems can be instrumental in navigating these tensions when employed dynamically to balance control and flexibility. In this context, sustainability accounting emerges as critical instrument. They offer a structured means for organizations to interpret, mediate, and communicate their responses to environmental, social, and economic pressures (Arroyo, 2012; Higgins and Larrinaga, 2014; Larrinaga-González, 2010; Lepore *et al.*, 2023; Mahmood and Uddin, 2021; Pisano *et al.*, 2022). By integrating non-financial dimensions into decision-making, sustainability accounting supports the alignment of organizational practices with broader societal goals, helping MCs navigate hybrid challenges while demonstrating their public value contributions. Moreover, as Lounsbury (2008) suggests, sustainability accounting can be understood as an institutional response that allows organizations to adapt to and negotiate external pressures while fostering more sustainable governance models (Adams and McNicholas, 2007; Hopwood *et al.*, 2005; Lozano *et al.*, 2016). Following the classification proposed by Schaltegger and Burritt (2010), this study focuses specifically on EA as a subset of sustainability accounting. While sustainability accounting encompasses a broad range of social, environmental, and economic practices, EA narrows its scope to environmental issues such as carbon emissions, water resource management, biodiversity preservation, and animal rights (Bebbington *et al.*, 2021).

Attention to EA initially emerged in the private sector but has progressively extended to the public sector since the late 1990s (Burritt and Welch, 1997; Larrinaga-González and Pérez-Chamorro, 2008; Tommasetti *et al.*, 2023). Growing public dissatisfaction and distrust toward governmental institutions have increased the urgency for strategies and tools that enhance transparency and accountability in the public sector (Montesinos and Brusca, 2019). As a result, a more integrated view of organizational performance has become necessary, one that includes not only financial but also environmental and social dimensions (Kılıç and Kuzey, 2018; Stubbs and Higgins, 2014), particularly given the public sector's institutional centrality (Farneti and Siboni, 2011). In this context, EA has emerged as a critical instrument improving the evaluation of environmental value and mitigating the risks associated with environmental investments

(Tommasetti *et al.*, 2023). However, the limited familiarity of practitioners with such tools calls for a rethinking of information management processes and the key drivers of EA adoption (Alewine, 2010; Pizzi *et al.*, 2020). Moreover, mandatory sustainability reporting alone does not ensure the quality or usefulness of disclosures, particularly in political environments that are less receptive to environmental logic (Larrinaga *et al.*, 2018).

According to Tommasetti *et al.* (2023), the research field of EA in the public sector remains underdeveloped, with limited and fragmented studies. The lack of theoretical contributions and a coherent research agenda hampers the evolution of the debate and the appreciation of the public sector's unique characteristics, especially in the case of MCs. By focusing on organizational carbon emissions, this study seeks to address that gap by conceptualizing EA not merely as a technical exercise in measurement and reporting, but as a socially embedded practice that actively shapes organizational responses to institutional complexity.

4.2.2 Municipal Corporations and public value creation

One reason for the rise of hybrids lies in their potential to generate societal value (Besharov and Mitzinneck, 2020; Vurro *et al.*, 2010) by developing shared capabilities (Alonso and Andrews, 2019). As critical components of municipal service infrastructures, MCs manage a wide array of public services and prioritize the creation of public value as a core mission objective, extending beyond purely financial measures of success (Esposito *et al.*, 2021).

Nevertheless, MCs must confront the risk of mission drift, which occurs when social objectives—namely, the creation of value for the community—are subordinated to economic logic, that is, the generation of financial value. These organizations are expected to deliver social value by providing innovations and services that would otherwise remain unmet, while simultaneously achieving gains in efficiency. As previously noted, the complexity of hybrids stems from their entanglement in multiple, and often conflicting, institutional logics (Battilana *et al.*, 2017; Greenwood *et al.*, 2011). Research on hybrid organizations has often emphasized the tension between economic and social objectives (Battilana *et al.*, 2022; Ebrahim *et al.*, 2014; Pache and Santos, 2010, 2013). More recent perspectives, however, advocate for a holistic conception of value (Santos, 2012, p. 337), understood as the enhancement of collective utility (Kivleniece and Quélin, 2012; Villani *et al.*, 2017), realized through improved social well-being outcomes, efficiency gains, and innovative solutions (McDermott *et al.*, 2009).

From this perspective, while hybrids generate social value, they must also retain part of the value created to secure their own growth and organizational sustainability (Santos, 2012; see also Koppenjan and Enserink, 2009). Value capture occurs when hybrids appropriate a share of the net value produced, after accounting for the resources invested (Santos, 2012). Yet excessive capture at the organizational level can undermine social value creation, disrupting the balance between public mission and economic sustainability. The dynamics between value creation and value capture therefore become central to ensuring a stable and enduring provision of services to the community (Ramus and Vaccaro, 2017).

At the organizational level, governance plays a pivotal role in supporting value creation while avoiding mission drift or imbalances in value capture (Ebrahim *et al.*, 2014). This encompasses strategic orientation, control mechanisms, and the management of stakeholder relationships, all of which shape hybrids’ ability to balance social and economic goals (Mair *et al.*, 2015). Leadership, organizational practices, and the involvement of local stakeholders are also crucial to maintaining this equilibrium (Battilana and Dorado, 2010; Smith and Besharov, 2019). At the institutional level, field governance—understood as the regulatory frameworks, political arrangements, and normative structures that guide hybrids in addressing social problems—plays an equally significant role (Mair and Rathert, 2020; Seibel, 2015). These arrangements provide resources and discursive support (Huybrechts and Haugh, 2018) and can either foster or constrain hybrids’ capacity to generate value, depending on the robustness of regulations and the degree of autonomy granted (Rawhouser *et al.*, 2015).

Yet despite extensive attention to governance models, leadership, and contractual instruments, relatively little focus has been placed on accounting tools as operational levers for balancing value creation and value capture. This gap highlights the need to investigate how EA can support hybrids in navigating these dynamics by reconciling economic, social, and ecological objectives through more inclusive measurement and accountability practices.

Table 4. Literature Gaps and RQs.

Topic	Identified Research Gap	Research Questions
The hybrid nature of Municipal Corporations and the role of Environmental Accounting	Environmental Accounting in the public sector remains underdeveloped: existing studies are limited, fragmented, and lack	1. How can Environmental Accounting be conceptualized to address the hybrid nature of MCs?

	<p>a coherent theoretical framework.</p> <p>This gap prevents a full understanding of the specificities of MCs and their hybrid nature.</p>	
<p>Municipal Corporations and public value creation</p>	<p>While governance, leadership, and contractual mechanisms have been widely studied, little attention has been given to accounting tools as operational levers to balance value creation and value capture in MCs.</p>	<p>2. How does EA contribute to measuring and enhancing public value in MCs?</p>

4.3 Methodology

4.3.1 Theoretical Framework

Several researchers have utilized the institutional logics perspective to examine and interpret the complexities of hybridity (e.g. Argento *et al.*, 2016; Grossi *et al.*, 2017; Meyer *et al.*, 2014; Thornton *et al.*, 2012). These divergent institutional logics exert influence at both the organizational and individual levels, shaping behaviors and decision-making processes (Skelcher and Smith, 2015).

Therefore, the theoretical framework of this study is grounded in institutional logics, offering a lens to understand how hybrid organizations, such as MCs, manage the tensions arising from diverse values and priorities (Thornton and Ocasio, 1999, 2008). Thornton *et al.* (2012, p. 2) define institutional logics as “frames of reference that condition actors’ choices for sense-making, the vocabulary they use to motivate action, and their sense of self and identity”. In pluralistic organizational contexts, the coexistence of multiple logics confronts actors with competing values, norms, and rules that shape their decisions (Battilana, 2006). Organizations must navigate these tensions by balancing individual agency, organizational structures, and the external environment, often in response to institutional pressures (Thornton *et al.*, 2012).

Understanding public value creation requires examining the interaction of multiple institutional logics. Building on the framework proposed by Argento *et al.* (2016), public service companies

operate within three institutional logics: business, compliance, and community. The business logic focuses on operational efficiency and economic growth, driving strategies such as cost reduction, profit orientation, partnerships, commercialization, and internationalization (McPherson and Sauder, 2013). The compliance logic emphasizes adherence to regulatory frameworks established by actors like the European Union, national legislators, and regulatory agencies, ensuring alignment with concession contracts, privatization programs, and governance requirements (Boscheck *et al.*, 2013). The community logic underscores the mandate to serve the public interest, prioritizing the delivery of accessible, high-quality services to citizens and fostering accountability in response to growing public expectations for service standards (Hartley and Skelcher, 2008). The interaction of these logics creates institutional tensions that organizations must address through compromises, innovation, and mechanisms of legitimization (Greenwood *et al.*, 2011; Thornton *et al.*, 2012).

However, the pursuit of profit objectives while simultaneously protecting the natural environment often generates profound tensions within organizations (Dahlmann and Grosvold, 2017). To better interpret these tensions, sustainability scholars have increasingly drawn on the institutional logics perspective to explore the diverse motivations that shape organizational engagement with sustainability (Cerbone and Maroun, 2019; Kok *et al.*, 2019; Mahmood and Uddin, 2021). Building on this line of research, the present study extends the framework of Argento *et al.* (2016) by introducing a fourth dimension — the environmental logic — which reflects the growing salience of ecological concerns in organizational decision-making and their interaction with economic, social, and regulatory imperatives.

According to Dahlmann and Grosvold (2017), this logic is grounded in ethical and moral values that emphasize the protection of nature and the reduction of environmental impact. Unlike the market-oriented business logic, which views sustainability mainly as a way to enhance efficiency or legitimacy, the environmental logic reflects a genuine sense of ecological responsibility and stewardship. It recognizes the natural environment as a legitimate stakeholder and places environmental protection at the core of organizational purpose. Integrating this fourth logic into the analytical framework allows for a more comprehensive understanding of how organizations navigate institutional complexity.

This study adopts a theoretical framework (Figure 10) designed to examine how EA may contribute to mediating the tensions arising from the multiple institutional logics that characterize MCs. These organizations operate at the intersection of business logic, compliance logic, community logic and ecological. The coexistence of these logics generates inherent

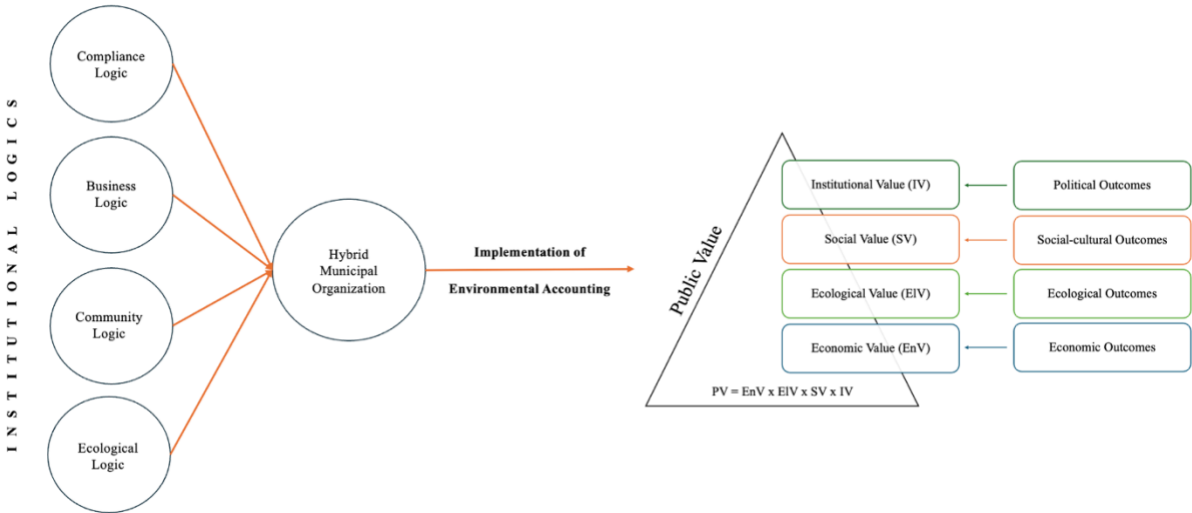
tensions but also creates opportunities for integration, provided that suitable mechanisms of mediation are in place.

Within this framework, EA is conceptualized as the activating lever for public value creation. By embedding sustainability considerations into organizational practices, EA enables the identification and measurement of multidimensional outcomes that extend beyond traditional economic indicators. Public value thus represents the analytical lens through which the impact of EA can be assessed.

To operationalize this perspective, the study integrates Benington’s taxonomy of public value outcomes (economic, ecological, social-cultural, and institutional) with Deidda Gagliardo’s Pyramid of Public Value, thereby constructing a structured yet multidimensional evaluative model. The outcomes serve as the substantive dimensions of public value, while the pyramid provides a hierarchical and measurable framework that allows for systematic assessment. For each dimension, a set of indicators was developed in alignment with the specific characteristics of the case study organization.

The analysis was conducted in two steps. First, the outputs of EA-related initiatives were identified. Second, these outputs were systematically traced to their corresponding outcomes, classified according to the integrated framework. In this way, the framework is intended to explore whether and how EA can generate measurable public value across multiple dimensions and, in turn, provide a basis for mediating institutional logics.

Figure 10. Theoretical Framework.



4.3.2 Research Methods

This paper is based on a single case study (Yin, 2014), developed through an action research project initiated by the author in March 2023. The study adopts an interventionist approach (Jönsson, 2010), combining inquiry and action to support organizational change while generating academically relevant insights. Although the process is still ongoing, this paper refers to the project status as of April 2025. Action research methodology combines inquiry and action to generate knowledge about a specific organizational activity, with the ultimate goal of driving change (Adams and Larrinaga, 2019; Adams and McNicholas, 2007; Bradbury, 2015). It is a participatory process in which the researcher actively engages with the organization and collaborates with managers to introduce and implement new solutions (Eden and Huxham, 1996; Jönsson and Lukka, 2005).

The organizations often serve as the primary settings for action research, and most action research studies are conducted in the form of case studies (Adams and McNicholas, 2007; Battaglia *et al.*, 2015; Chiucchi, 2013; Taïbi *et al.*, 2020; Tarquinio and Xhindole, 2022).

The empirical setting is ASIA Napoli S.p.A., a municipal corporation operating in the waste management sector in Southern Italy. The case study design enables an in-depth exploration of the dynamics surrounding the implementation of EA, the interaction of institutional logics and the public value created. Fieldwork was conducted between March and November 2023, during which the author undertook a research internship within the organization.

Although initially introduced as a participant observer, the author's role evolved into external technical consultant supporting the EA project. This dual positioning allowed for privileged access to both strategic and operational levels of the organization.

I drew on multiple sources of evidence to triangulate the observations, to increase confidence in the conclusions, and to ensure the validity of the data (Hoque, 2018; Sridharan, 2021).

The research partnership focused on the implementation of an EA framework to assess emissions generated by corporate activities and processes. The project team overseeing the implementation comprised: the Quality and Environment Department, consisting of three employees, responsible for data collection and creating an internal database; the author serving as an external technical consultant; and the Director of General Affairs and Plant Development, serving as the internal supervisor.

The author guided the team in selecting calculation methods, providing databases for emission factors, and ensuring compliance with the protocol, while maintaining an observational role. This approach enabled the author to participate in informal meetings and discussions not only with the staff of the Quality and Environment Department and with the Director of General Affairs and Plant Development, but also to spend time and talk informally with different

workers in their private offices and meeting rooms. This allowed for close monitoring team dynamics and interactions with other departments, capturing changes in behaviors, attitudes, beliefs, and narratives among participants. Employee behaviors and interactions with the newly introduced processes were observed to assess their potential influence on organizational culture. Participant observation was the primary method of analysis, supported by formal and informal interviews, which served as a key data collection technique.

The employees interviewed were selected through non-probability purposive sampling, with the aim of ensuring a balanced representation among different organizational levels and functions within ASIA. For the formal interviews, the inclusion criteria concerned the position held within ASIA's governance, the level of direct involvement in the implementation of carbon accounting practices, and the availability to participate in a structured interview lasting approximately 40 to 60 minutes. In the case of informal interviews, the inclusion criteria focused primarily on work experience, specifically, a minimum of one year in the current role to ensure a sufficient understanding of internal work dynamics, as well as the diversity of organizational positions and functions within the ASIA hierarchy. This sampling approach enabled the collection of a rich and varied set of perspectives, capturing both strategic and operational viewpoints on the implementation of carbon accounting within the organization.

The semi-structured formal interviews were carried out with the CEO, the Director of General Affairs and Plant Development, and the Financial Director. As shown in Table 1, the interview with the CEO lasted approximately one hour, while those with the two directors were about 40 minutes each. In line with Swain and King (2022), the informal interactions facilitated easier communication and often yielded more naturalistic and realistic data compared to traditional formal interviews. This approach was particularly suited to the cultural context of the study, where the internal team initially displayed reluctance to share thoughts, ideas, or opinions with the external researcher. Formal, recorded interviews risked further inhibiting participants, potentially leading to less meaningful or even inaccurate data, as suggested by Rutakumwa *et al.* (2020). To address these challenges, informal interviews were conducted without recording, and their outcomes were documented in a work journal maintained by the researcher. This journal captured personal reflections, ideas, impressions related to specific topics (Table 2). Following Swain and King (2022), both types of informal conversations were utilized: observed conversations, occurring naturally during fieldwork observations, and participatory conversations, involving interactive dialogue between the researcher and one or more individuals.

In summary, the formal interviews provided a more structured perspective on strategic and operational aspects of the carbon accounting process, while the informal interviews allowed for a more natural and context-sensitive understanding of organizational dynamics.

Table 5. Semi-Structure Interviews.

Method	Modality	Actors Involved
Semi-structured Interviews	Interviews lasting 40-60 minutes, recorded, transcribed, and analysed systematically.	<ul style="list-style-type: none"> - Sole Administrator - Financial Director - Director of General Affairs and Plant Development

Table 6. Informal Conversations.

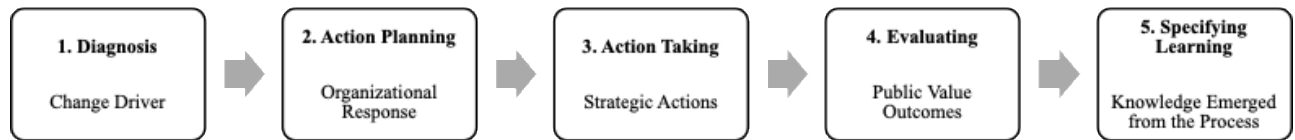
Role	Department	Topics Covered in the Interview
Sole Administrator	///	Strategic vision for sustainability, cultural change, and organizational alignment with carbon accounting.
Executive Manager	Administration, Finance and Control	Budgeting for carbon accounting initiatives, financial implications, and transparency in reporting.
Executive Manager	General Affairs and Plant Development	Operational impacts of CF measurement on facilities and general operations.
Executive Manager	Human Resources	Employee engagement, training programs for sustainability, and cultural transformation.
Executive Manager	Operations	Integration of carbon accounting into technical operations and efficiency improvements.
Executive Manager	Procurement	Sustainable procurement practices and the role of carbon accounting in supplier management.
Middle Manager	General Affairs and Plant Development	Coordination of plant activities, resource allocation, and the integration of sustainability into plant operations.

Middle Manager	Administration, Finance and Control	Administrative processes supporting carbon accounting implementation.
Employee	Administration, Finance and Control	Role of analytical accounting in tracking CF data and improving reporting accuracy.
Employee	Fleet Management	Monitoring and reducing emissions from the vehicle fleet and alignment with sustainability goals.
Employee	Administration Support	Administrative processes supporting carbon accounting implementation.

Triangulation of data from different sources and actor groups enhanced the internal validity of the findings. The interpretive orientation of the study, combined with prolonged engagement in the field, allowed for an emic perspective and for capturing the complex, dynamic, and often paradoxical nature of institutional tensions.

The action research process follows a series of distinct steps. According to Eden and Huxham (1996), Greenwood and Levin (2007), and Battaglia *et al.* (2015), action research typically unfolds through five phases. As illustrated in Figure 2, the process begins with Diagnosis, which entails identifying and interpreting an initial organizational problem or need for change. This stage allows the formulation of a preliminary theoretical framework to guide subsequent actions. The second step, Action Planning, focuses on designing specific organizational responses to the diagnosed problem, translating theoretical insights into concrete strategies. The third step, Action Taking, involves the implementation of the planned strategies, aimed at generating tangible changes within the organization. Following implementation, the Evaluating phase critically assesses the impacts and outcomes of the actions taken, verifying their coherence with the theoretical assumptions and measuring their practical effectiveness. Finally, the process culminates in Specifying Learning, where the knowledge generated through the experience is formally articulated. As Eden and Huxham (1996) emphasize, this learning can produce new tools, techniques, or models that are valuable not only for the organization involved but also for broader academic and professional audiences.

Figure 11. Action Research Steps.



4.3.3 Company Profile and Research Context

The case study focuses on ASIA Napoli S.p.A. (hereafter ASIA), a municipally owned corporation in Italy that delivers urban hygiene services, including the collection of sorted and unsorted waste, street cleaning, and the transportation of waste to treatment and sorting facilities. ASIA represents a paradigmatic example of a hybrid organization, combining public and private sector characteristics, as theorized by Perry and Rainey (1988) and Van Helden and Reichard (2016). ASIA, being fully owned by the Municipality of Naples, operates as a joint-stock company. For this reason, it is at the intersection of public accountability and private-sector managerial autonomy. This dual identity enables the company to pursue efficiency-driven strategies and innovation while maintaining alignment with public service obligations and municipal oversight.

ASIA's hybridity is also reflected in its goals, which integrate the mandate of delivering essential public services with the imperatives of cost control, technological advancement, and financial sustainability. While public in terms of mission and legal accountability, ASIA operates under a market-oriented logic that prioritizes performance optimization and strategic partnerships. Its funding model further reinforces this duality: although most of its revenues are generated through service contracts with the Municipality, its legal status as a joint-stock company imposes financial discipline and performance expectations typically associated with private enterprises.

Governance and control mechanisms confirm this hybrid positioning. ASIA is strategically supervised by the Municipality of Naples, which ensures compliance with regulatory

requirements and policy alignment. Simultaneously, the company enjoys substantial managerial autonomy, allowing it to design and implement entrepreneurial initiatives in response to emerging operational needs. Within this complex institutional framework, ASIA operates under multiple institutional logics, each influencing its strategic orientation and decision-making processes.

The evolution of ASIA's sustainability reporting practices reflects the interplay of multiple institutional logics (business, community, and compliance) that progressively shaped the company's trajectory. Initially, the drive toward non-financial reporting was primarily rooted in community logic. Following the severe waste crisis, ASIA faced intense public criticism and reputational damage. Although governance failures at broader institutional levels were responsible, the company was perceived by citizens as the main culprit. As the Financial Director stated, *"Since we are responsible for waste collection, citizens perceive us as the root of the issue... this is precisely why communication has become essential"*. In this context, sustainability reporting was introduced as a reputational repair tool, aimed at rebuilding trust and restoring legitimacy within the community.

Despite the early introduction of sustainability reporting, ASIA's internal culture remained largely resistant to change. Sustainability practices were perceived as isolated and peripheral activities, disconnected from the company's strategic priorities. Reporting became a formalistic exercise, performed more to fulfill an external expectation than to drive real organizational learning or improvement. This environment fostered widespread inertia, where the production of sustainability indicators was seen as an administrative burden rather than a meaningful tool for guiding action.

As the Financial Director admitted, *"Sustainability reporting has remained confined to a technical function, with little influence on the company's real management dynamics. It is perceived as a document we produce out of necessity, but it does not change how we operate"*. His words reflect a broader organizational sentiment marked by skepticism and disengagement, where reporting obligations were met with minimal commitment and little belief in their potential to trigger substantive change. In this context, sustainability reporting failed to embed itself as a strategic resource, reinforcing instead a passive compliance culture and delaying the organization's transition toward integrated environmental management.

A decisive change occurred in 2022 with the appointment of a new Sole Administrator and a reorganization of ASIA's governance structure. The new leadership introduced a mission statement, a values charter, and a code of ethics, signaling a stronger orientation toward long-term quality and sustainability. As the CEO affirmed, the goal was *"to transform ASIA into a*

quality company, achieved by investing in both human resources and structural assets, including the opening of new waste treatment plants". This marks the entry of a renewed business logic, where environmental objectives were no longer marginal but directly linked to operational efficiency, strategic investments, and corporate development.

4.4 Findings

4.4.1 Change driver: compliance logic

While the new governance structure laid the cultural foundations for change, it was the pressure from compliance logic that ultimately catalyzed the implementation of a structured EA system. Within this hybrid and multi-logical environment, ASIA was increasingly confronted by the tightening of sustainability reporting obligations, especially considering national and European regulatory frameworks. As a MC operating in an environmentally sensitive sector, ASIA faced heightened demands for transparency, standardization, and verifiability of sustainability disclosures.

The growing regulatory expectations reinforced the centrality of compliance within ASIA's strategic agenda, transforming what had been seen as a marginal reporting activity into a core operational priority. It was in response to these pressures that ASIA decisively chose to invest in EA, and in particular in the calculation of Carbon Footprint. EA thus emerged not as a voluntary initiative, nor merely as a reputational tool, but as a necessary step to align the company with the new standards of accountability and public value creation expected from municipal service providers.

The Financial Director emphasized this priority, stating:

"In a sector as environmentally sensitive as ours, strict compliance with European and national sustainability regulations is non-negotiable. Adopting environmental accounting was a strategic decision to meet these obligations while ensuring that our operations remain aligned with the highest standards of transparency".

The transition from the Non-Financial Reporting Directive (NFRD) to the Corporate Sustainability Reporting Directive (CSRD, Directive 2022/2464/EU) has intensified these compliance pressures. The CSRD introduces more detailed and standardized requirements, particularly regarding carbon emissions reporting and alignment with the European Sustainability Reporting Standards (ESRS). These changes have placed additional demands on

ASIA to enhance its capacity for emissions monitoring and to integrate robust reporting mechanisms.

Reflecting on the implications of these changes, the Director of General Affairs and Plant Development noted:

“The stricter standards introduced by the CSRD pose significant challenges, but they also offer opportunities to improve our emissions monitoring and demonstrate compliance. Meeting these requirements ensures our legitimacy and strengthens our reputation within the industry.”

While EA has allowed ASIA to meet its compliance obligations effectively, its initial adoption reflected a narrow focus on regulatory adherence. Disclosure was treated as a standalone exercise rather than a strategic tool for informing governance and long-term planning. This reflects the broader challenge perceived by ASIA’s top management: moving from a purely compliance-driven approach toward one in which environmental accounting becomes an integral part of the organization’s strategic transformation and sustainability agenda.

As the Director explained:

“Compliance is more than a legal necessity. It is the foundation of our credibility. Through environmental accounting, we not only meet regulatory requirements but also show a concrete commitment to sustainability and environmental responsibility”.

This approach reflects the organization’s intent to position EA as a central operational focus. While the initial objective was to meet formal reporting obligations, the adoption of EA gradually opened new spaces for reflection on environmental performance, laying the groundwork for a progressive integration of sustainability into the company’s broader strategic and operational frameworks.

4.4.2 Organizational Response: Carbon Footprint Analysis

Driven by the new regulatory pressures introduced by the CSRD, ASIA identified the need to develop an EA system to measure and report its emissions. Lacking internal expertise in this area, the company turned to academic collaboration to bridge the gap. This led to a research partnership aimed at co-developing a tailored framework for Carbon Footprint (CF) analysis.

The author contributed directly to this initiative through a research internship at ASIA, conducted from March to November 2023. The project focused on designing and implementing a methodology to quantify emissions generated by the company’s operations, laying the groundwork for both compliance and long-term sustainability integration. The project team overseeing the implementation comprised: the Quality and Environment Department (consisting of three employees), responsible for data collection and creating an internal database; the author serving as an external technical consultant; and the Director of General Affairs and Plant Development, serving as the internal supervisor. The author guided the team in selecting calculation methods, providing databases for emission factors, and ensuring compliance with the Greenhouse Gas (GHG) Protocol.

The CF analysis enabled ASIA to systematically measure emissions across Scopes 1, 2, and 3 for the year 2022, generating a robust dataset from which to plan strategic interventions.

Data collection combined primary sources like internal records on fuel and electricity consumption, with secondary sources, including certified databases for emissions factors. The analysis followed a materiality-based approach, allowing ASIA to concentrate on the most significant and controllable emission sources, while excluding marginal or less relevant activities to optimize the use of analytical resources.

As shown in Table 3, in 2022, the largest share of carbon emissions, approximately 78%, was attributable to Scope 1 emissions, primarily associated with the company’s diesel-powered vehicle fleet, which plays a central role in daily waste collection and transportation. These results reflect the company’s operational structure, where mobility and logistics represent critical sources of environmental impact.

Scope 2 emissions, linked to electricity consumption, represented 6.3% of the total.

Scope 3 emissions accounted for the remaining 12%, with the most substantial contribution stemming from employee commuting, responsible for 9.2% of total emissions.

This analytical baseline laid the foundation for the company’s decarbonization strategy and helped internal actors identify priority areas for action.

Table 7. Results of Carbon Footprint Analysis.

	Activity	%
Scope 1	Climate control	3,81%
Scope 1	Fleet fuel consumption	78,26%
Scope 2	Electricity consumption	6,34%

Scope 3	Consumption goods	0,16%
Scope 3	Capital goods	0,39%
Scope 3	Business travel	1,81%
Scope 3	Employee commuting	9,23%

4.4.3 Strategic Actions

In response to the results of the analysis, ASIA set a 43 percent emissions reduction target by 2030, aligning with both EU and Italian policy objectives. To operationalize this strategic commitment, the company translated its overarching priorities into a series of concrete outputs designed to reduce its environmental footprint and foster organizational change. These initiatives, summarized in Table 5, are organized into four clusters—information sharing and clear communication, employee engagement, education and training, and efficiency and organizational improvement—each representing a specific way in which strategic goals were converted into actionable measures within the organization.

Table 8. Output Activities.

Strategic priorities	Output activities
Information sharing and clear communication	<ul style="list-style-type: none"> - XHTML sustainability reports (CSRD compliant) - Monthly Sustainability Newsletter - News section on corporate website - Formal channel for employee proposals
Employee engagement	<ul style="list-style-type: none"> - Brainstorming sessions - Participatory planning - Small working groups for new practices - ESG Team for sustainability reporting
Education and training	<ul style="list-style-type: none"> - Internal workshops on sustainable practices - Specialized training sessions - School initiatives - Partnerships and campaigns

	- Community projects
Efficiency and organizational improvement	<ul style="list-style-type: none"> - Electrification of the vehicle fleet - Smart bins with digital monitoring - Restructuring of collection model - Full digitalization of logistics

Clear and consistent communication was reinforced through the modernization of sustainability reporting, with reports now published in XHTML format on the company website in compliance with the CSRD directive, replacing the previously downloadable versions. Complementing this, a monthly Sustainability Newsletter was launched to share internal stories and external initiatives, while a dedicated news section on the website highlights community efforts and operational improvements. In addition, a formal communication channel was established to collect employee suggestions for sustainability enhancements, managed by a designated professional. Collectively, these outputs strengthened interdepartmental collaboration, increased organizational awareness, and embedded sustainability into ASIA’s culture, aligning daily practices with long-term strategic goals.

Employee engagement initiatives were designed to ensure that organizational members played an active role in planning and implementing sustainability-related changes. Regular formal and informal meetings provided spaces for employees to contribute ideas, with brainstorming sessions and participatory planning used to identify, prioritize, and operationalize sustainability actions. Focus groups were convened to address specific behavioral issues, such as the design of a commuting plan aimed at reducing Scope 3 emissions from employee travel, signaling a commitment to sustainability that extended beyond day-to-day operations. Small working groups were tasked with piloting new practices, refining standards, and improving processes, while department heads actively promoted the adoption of sustainable behaviors within their teams. This participatory culture was further institutionalized through the creation of an ESG team, described as a “laboratory of ideas, passion, and dialogue” dedicated to shaping the company’s first Sustainability Report.

ASIA also invested in a wide range of educational programs and training activities to build environmental knowledge and foster sustainable practices. Targeted workshops trained employees to adopt resource-efficient behaviors in daily operations, while specialized sessions provided opportunities to acquire advanced skills. Sponsored events with environmental professionals showcased practical strategies to reduce ecological impacts, and employees were invited to act as sustainability ambassadors, reinforcing peer-to-peer learning and serving as role models across the organization. Beyond internal training, ASIA extended its outreach to the community through partnerships and public education campaigns. Initiatives such as the *OLImpiadi* engaged primary school students in the collection and recycling of used oils, strengthening environmental awareness and promoting resource recovery. In collaboration with Legambiente Campania and CONAI, ASIA also contributed to the 20th edition of *RiciclaEstate*, a long-standing campaign to disseminate best practices in waste separation and sustainable lifestyles in coastal and tourist municipalities across Campania. Building on these collaborations, the *Bioplastiche e Comunità* project brought together schools, businesses, civic associations, and residents to promote the correct use and recycling of compostable bioplastics, thereby improving waste sorting and advancing a culture of circular economy. Similarly, the *A Light on the Future of Children* project saw ASIA professionals participate as speakers in events dedicated to environmental education, further reinforcing the link between corporate expertise and civic awareness. Taken together, these initiatives illustrate how ASIA's training and outreach efforts extend well beyond organizational boundaries, producing social outcomes in the form of enhanced environmental awareness, stronger civic participation, and the diffusion of sustainability values across generations.

The cornerstone of the strategy is a phased electrification of the corporate vehicle fleet, encompassing the gradual replacement of internal combustion engine vehicles with electric alternatives. ASIA has already launched the transition with concrete steps: the introduction of 12 electric sweepers in 2023, the planned acquisition of fifteen 6-ton vehicles between 2024–2025, and an additional fifteen 3.5-ton vehicles between 2025–2026, alongside a public tender for further procurement. This initiative reflects the company's recognition of its public role in reducing urban pollution, particularly in a densely populated and environmentally vulnerable city like Naples. The shift toward low-emission mobility is framed not only as a technical upgrade but as a public health and environmental responsibility, aligned with broader community well-being.

During the presentation of the first electric vehicles, the Sole Director emphasized:

“We are working on our plan, which is based on a broad commitment to the health and well-being of citizens, allowing them, alongside tourists, to fully enjoy their Naples. One of the areas we are focusing on is the development of eco-sustainable vehicles. [...] The electric vehicles in our fleet produce zero direct emissions, so they do not contribute to air pollution. Moreover, being much quieter than internal combustion vehicles, they reduce noise pollution as well. In this way, we aim to improve service standards, lower costs associated with fossil fuel use, and simultaneously enhance air quality, quality of life, and ultimately the health of all citizens”.

ASIA’s commitment to decarbonization also extends beyond vehicle technology. The company is integrating digital tracking systems and intelligent interactions between waste containers and collection vehicles, including volumetric sensors and alert systems that allow for real-time monitoring of bin fill levels. These innovations are designed not only to reduce emissions by optimizing collection routes and minimizing mileage, but also to improve service efficiency and resource allocation. As the Director of General Affairs and Plant Development noted, *“The integration of real-time tracking systems and volumetric sensors has allowed us to move from assumptions to precise measurements. Thanks to the Carbon Footprint analysis, we were able to quantify how much fuel, and therefore emissions, could be saved by optimizing collection routes. This technology does not just improve efficiency; it directly contributes to lowering our Scope 1 emissions”.*

In addition, ASIA has launched the smart bin initiative, introducing digitally controlled containers and solar-powered compacting bins in key urban locations. These smart devices regulate access, enable time-bound waste disposal, and automatically notify collection centers when full. Designed to integrate visually with the city’s architectural heritage, the bins also help optimize collection frequency and reduce physical strain on waste workers.

This technological enhancement is complemented by a broader restructuring of the waste collection model, particularly in high-density urban areas. The project “Napoli - Differente nel Cuore” is a strategic initiative aligned with ASIA’s broader effort to implement the CF, aimed at optimizing waste management and reducing the environmental impact of operations. ASIA is shifting away from a uniform door-to-door approach, deemed inefficient in many contexts, toward a hybrid system tailored to local conditions. The strategy involves the deployment of condominium-based recycling stations, neighborhood eco-points, and smart bins with controlled access, while maintaining door-to-door collection only where truly functional. This

reform aims to reduce travel distances, lower fuel consumption and emissions, and improve workforce productivity. Reflecting on the impact of this initiative, the Director stated, *“The reorganization of our collection model, especially in high-density areas, emerged as a strategic response to the inefficiencies identified through our carbon accounting. By adapting service models to territorial needs and limiting door-to-door collection, we have significantly reduced kilometers traveled by our fleet. These decisions were guided by evidence, not intuition, and the reduction in emissions is measurable”*. He added that this also brought tangible economic benefits, with more streamlined logistics and cost savings in fleet management.

The strategy is further enhanced by pilot programs such as the “Vigliena Project”, which introduces full digitalization of waste logistics through the dematerialization of the transport manifest (*“bolla ecologica”*). Replacing paper documentation with a digital platform facilitates service programming, real-time communication of changes, and seamless coordination with waste treatment facilities. This system improves data accuracy, reduces process delays, and enhances overall transparency and accountability, laying the groundwork for a data-driven, circular governance model. As the Sole Administrator highlighted, *“The Vigliena Project is a major step toward smarter and more sustainable logistics. Going from paper to digital transport documents helped us reduce delays and vehicle downtime, issues that the Carbon Footprint analysis had clearly highlighted as a source of unnecessary emissions. At the same time, this action puts us ahead of future regulations, especially the upcoming RENTRI system, which will require full digital tracking of waste. We are not just reacting to rules. We are preparing for them”*. He also emphasized how digitization enhanced decision-making capacity and service accountability, strengthening ASIA’s competitive position as a public utility.

Together, these actions represent a comprehensive and multi-dimensional approach to emission reduction, blending regulatory compliance with technological innovation, urban sustainability, and service efficiency. ASIA’s proactive measures position it as a forward-thinking public utility capable of navigating complex environmental challenges while responding effectively to both institutional pressures and local community needs.

4.4.4 Public Value Outcomes

This section analyzes the outcomes generated by the output activities, that is, the concrete actions through which ASIA translated its strategic objectives into practices oriented toward the

creation of public value. The analysis draws on the conceptual framework outlined in Chapter One, developed by integrating Benington’s four dimensions of public value—economic, ecological, social, and institutional—with Deidda Gagliardo’s hierarchical structure of value levels. This integrated model allows public value to be interpreted not as the mere sum of individual results but as the interdependent outcome of complementary dimensions: economic solidity as the necessary foundation, ecological sustainability as an expansion of impact, social cohesion as the strengthening of community capital, and institutional legitimacy as the guarantee of transparency, accountability, and continuity. In this perspective, the output activities discussed in the previous sections are examined here in terms of their tangible outcomes, showing how they contributed to the generation of public value across its multiple dimensions.

ASIA’s transition toward greater efficiency, financial sustainability, and territorial responsiveness has been pursued through a set of primary activities directly linked to its sustainability strategy. These activities include investments in emissions reduction measures, the digitization of processes, and extensive awareness-raising campaigns, as showed in [Table X](#). Rather than abstract strategic priorities, these represent concrete outputs that served as the operational levers through which broader sustainability goals could be translated into practice. Yet their real significance lies in the outcomes they produced: lower operational costs, expanded revenue-generating capacity, and tangible benefits for citizens in the form of reduced tariffs and improved services. Within this framework, EA acted as a pivotal instrument for guiding investments and supporting the transition from a collection-only model to one incorporating treatment of differentiated fractions. The outcome of this shift was not merely organizational alignment with sustainability goals, but also the strengthening of long-term investment capacity and the ability to close the waste cycle within the territory.

The decarbonization strategy generated economic outcomes that extended well beyond the implementation of new technologies. While outputs such as the restructuring of the collection model, the introduction of smart bins and optimized routes, and the recruitment of additional staff were necessary steps, their true significance lies in the outcomes they enabled. One of the most notable was the measurable rise in the city’s waste sorting rate, which reached 44.7 percent in 2024, up 2.79 percentage points from the previous year (ASIA and ISPRA data). This progress corresponds to 227,290 tons of sorted waste, an increase of 12,829 tons compared to 2023, and a cumulative total of 839,745 tons over the last three years. Improvements were registered across all major waste categories: +12 percent for organic waste, +9 percent for multi-materials, +8 percent for cardboard, +4 percent for paper, +0.5 percent for both glass and

electronic waste (RAEE), and +7 percent for bulky waste (ASIA data). Beyond these operational gains, the economic outcomes translated into direct financial relief for citizens, with nearly 200,000 households benefiting from a reduction in the TARI waste tax. These results demonstrate how cost savings, efficiency gains, and new revenue streams were effectively converted into public value, confirming that Carbon Footprint measurement functions not merely as a monitoring tool but as a strategic lever for delivering economic benefits to both the organization and its community.

The ecological outcomes were equally significant. Outputs such as smart bins with automatic compaction, digital monitoring systems, and fleet electrification were important innovations, but their real contribution lies in the reduction of greenhouse gas emissions, decreased reliance on fossil fuels, and improved air quality in Naples. The implementation of the *Piano degli Spostamenti Casa-Lavoro (PSCL)* for employees—mandated by national legislation—targeted Scope 3 emissions, further broadening the environmental impact by reducing private vehicle use for commuting. Outcomes such as lower CO₂ emissions, reduced noise pollution, and more sustainable waste flows through improved separation and recycling highlight how ASIA transformed operational actions into systemic ecological benefits. The diversion of nearly 840,000 tons of waste from landfills over three years reinforced circular resource use, delivering ecological outcomes that extend far beyond efficiency to contribute to climate change mitigation and the preservation of natural resources.

In terms of social outcomes, educational and engagement outputs—including internal training workshops, the creation of sustainability ambassadors, school-based programs like *Educambiente* and the *OLImpiadi*, and partnerships for campaigns such as *RiciclaEstate* and *Bioplastiche e Comunità*—produced outcomes in the form of enhanced environmental awareness, stronger social capital, and long-term cultural change. These initiatives fostered civic participation and intergenerational learning, embedding sustainability into both employee practices and community life. Complementary projects, such as *Workclimate 2.0*, also generated tangible social outcomes by protecting worker health against climate risks, thereby linking environmental responsibility to employee well-being.

Finally, political and institutional outcomes emerged through outputs such as XHTML-format sustainability reporting, the appointment of a sustainability reporting officer, and compliance with both EU and national legislation (including the PSCL). The outcomes were substantial: greater transparency and accountability, enhanced regulatory compliance, recognition of ASIA's leadership through awards, and the institutionalization of sustainability within governance structures. Moreover, sustainability-oriented reforms created new employment

opportunities, reinforcing ASIA’s legitimacy as a municipal corporation not only delivering services but also providing stable jobs and contributing to the socio-economic fabric of Naples. Taken together, the distinction between outputs and outcomes underscores the transformative role of EA. The outputs—technologies, plans, training, and partnerships—provided the instruments, while the outcomes—economic relief, ecological sustainability, social capital, and institutional legitimacy—demonstrated the real creation of public value. This layered dynamic illustrates how ASIA successfully mediated multiple institutional logics by prioritizing outcomes that extend beyond organizational boundaries to generate tangible benefits for citizens, communities, and the urban environment.

Table 9. Public Value Outcomes.

Public Value Level	Public Value Outcomes	
Economic Value	Economic Outcomes	<ul style="list-style-type: none"> - Increase in waste sorting rate - Tariff reduction - Strengthened financial sustainability
Ecological Value	Ecological Outcomes	<ul style="list-style-type: none"> - Reduction of GHG emissions - Growth in recycling volumes and circular use of resources - Improved air quality and urban environmental conditions
Social Value	Social-cultural Outcomes	<ul style="list-style-type: none"> - Greater environmental awareness and civic participation - Strengthened social capital through education and community campaigns

		- Protection of worker health and well-being
Institutional Value	Political Outcomes	<ul style="list-style-type: none"> - Strengthened transparency and accountability (CSRD reporting) - Enhanced legitimacy and reputation - Expansion of employment opportunities

4.5 Discussion and Conclusions

Figure 12 provides an interpretive model of the empirical findings, illustrating how the implementation of EA has acted as a catalyst for the emergence of Public Value and for the subsequent reconfiguration of the institutional logics that shape the governance of MCs. The model captures the dynamic process through which the organization translates the tensions among multiple logics—business, compliance, community, and environmental—into a coherent orientation toward sustainability and collective benefit.

At the top of the figure, the four institutional logics represent the heterogeneous pressures and expectations that characterize MCs. The business logic emphasizes efficiency, competitiveness, and financial sustainability; the compliance logic ensures conformity with legal and regulatory frameworks, strengthening legitimacy and accountability; the community logic is grounded in social equity, participation, and responsiveness to collective needs; and the environmental logic reflects moral and ethical imperatives of ecological stewardship and protection of natural resources. These logics coexist in a state of structural tension: each introduces different value criteria, often leading to conflicting priorities in decision-making and governance.

The implementation of EA marks the first turning point in this process. EA serves as a mediating and enabling infrastructure, providing the technical, cognitive, and procedural means through which sustainability principles are translated into measurable results. By introducing shared indicators, standardized reporting tools, and data-driven evaluations, EA allows the

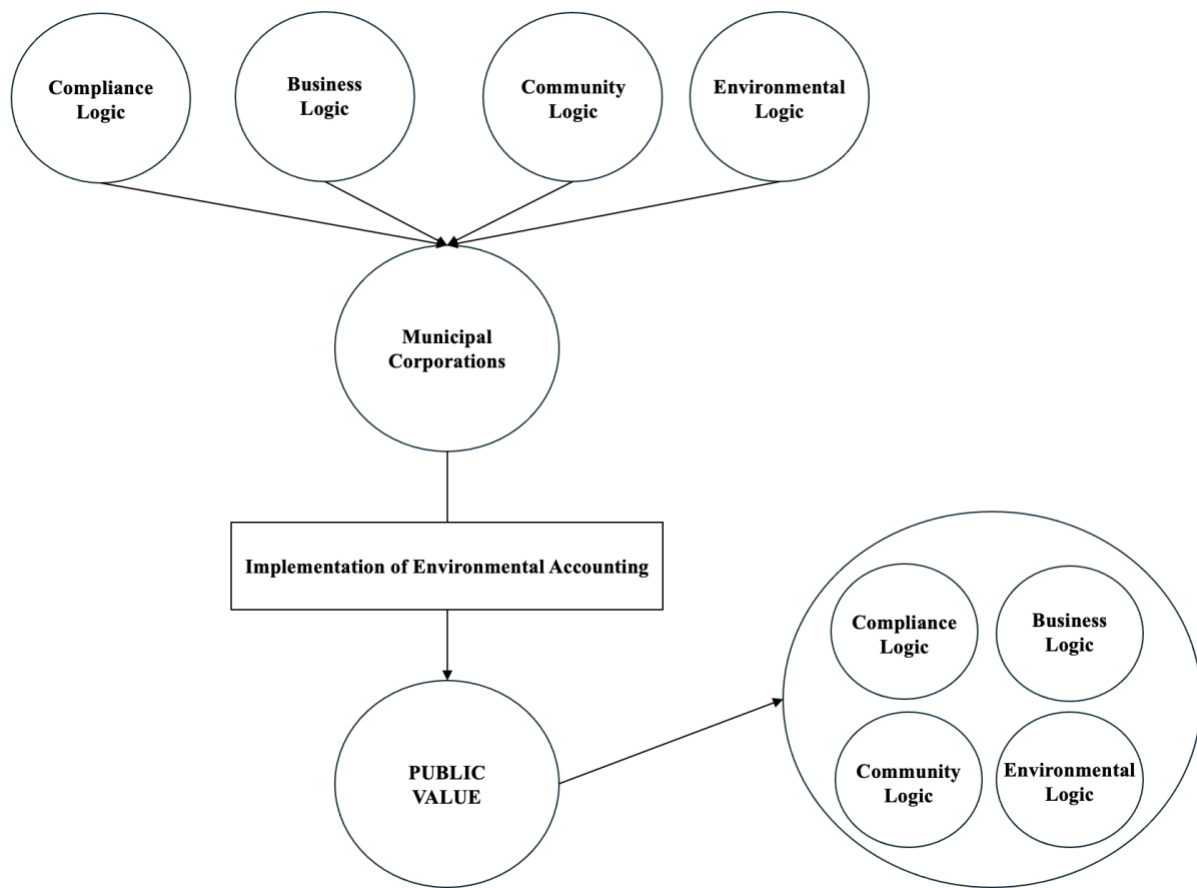
organization to connect operational actions with strategic objectives across economic, social, and ecological domains. In this sense, EA represents the instrumental level of mediation: it does not directly resolve the tension between logics, but rather renders them visible, comparable, and governable. Through measurement, it transforms abstract sustainability goals into concrete evidence of performance and impact.

At the next stage, Public Value emerges as both an outcome and an integrative mechanism. Once the results measured through EA become visible and recognized, Public Value provides the normative space in which the different logics can be reconciled. It acts as a substantive level of mediation, translating competing institutional rationalities into a common orientation toward shared societal goals. Public Value thus embodies the capacity of the organization to integrate efficiency (business logic), legitimacy (compliance logic), inclusiveness (community logic), and ecological responsibility (environmental logic) into a unified model of value creation.

In this light, EA and Public Value are not interchangeable but mutually reinforcing. EA enables the measurement and emergence of public value by providing the tools and language to capture multidimensional outcomes; Public Value, in turn, offers the interpretive and integrative framework that aligns organizational action with the broader purpose of societal well-being. The two elements form a cyclical relationship: as EA reveals the tangible outcomes of sustainability initiatives, Public Value reorients the institutional logics around these outcomes, promoting a progressive alignment between economic performance, social equity, regulatory legitimacy, and environmental stewardship.

Ultimately, the interpretative model shows that the creation of Public Value represents the synthesis of multiple institutional logics within MCs. It is the value generated through EA that allows these logics to coexist and mutually reinforce one another, transforming potential conflict into a source of innovation and long-term sustainability.

Figure 12. The mediating function of Public Value.



In conclusion, this dissertation demonstrates that EA can indeed serve as an effective instrument for both capturing and operationalizing Public Value within organizational contexts. The analysis shows that EA transcends its traditional technical function, evolving into a strategic and cognitive infrastructure that connects measurement with meaning, and accountability with action. By enabling organizations to observe, quantify, and communicate their ecological and social impacts, EA not only enhances transparency but also reshapes managerial priorities and decision-making processes toward long-term sustainability.

The findings suggest that EA contributes to public value creation in two complementary ways. First, by making the invisible visible, it translates complex environmental phenomena into measurable outcomes that can inform governance, performance evaluation, and strategic choices. Second, by embedding sustainability principles into management routines, it activates organizational learning processes that strengthen the connection between efficiency, legitimacy, and collective well-being.

Ultimately, the research confirms the central assumption that what we measure shapes what we do: the act of measuring environmental performance transforms the very logic of value creation, shifting it from a narrow, profit-centered paradigm to a broader conception of value grounded in equity, sustainability, and systemic balance. EA thus emerges not merely as a reporting tool, but as a driver of institutional change and public value generation, enabling organizations to act as stewards of both economic and ecological resources in pursuit of the common good.

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