European journal of volunteering and community-based projects Vol.1, No 2; 2025
ISSN: 2724-0592 E-ISSN: 2724-1947
Published by Odv Casa Arcobaleno

Measuring Social Impact: an analysis of Sustainable Startups

Alessandro Palazzo

Student
Department of Economics and Management, University of Pavia
E-mail: alessandro.palazzo01@universitadipavia.it

Valentina Beretta
Researcher
Department of Economics and Management, University of Pavia
E-mail: valentina.beretta@unipv.it

Purpose

This study investigates how sustainable startups use the Social Return on Investment (SROI) framework to assess and communicate their social value. It aims to explore the advantages and limitations of SROI in early-stage entrepreneurial contexts.

Design/methodology/approach

A qualitative methodology was adopted through a literature review, expert interviews, and two in-depth case studies. These include startups operating in the sustainable innovation space and one accelerator programme. Data were analysed to assess how SROI is applied and its influence on strategic management.

Findings

The findings reveal that SROI supports sustainable startups in legitimizing their social mission, attracting impact-oriented investors, and structuring their value proposition. However, challenges arise due to limited resources, methodological complexity, and evolving business models.

Research limitations/implications

This study is limited by the small sample size and the exploratory nature of the qualitative analysis. Further research with larger samples and quantitative methods is suggested.

Practical implications

The paper offers insights for entrepreneurs, investors, and policymakers seeking to integrate social impact measurement into startup strategy and funding practices.

Originality/value

This research contributes to the emerging field of impact measurement in sustainable entrepreneurship. It proposes the SROI framework as a practical yet adaptable method for early-stage ventures to quantify and communicate their broader societal contributions.

Keywords: Social Return on Investment, Impact Measurement, Sustainable Entrepreneurship, Startup, Social Value Creation, Sustainability Assessment, Theory of Change, Impact Investing, Stakeholder Engagement, Impact Management, Sustainability

Doi: 10.5281/zenodo.15703359

1. Introduction

In recent decades, global challenges such as inequality, poverty, and environmental degradation have intensified due to more frequent extreme weather events and destabilizing geopolitical tensions (Di Vaio et al., 2022). In response, sustainable development—defined by the United Nations (1987) as development that meets present needs without compromising future generations—has become a guiding principle for policy and business alike.

Within this context, sustainable entrepreneurship has emerged as a transformative approach in which start-ups play a central role in promoting innovation aligned with environmental and social goals (Fichter et al., 2023). These ventures aim to balance the "triple bottom line" of economic viability, environmental protection, and social equity (Elkington, 1997; Cohen et al., 2006). Yet, due to their early-stage nature and dynamic environments, sustainable start-ups often lack the tools and frameworks necessary to assess their broader societal impact (Hoogendoorn et al., 2017).

As calls for accountability and transparency increase, robust impact measurement becomes essential. One promising tool is Social Return on Investment (SROI), a framework that quantifies social, environmental, and economic value created per unit of investment (Nicholls & Emerson, 2015; Corvo et al., 2022; Amelio et al., 2025). By expressing impact through a clear ratio, SROI supports sustainable ventures in communicating value, improving internal management, and attracting mission-aligned stakeholders.

This article explores how SROI can be effectively integrated into the strategic management of sustainable start-ups and how it helps bridge the gap in impact assessment practices at the entrepreneurial level.

This research seeks to expand the knowledge of sustainable entrepreneurship by investigating how the SROI paradigm might be used to quantify and convey impact in this context.

Sustainable entrepreneurship is an expanding discipline that incorporates social, environmental, and economic objectives into company models, but, it has unique problems, particularly in terms of impact measurement and transparency. The research questions are derived from a review of current literature on sustainable entrepreneurship, impact measurement frameworks with a stronger emphasis on SROI, and the specific requirements of start-ups attempting to demonstrate social value.

The thesis seeks to provide answers to the following research questions:

- *Research Question 1*: What are the advantages and limitations of applying the SROI method in the context of startups?
- *Research Question 2*: To what extent do sustainable startups integrate impact measurement, such as SROI, into their strategic management processes?

This study contributes to the broader conversation on sustainable entrepreneurship and improve the comprehension of impact measurement frameworks by addressing these topics. Results provide insight into how companies may proactively manage, evaluate, and assess their social impact, thereby promoting long-term sustainability and stakeholder trust.

2. Theoretical framework

This study adopts the theoretical lenses of the Theory of Change (Toc). The ToC is a comprehensive framework that explains how and why a specific intervention is expected to bring about a desired change. The term “Theory of Change” was first formally used in the early 1990s by the ActKnowledge organization and the Aspen Institute Roundtable on Community Change foundation during a project aimed at improving the evaluation of complex initiatives. This approach was later refined and disseminated through the work of researchers such as Carol Weiss, who helped conceptualize the link between social programs and their outcomes through

a series of logical and causal steps. Indeed, according to McLaughlin and Jordan (1999) and Funnell and Rogers (2011), the ToC follows the logic of cause-and-effect models, where changes are influenced by specific actions or interventions. Logic models, in this context, serve as visual tools that illustrate the relationships between the resources utilized, the activities carried out, and the results achieved. In their work, the authors provide guidance on using logic models to enhance the clarity and transparency of a program's causal relationships.

The Theory of Change (ToC) framework outlines a logical sequence from activities to desired long-term change, using the Input-Output-Outcome-Impact (IOOI) model (Kurz & Kubek, 2016):

- *Inputs* are the essential resources (e.g., funding, staff, time, technology) needed to carry out activities (Hehenberger et al., 2013).

- *Activities* are the concrete actions undertaken to create positive change for beneficiaries, such as training or development projects.

- *Outputs* are the direct, tangible results of activities—products or services delivered to beneficiaries (Fitcher et al., 2023).

- *Outcomes* are the changes (positive or negative) experienced by stakeholders due to the use of outputs, like improved employment or access to renewable energy (Hehenberger et al., 2013; Schillebeeckx & Merrill, 2022).

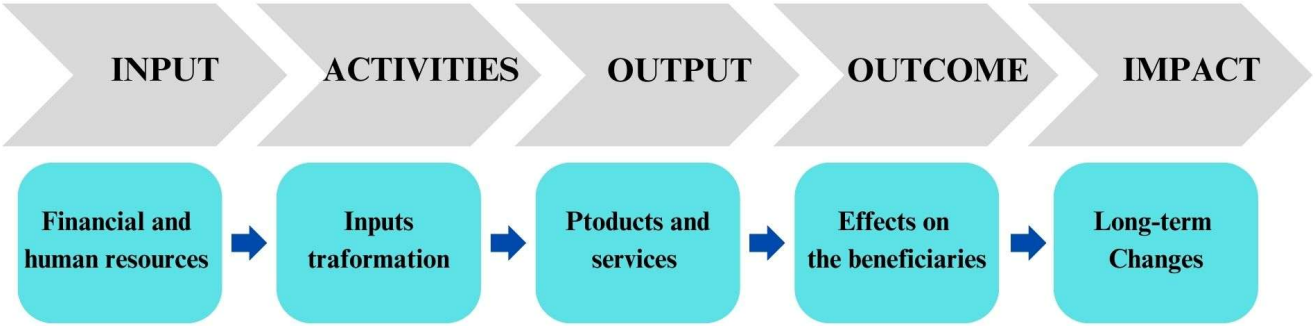
- *Impact* represents the broader, long-term effects of an organization's actions, including both reductions in negative externalities and creation of positive ones, considering

factors like attribution and displacement (Schillebeeckx & Merrill, 2022; Dijkstra-Silva et al., 2022).

The logical flow linking these terms is often referred to as the "Impact Value Chain", which is used synonymously with ToC, and is most commonly used in corporate impact measurement contexts. The Impact Value Chain shows the causal link between activities, outputs, outcomes, and impacts and provides a structured framework for understanding and measuring the effectiveness of an organization's interventions (Hehenberger et al., 2013). ToC is not a static model, it can be adjusted based on new evidence or changing circumstances, allowing programs to adapt and respond to evolving conditions (Kurz and Kubek, 2016). The framework is often represented visually, using diagrams to map the connections between different elements, Figure 1. This helps communicate the theory and makes it easier for stakeholders to understand the program's strategy.

European journal of volunteering and community-based projects Vol.1, No 2; 2025
ISSN: 2724-0592 E-ISSN: 2724-1947
Published by Odv Casa Arcobaleno

Figure 1. Impact Value Chain Framework



Resources (capital, human), invested in the activity	Concrete actions of the organisation	Tangible products from the activity	Changes, benefits, learnings, effects resulting from the activity	Attributions of an organisation's activities to broader & longer-term outcomes
€, number of people etc.	Development & implementation of programs, building new infrastructures etc.	Number of people reached, items sold, etc.	Effects on target population e.g. increased level of education	Take account of actions of others (alternative programs e.g. open air classes); unintended consequences etc.
EUR 50 000 invested, 5 people working on project	Land bought, school designed & built	New school built with 32 places	Places occupied by students: 8	New students with access to education: 2

Source: author's own elaboration based on GECES. (2014), Proposed approaches to social impact measurement in European Commission legislation

The ToC is also used as an impact management framework, as due to its simplicity and application in different contexts, it is one of the easiest impact measurement methods (Bengo et al., 2015) Moreover, it is very often integrated into other impact frameworks as a starting point on which to begin different evaluation methodologies. This is the case, for example, with the calculation of SROI, which bases its process on the construction of an effective ToC

(Nicholls et al., 2015). The Theory of Change almost represents the fundamental prerogative of any impact measurement tool (Ebrahim et al., 2014).

3. Literature review

3.1. Sustainability in business: from compliance to strategic integration

In recent decades, the role of sustainability in business has shifted dramatically—from a peripheral concern driven by external pressures to a core component of strategic management. Historically, companies prioritized short-term financial gains, often neglecting environmental and social considerations unless compelled by regulation or market demands (Bansal & DesJardine, 2014; Geels, 2002). This behavior contributed significantly to unsustainable development (Cohen & Winn, 2007). Today, however, businesses are increasingly seen not just as part of the problem, but as powerful agents of sustainable change (Loorbach & Wijsman, 2013). Sustainability in the corporate world is now understood as a multidimensional and evolving concept grounded in the balance of environmental, social, and economic priorities (Elkington, 1997). Rather than being viewed solely as an ethical responsibility, it is increasingly recognized as a source of long-term competitive advantage (Porter & Kramer, 2011).

A key driver of this transformation is the growing prominence of Environmental, Social, and Governance (ESG) frameworks. Regulatory developments such as the EU's Corporate Sustainability Reporting Directive (CSRD), the Sustainable Finance Disclosure Regulation (SFDR), and the EU Taxonomy require companies to disclose their sustainability performance in a standardized and transparent way. These measures aim to align business operations with broader societal and environmental goals, enhancing both accountability and investor confidence (Hummel & Schlick, 2016; Nampoothiri & Entrop, 2024). Research suggests that effective ESG integration not only improves a company's reputation and operational efficiency

but also helps it manage emerging risks related to climate change and social inequality (Alsayegh et al., 2020; Godelnik, 2021). Tools like the EU Taxonomy further guide firms in identifying and investing in truly sustainable economic activities (Pacces, 2021).

Beyond regulatory compliance, ESG reporting is becoming a strategic differentiator. Companies are using transparency in sustainability performance to build stakeholder trust and enhance market positioning (Amran et al., 2014; GRI, 2016). Despite ongoing challenges such as inconsistent metrics and sector-specific standards, initiatives like the European Sustainability Reporting Standards (ESRS) under the CSRD aim to harmonize sustainability disclosures across the EU. Ultimately, the shift from "business-as-usual" to "sustainability-as-usual" signals a deep transformation in corporate governance. Sustainability is no longer a reactive or secondary concern; it is a strategic imperative. Organizations that embed sustainability into their core strategies are redefining success and helping pave the way for resilient, inclusive, and future-proof economies (Godelnik, 2021). Figure 3. shows the systemic evolution of sustainability in the business context described in the paragraph.

Figure 2. Evolution of Sustainability in Business

3.1.1. Sustainable Entrepreneurship and Its Role in Transitioning Towards Sustainability

Traditional entrepreneurship has historically focused on economic growth and financial return, particularly during the industrial era (Schumpeter & Swedberg, 2013). However, growing concerns about environmental degradation, social inequality, and resource scarcity in the late 20th century led to the recognition that purely profit-driven models were insufficient for addressing global challenges. In response, new entrepreneurial models emerged:

- Social entrepreneurship prioritizes solving social problems while ensuring financial sustainability (Saebi et al., 2019).

- Eco-entrepreneurship or environmental entrepreneurship addresses environmental issues through innovation and business development (Schaltegger, 2002; Bennett, 1991).

While both models consider double bottom line goals (social or environmental + financial), they fall short of a fully integrated approach. This gap is bridged by Sustainable Entrepreneurship (SE), which aligns with the Triple Bottom Line (TBL) framework, balancing economic, social, and environmental objectives (Elkington, 1997). SE has gained prominence as a transformative response to urgent global issues such as climate change, social exclusion, and natural resource depletion (Shepherd & Patzelt, 2011). It combines innovation and entrepreneurial action with sustainability, positioning itself not just as a vehicle for wealth creation but as a mechanism for societal transformation (Cohen & Winn, 2007; Terán-Yépez et al., 2020). The significance of SE has been further recognized through policy frameworks like the UN 2030 Agenda for Sustainable Development, which links entrepreneurship to the achievement of the Sustainable Development Goals (SDGs) (Di Vaio et al., 2022). This has

led to institutional support and a shift in business models toward more responsible, transparent, and socially-oriented practices (Rosário et al., 2022).

Sustainable entrepreneurship is defined by key features that set it apart from traditional business models. It emphasizes green innovation to replace unsustainable systems, promotes collaboration through cross-sector partnerships, and values stakeholder engagement to ensure inclusive and transparent decision-making. Crucially, it incorporates impact measurement using sustainability assessments to validate progress and avoid greenwashing (Carle & Rayna, 2023; Pitz, 2023). These elements work together to align entrepreneurial activity with broader social and environmental goals.

Over the last two decades, academic interest in SE has grown significantly, revealing its potential to reshape entrepreneurial ecosystems and drive sustainable transitions. Empirical studies have shown that SE ventures challenge outdated business models and demonstrate that profitability and sustainability can coexist. As such, sustainable entrepreneurship is emerging as a critical force in guiding the evolution of both business and society toward a more inclusive and resilient future.

3.1.2. Sustainable Startups

Research on sustainable entrepreneurship (SE) initially focused on SMEs but has increasingly turned to startups due to their agility and capacity for innovation (Kuckertz & Wagner, 2009; Hockerts & Wüstenhagen, 2010). Startups are particularly well-positioned to drive transformative change by embedding environmental and social goals from the outset, often prioritizing sustainability over short-term profits (Cohen & Winn, 2007; Shepherd & Patzelt, 2011).

The European Union defines startups as young, innovative, tech-driven ventures with high growth potential and international ambitions. These characteristics also introduce operational complexities—especially when designing sustainability assessment frameworks. Startups with an explicit sustainability mission are often referred to as sustainable startups, impact startups, or born sustainable firms (BSFs). These ventures are founded with the strategic intent to generate positive environmental and social impact while also pursuing economic viability (Knoppen & Knight, 2022). BSFs typically adopt circular economy principles, reduce reliance on finite resources, and build collaborative ecosystems to scale their impact (Karani & Mshenga, 2021; Carle & Rayna, 2023). Literature has clearly distinguished SE from other forms of entrepreneurship. A startup may be classified as: traditional if focused solely on profit, social if prioritizing societal needs, or sustainable if incorporating environmental objectives alongside economic and social ones (Belz & Binder, 2017).

Some scholars argue that the SE process evolves from a Double Bottom Line (DBL) approach to a Triple Bottom Line (TBL) over time, while others believe successful ventures integrate the TBL from the outset (Matzembacher et al., 2019). A startup is considered truly sustainable when it not only pursues impact-oriented goals but also measures and communicates its results using robust, recognized frameworks (Fichter et al., 2023). This brings attention to Sustainability Impact Assessment (SIA)—a process for identifying, evaluating, and structuring sustainability impacts across economic, social, and environmental dimensions (Trautwein, 2021). Although SIA is still an emerging area, especially in the context of startups, it offers a promising approach for embedding sustainability into entrepreneurial strategy and impact measurement (Di Vaio, 2022; Carle, 2023).

3.2. Social value and Impact

The notion of social value creation has become central in contemporary discussions on entrepreneurship, social innovation, and community development. It refers to the collaborative process by which individuals, organizations, and networks generate value that benefits society as a whole, extending beyond mere financial returns (Grieco et al., 2015). This broader perspective emphasizes improvements in social well-being, equity, and access to essential services. An influential contribution to this debate is provided by Sinkovics et al. (2015), who redefine social value as the alleviation of social constraints such as poverty, inequality, and restricted access to basic services. This shifts the focus from traditional economic indicators to a more inclusive and human-centered understanding of value creation.

Social value is inherently linked to sustainable entrepreneurship, which aims to create long-term positive changes. Schwartz (1990) suggests that social value arises when an entrepreneurial initiative, after accounting for the opportunity cost of resources used, results in an overall increase in societal utility. Similarly, Dees (1998) underscores that social value entails durable improvements in society, particularly through entrepreneurial models with a primary mission of generating social benefit, such as social enterprises or mission-driven firms.

The generation of social value also depends on an organization's relationship with its stakeholders. Brickson (2007) highlights the role of organizations in meeting human needs and fostering ethical behavior toward employees, customers, and the broader community. Lazzarini (2020) further explores how firms create social value by addressing pressing societal challenges, including education, healthcare, and environmental sustainability. In doing so, organizations must balance financial, social, and environmental objectives—a notion captured by the concept of blended value (Emerson, 2003; Stiglitz et al., 2009). Consequently, both public and private actors are capable of generating social value. Businesses, in particular, can contribute by improving quality of life, strengthening communities, and distributing value

across a wide network of stakeholders (Kroeger & Weber, 2014; Porter & Kramer, 2011). Social value is thus broad, systemic, and embedded in network-based dynamics (Arvidson & Lyon, 2014).

In contrast, impact refers to the measurable changes that directly result from an organization's actions. Impact reflects a dynamic and causal understanding of transformation, and it is typically assessed through structured evaluation frameworks (Maas & Liket, 2011). While social value addresses wider societal benefits, impact focuses on concrete, attributable outcomes—whether social, environmental, or economic—that emerge as a direct result of a specific intervention (Zahra & Wright, 2016). Importantly, impact is distinct from outputs (immediate deliverables) and outcomes (short- to medium-term effects). It encompasses long-term and systemic changes at the macro level, often serving as the final link in an organization's Impact Value Chain—a concept rooted in the Theory of Change framework (Nicholls et al., 2015; Clark et al., 2004; GECES, 2014).

However, the impact measurement in sustainable start ups presents both advantages and limitations, as outlined in Table 1. and Table 2.

Table 1. The Advantages of Measuring Impact for Sustainable Startups

1. Unlock Long-Term Business Growth and Sustainability	Sustainability measurment allows firms to align with future-oriented goals, encouraging innovation that ensures long-term sustainability and competitiveness. This strategic alignment not only promotes business success but also strengthens resilience to market instability (Dyllick & Muff, 2016). Established sustainable startups have demonstrated how clear sustainability

	criteria may generate market differentiation and success (Fitcher et al., 2023).
2. Build Identity: Establish a Transformative Brand Addressing Societal Challenges and Global Development Goals	Measuring sustainability impact allows companies to establish a distinct brand as transformative agents tackling urgent social and environmental issues. Startups can strengthen their brand reputation and societal relevance by aligning their strategies with frameworks such as the United Nations' Sustainable Development Goals (SDGs) (Freudenreich et al., 2020; van Zanten & van Tulder, 2018). Companies such as Patagonia and Beyond Meat have effectively used this alignment to differentiate themselves while also inspiring trust and loyalty among stakeholders.
3. Ensure Alignment with Impact Standards and ESG Regulations	With the growing emphasis on environmental, social, and governance (ESG) legislation, start-ups that track their impact can ensure compliance by limiting the risks associated with regulatory changes. In the early stages of entrepreneurship, the use of a good Impact Framework (e.g., the SROI) can be critical for the subsequent adoption of standardised tools such as the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB) guidelines for compliance and alignment.
4. Embed Impact Goals in Core Business Operations	Integrating impact measurement enables startups to include sustainability into their fundamental strategy and operations (Schaltegger and Wagner, 2011). By doing so, they can match operational efficiency with their mission, as demonstrated by organizations such as Interface, which effectively cut waste and carbon emissions while increasing revenue.
5. Match Measurement Approaches with Investor and Investee Expectations	Investors are increasingly seeking transparent sustainability criteria to evaluate possible returns and risks (Clark et al., 2015). Start-ups can recruit mission-aligned investors and foster synergistic partnerships by giving a clear measure of impact. This is the case, for example, with venture capital that uses 'impact investment', which is the

	objective to provide beneficial, measurable social and environmental benefit with a financial return (Wohler & Haase, 2022).
6. Optimize Performance Based on Impact Goals and Targets	Continuous monitoring of sustainability KPIs enables companies to discover areas for improvement, assess progress, and modify strategies (Horne, 2019). For example, the B Corporation certification process promotes performance optimization in both social and environmental dimensions (Stubbs, 2017).
7. Improve Stakeholder Engagement	Transparent impact measurement fosters trust and communication among stakeholders, including consumers, employees, and partners (Freeman et al. 2007). Involved stakeholders are more likely to back a start-up's vision and contribute to its success. Furthermore, stakeholder dialogue is crucial for the identification of target outcomes and is the basis for the development of any sustainable impact measurement framework (Fichter et al., 2023).
8. Drive Competitive Advantage	Start-ups with measurable impacts frequently outperform competitors by attracting consumers and partners who prioritize corporate responsibility (Porter & Kramer, 2011). Measuring impact can be a differentiator in saturated markets and a growth driver in the setting of significant environmental and social changes (Matzembacher et al., 2019).

Source: author's own elaboration

Table 2. Main limitations and assessment challenges of start-ups

Problematic characteristics of start-ups:	**Associated assessment challenges of start-ups:**

Informal and Fast-Moving Management Structures	Preserving the consistency and reproducibility of the assessment over time.
Resource Constraints	Facilitating the entire evaluation process, from data collection and documentation to reporting the results.
Volatility in business models and value chains	Addressing both uncertainties and the evolving nature of business models and value chains.
Lack of Historical Data and Market Novelty	Assessing sustainability impacts without considering historical performance data.
Institutional Barriers	Perceived risks of failure increase due to lack of institutional support.
Lack of specific knowledge	Lack of experience in the use of impact measurement frameworks.

Source: author's own elaboration

3.3. Social Impact

By referring to the ToC, it is possible to provide a definition of the general term *impact*, derived from extant research (Grieco et al., 2015; Fitcher et al., 2023; Clark et al., 2004; Ebrahim et al., 2014): *Impact is the quantifiable percentage of the overall outcomes that can be directly linked to the actions, interventions, or policies of an organization or venture. It is computed by separating the activity's precise contribution from what would have happened in its absence while taking additional variables, other people's activities, and unforeseen effects into consideration.*

Impact is a broad and multifaceted concept that encompasses economic, social, and environmental dimensions, aligning with Elkington's (1997) triple bottom line framework. Vanclay (2004) considers this framework a useful foundation for understanding social impact, which specifically refers to the changes generated by an organization's activities. Unlike the broader notion of "impact" or frameworks like the Social Value Chain, social impact carries normative and contextual dimensions that make it difficult to define, identify, and measure (Alomoto et al., 2022). Due to its complexity, the concept of social impact has been widely debated, leading to the development of multiple definitions and methodologies (McLaughlin & Jordan, 1999; Vanclay, 2004; Stephan et al., 2016). It is especially relevant in management studies, particularly within the fields of sustainable entrepreneurship and social enterprise (Trautwein, 2021; Brest & Born, 2013; Di Vaio et al., 2022). A comprehensive definition of social impact is therefore needed to navigate its many interpretations and applications. In particular, along with this study, social impact is defined as *the cumulative and observable impacts of actions, interventions, or behaviors on individuals, communities, and society as a whole, both planned and unintended, good and negative. It comprises long-term, durable changes in knowledge, skills, living situations, beliefs, or social structures caused by specific initiatives, while also reflecting the interdependence of these acts with societal processes.*

3.4. Sustainability Impact Assessment (SIA)

Identifying social impact is complex due to challenges in defining, isolating, and measuring it. As defined by GECES (2014), impact includes the net effects of an intervention after accounting for what would have happened anyway, other actors' influence, and unintended consequences. This requires I) understanding the specific effects on individuals or groups exposed to an intervention and II) Estimating what would have occurred without the intervention.

A major constraint lies in the difficulty of accurately analyzing untreated scenarios (Gertler et al., 2016). In this context, Sustainability Impact Assessment (SIA) emerged as an integrated framework for evaluating the economic, social, and environmental impacts of actions, aligned with the goals of Sustainable Entrepreneurship (Hockerts & Wüstenhagen, 2010; Trautwein, 2021). It evolved from the convergence of Impact Assessment (IA) and Sustainability Assessment (SA) (Waas et al., 2014).

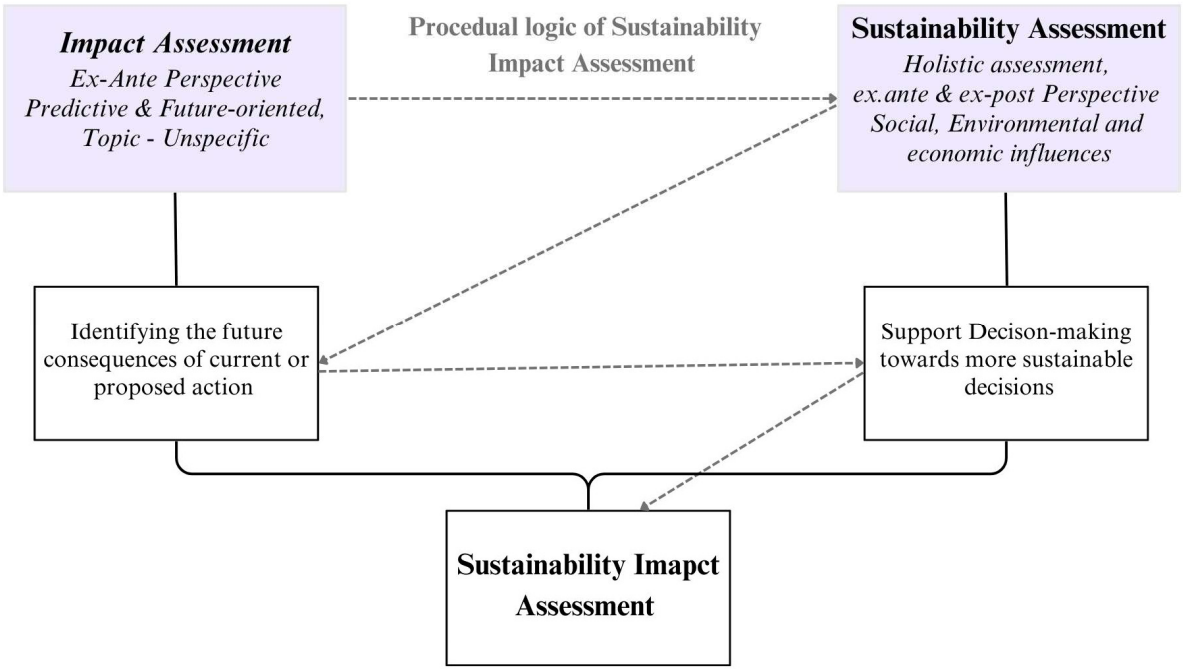
- IA focuses on forecasting the consequences of actions, typically following the impact value chain from inputs to outcomes (Strömmer, 2022).
- SA emphasizes broader sustainability-aligned decision-making, contextualizing the impact in long-term sustainability objectives (Bond, 2012; Pitz, 2023).

SIA combines these approaches to assess the full spectrum of consequences—economic, environmental, and social—while also addressing their interconnections (Sala et al., 2015). Unlike IA or SA alone, SIA supports both ex-ante and ex-post evaluations, offering a comprehensive and adaptable methodology (Lee, 2006; Laedre et al., 2015). According to the OECD (2010), SIA is a strategic tool used to evaluate the combined sustainability effects of policies, programs, and initiatives. It serves both as a decision-making aid and as a method for ensuring alignment with sustainability goals. As Trautwein (2021) notes, SIA not only measures but also organizes and communicates impacts, making sustainability outcomes more tangible and actionable.

Figure 2 illustrates the interrelationships between Impact Assessment, Sustainability Assessment, and Sustainable Impact Assessment. It demonstrates how IA identifies the long-term effects of activities, SA facilitates sustainability-focused decision-making, and SIA

combines these two approaches into a unified framework for holistically examining sustainability impacts.

Figure 3. Dynamic Connections: Impact Assessment, Sustainability Assessment, and Sustainability Impact Assessment



Source: author's own elaboration

4. Social value assessment

Organisations need a systematic procedure to effectively address the various objectives and requirements associated with generating good impact and mitigating negative impacts. Recently, significant progress has been made in the development of measurement and evaluation methodologies, with various approaches formulated by practitioners, foundations and impact investors (Ebrahim and Rangan, 2014; Nicholls, 2009; Rawhouser 2019). The

following Table 3. outline a general eight-step process for managing sustainability and impact in companies:

Table 3. Eight-step process for managing sustainability and impact in companies

1. Objective Definition: Clearly define measurement objectives, units of analysis, and resource availability.
2. Context and Materiality Analysis: Analyze relevant social and environmental challenges and stakeholder priorities.
3. Strategic Alignment: Align organizational strategies with recognized principles like ESG or SDGs.
4. Impact Pathways: Use tools like the social value chain to map the relationship between activities, outputs, and impacts.
5. Indicators and Metrics: Define custom or standardized indicators for measurement.
6. Data Collection and Analysis: Establish methodologies for gathering and analyzing relevant data.
7. Assurance and Communication: Validate results and communicate findings to stakeholders.
8. Integration into Strategy: Ensure that impact evaluation informs long-term decision-making and organizational strategies

Source: author's own elaboration

The Social Return on Investment (SROI) methodology has become one of the most prominent tools for measuring social impact and blended value creation, aiming to integrate social, environmental, and economic dimensions into a unified framework (A Guide to Social Return

on Investment, 2012). Originally developed in 1996 by the Roberts Enterprise Development Fund (REDF) to assess the social outcomes of charitable investments (Gair, 2002; Emerson, 2003), SROI addresses the challenge of valuing non-monetizable effects by assigning financial proxies to social outcomes. Over time, the methodology evolved from a complex and sometimes opaque model into a more standardized and accessible framework, thanks in part to refinements by the New Economics Foundation (NEF) in the 2000s (Higham et al., 2018). The UK played a major role in institutionalizing SROI, notably through the publication of the first SROI Guide in 2009 and its 2012 revision (Nicholls et al., 2009), and through the establishment of Social Value International (SVI), which merged with the SROI Network in 2015 and formalized key principles such as stakeholder engagement, materiality, transparency, and verification (The SROI Network, 2015). SROI calculates a ratio between the value of outcomes and the investment required to achieve them—e.g., a ratio of 4:1 indicates four euros of social value for every euro invested (Faivel et al., 2012). Despite its widespread adoption across Europe and Asia (Farr & Cressey, 2019), SROI has faced critiques for its reliance on subjective proxies and the potential reduction of complex social dynamics into a single numeric indicator (Lingane & Olsen, 2004; Gibbon & Dey, 2011; Klemelä, 2016; Corvo et al., 2022). Nonetheless, efforts continue to improve its reliability, such as enhancing stakeholder participation, increasing transparency, and addressing the "illusion of precision" (Maier et al., 2015; Cooney, 2017). While not without its limitations, SROI remains a leading methodology in the impact measurement field and continues to shape how organizations define, quantify, and optimize their social and environmental contributions.

The Social Return on Investment (SROI) methodology is based on eight principles established by Social Value International to guide organizations in measuring and valuing the social, environmental, and economic outcomes of their activities. These principles emphasize

stakeholder involvement, transparency, materiality, and the use of financial proxies to value what matters, aiming to improve accountability and decision-making.

SROI is widely applied across sectors. Non-profits and social enterprises use it to plan and assess impact, while private companies leverage it to align business strategies with social goals. Investors rely on SROI to evaluate the broader value of their investments, and public sector bodies use it in procurement and policy evaluation to ensure cost-effective and impactful results. Overall, SROI serves as a versatile tool for enhancing performance, impact transparency, and strategic alignment with sustainability objectives.

The calculation of SROI entails a systematic six-step procedure that converts intricate social, environmental, and economic results into monetary values, yielding a ratio that indicates the value generated for each unit of investment. This chapter delineates these processes comprehensively, citing the 2012 Guide to Social Return on Investment.

1. Establishing Scope and Identifying Stakeholders

This preliminary phase delineates the parameters of the SROI study and identifies the stakeholders affected by or contributing to the analyzed activities. Definitive scoping guarantees a feasible analysis, concentrating on pertinent operations, timelines, and organizational priorities. Engaging stakeholders is essential to comprehend the spectrum of changes resulting from the activity.

Key actions

- Articulate the objective and audience of interest for the analysis (ESTABLISHING SCOPE).
- Identify all prospective stakeholders and determine the most effective methods for their engagement (IDENTIFYING STAKEHOLDERS).

- Concentrate on material stakeholders to guarantee feasibility (DECIDING HOW TO INVOLVE STAKEHOLDERS).

2. Mapping Outcomes

Creating an impact map, or theory of change, is fundamental to the SROI process. This map delineates the connections among inputs (resources), outputs (initiatives), and outcomes (the changes arising from those activities).

Key elements:

- Identifying and valuing inputs: allocated resources (e.g., financial support, time).
- Clarifying outputs: Concrete activities or services provided (e.g., training sessions, meals supplied).
- Describing outcomes: changes encountered by stakeholders, encompassing both intended and unintentional consequences.

3. Evidencing Outcomes and Assigning Value

This phase entails gathering data to verify the occurrence of outcomes and attributing monetary value to these outcomes through financial proxies. These proxies facilitate the conversion of social and environmental impacts into economic metrics, allowing for comparison with the invested capital.

Key tasks:

- ✓ Establish metrics for each outcome to assess change.
- ✓ Collect qualitative and quantitative data to validate results.
- ✓ Determining the longevity of results involves assessing the duration of each outcome, acknowledging that not all changes are permanent.

- ✓ Allocate financial proxies to results by employing research, benchmarks, or stakeholder input.

4. Establishing Impact

Upon establishing and assessing outcomes, this phase enhances the analysis by distinguishing the value directly linked to the activity. Adjustments consider inevitable changes (deadweight), the influence of others (attribution), and unintended consequences such as displacement.

Key calculations:

- Deduct deadweight (alterations that would have occurred without the intervention).
- Attribute outcomes to multiple factors (attribution).
- Account for drop-off, indicating the reduction in impact over time.

5. Calculating the SROI

The SROI ratio is calculated by summing the monetized benefits and juxtaposing them with the total investment value (total value of inputs). Here a sensitivity analysis is performed to evaluate the robustness of assumptions and identify critical value drivers.

Key steps:

- Determine the net present value (NPV) of the outcomes.
- Calculate the SROI ratio
- Conduct sensitivity analysis to evaluate the robustness of results under varying assumptions.

The SROI formula determines the ratio of the social, environmental, and economic value produced by an activity or organization to the total investment necessary to achieve that value. The formula is expressed as follows:

$$SROI\ Ratio = \frac{Net\ Present\ Value\ of\ Outcomes\ (NPV)}{Net\ Present\ Value\ of\ Investments}$$

Where:

1. Net Present Value of Outcomes (NPV):

This is the total value of all monetized outcomes (benefits) over the analysis period, modified for their timing through the application of a discount rate. It encompasses solely the results directly linked to the activity, avoiding deadweight, displacement, and attribution.

Net Present Value of Outcomes (NPV) = [Present Value of Benefits(PV)] - [Value of Investments].

$$PV = \sum_{t=1}^{n} \frac{\text{Value of Outcomes in Period t (Rt)}}{(1+r)t}$$

Rt: net cash flow

t: Time period (e.g., years).

r: Discount rate used to reflect the time value of money (usually set at 3.5%).

2. Value of Investments:

This covers all resources allocated to the activity, including funding, time, and other inputs, quantified in monetary terms.

6. Reporting, Using, and Embedding

The concluding phase involves documenting the analysis, communicating findings to stakeholders, and integrating SROI techniques into organizational procedures. Transparent reporting guarantees accountability and offers actionable insights for decision-making.

Key outputs:

- Summary of methodologies, conclusions, and recommendations in the SROI report.
- Demonstrating findings to stakeholders, emphasizing the value generated.
- Incorporation of SROI principles into continuous planning and assessment.
- Assurance procedure, if practicable.

Both benefits and limitation of applying the SROI methodology have been outlined in extant research (Table 4 and 5).

Table 4. Benefits of applying the SROI methodology

Used For Evaluative (Proving) And Forecasting (Improving) Analysis	SROI analysis can be applied in two distinct ways (Corvo et al., 2022; Mook et al., 2015; Nicholls et al., 2012).: - Evaluative SROI: This analysis is performed retrospectively, assessing outcomes that have already occurred, utilizing actual data from an organization's management systems. It enables enterprises to convincingly illustrate their effect to stakeholders. - Forecasting SROI: This prediction methodology assesses the prospective social value that will be generated if intended actions fulfill their objectives. It depends on historical data, research, and analogous case studies to guide decision-making. By enabling both proving and improving, SROI supports evidence-based impact assessment while fostering a continuous improvement cycle in organizational strategy (Arvidson et al., 2010).
A Holistic Approach to Value Measurement	In contrast to conventional financial analysis, SROI integrates economic, social, and environmental factors, embodying the principle of blended value (Emerson, 2003). SROI facilitates firms in making informed decisions that extend beyond mere financial viability by monetizing social and environmental impacts.
Enhanced Decision-Making and Strategic Planning	SROI enables organizations to assess their activities holistically, facilitating improved decision-making and resource allocation (Nicholls et al., 2012). Organizations can enhance investments to maximize social value by presenting quantitative evidence of impact.

Improved Stakeholder Engagement	A fundamental premise of SROI is stakeholder involvement, guaranteeing that individuals impacted by an organization's operations participate in the assessment of impact (Nicholls, 2017). This participatory method promotes transparency, accountability, and a more robust relationship between organizations and their communities.
Increased Credibility for Fundraising and Investment	For nonprofit organizations and social enterprises, SROI functions as an effective reporting instrument that conveys the extensive impact of their operations to funders, investors, and politicians. Numerous grant-making organizations and conscientious investors employ SROI to appraise financing bids and evaluate long-term results (Corvo et al., 2022; Nicholls et al., 2009).
Alignment with Policy and Public Sector Priorities	Governments and public sector commissioners utilize SROI to guarantee that public money are allocated to activities that generate the maximum social value. The concept facilitates value-for-money evaluations, ensuring that decisions prioritize long-term social advantages above immediate cash expenditures (The SROI Guide, 2012).
Flexibility Across Different Sectors	SROI is applicable to diverse organizational categories, encompassing nonprofits, social entrepreneurs, corporations, public agencies, and funding entities. It offers a scalable methodology suitable for assessing either a particular program or an entire company, adaptable to various operational circumstances (Farr and Cressey, 2019; Maier et al., 2015).

Source: author's own elaboration

Table 5. Limitations of applying the SROI methodology

Subjectivity in Assigning Financial Proxies	One of the most debated aspects of SROI is the monetization of social outcomes, which often relies on financial proxies that may not always be precise or universally accepted (Gibbon & Dey, 2011; Cooney, 2017). This presents the possibility of an illusion of accuracy, wherein intricate social repercussions are distilled into singular monetary values, thereby oversimplifying reality (Klemelä, 2016).
High Resource and Time Requirements	Executing a comprehensive SROI analysis needs extensive data gathering, stakeholder involvement, and financial modeling (Corvo et al., 2022). This can provide a significant obstacle to implementation for smaller businesses with constrained resources and time management issues. (Mook et al., 2015).

Challenges in Long-Term Outcome Measurement	SROI depends on forecasting the duration of outcomes and implementing modifications for drop-off and attribution. Nonetheless, social transformation is frequently affected by various external influences, complicating the exact isolation of a singular intervention's impact (Maier et al., 2015).
Risk of Overemphasis on Quantification	Despite SROI's incorporation of qualitative and quantitative data, there is a propensity to emphasize the SROI ratio, potentially resulting in overly simplistic impact evaluations (Nicholls et al., 2012). The quest for a singular numerical value may obscure the overarching narrative of the change process.
Lack of Standardization in Limited comparability	In contrast to conventional financial reporting requirements, social impact measurement does not possess globally accepted financial proxies. This inconsistency may result in unpredictability in SROI evaluations, complicating comparisons among organizations and projects (Corvo et al., Gibbon & Dey, 2011).
Potential for Over-Claiming Impact	Ensuring precision in impact attribution poses a significant difficulty in SROI. Organizations must meticulously distinguish the changes they directly induce from those affected by external forces. Exaggeration can compromise the integrity of SROI outcomes, fostering doubt among financiers and policymakers (Green, 2019).

Source: author's own elaboration

5. Methodology

This study adopts a deductive and qualitative research design, applying existing theoretical frameworks—particularly the SROI methodology—to examine impact measurement in sustainable startups. A multiple-case study approach was selected to explore how these businesses apply SROI in practice, given the field's early-stage development and lack of standardized procedures. The qualitative nature of the research allows for an in-depth understanding of the challenges, drivers, and practical relevance of impact measurement in emerging ventures. The two startups examined— Startup A and Fourgreen—participated in Company 1's accelerator program, which integrates impact methodologies like SROI. Data was collected through semi-structured interviews with key stakeholders, including the startups' founders, Company 1 representatives, and experts from Company 2, to explore diverse

perspectives and uncover insights on the feasibility and value of SROI in real-world entrepreneurial contexts.

5.1.Data Collection

The data collection began with an expert interview with Company 2, a company specialized in SROI and impact measurement, which also provided relevant content and case studies involving Startup A and Fourgreen. These startups had applied SROI as part of their collaboration with Company 1. This initial input enabled a practical view of the methodology's application beyond theoretical constructs. Following this, Company 1 facilitated access to the startup founders, who shared detailed reflections on their experiences with impact assessment, stakeholder engagement, and the practical strengths and limitations of SROI. The combination of insights from expert advisors, intermediary organizations, and entrepreneurs created a robust, triangulated data set, enhancing both the credibility and depth of the research findings on how SROI can be effectively applied in the sustainable startup ecosystem.

5.2.Interview protocol

The interviews for this research were arranged in advance to ensure structured and meaningful discussions. Company 1 facilitated the connection with the two startups, arranging online meetings with their representatives. Company 2, on the oher hand, was contacted directly. The three people interviewed were:

- Interviewee 1, CEO and Co-founder of Startup A.
- Interviewee 2, Co-founder Startup B.

- Interviewee 3, Co-founder of Company 2 & Research Fellow at the University of Milan-Bicocca.

The interview protocols were sent a few days before the online meetings to the respective interviewees. Two different protocols were prepared: one for the two startups and a more specific one for Company 2. Both were reviewed and approved in advance by the thesis supervisor to ensure relevance and clarity. The questions have been divided and sorted by type and focus area as follows.

European journal of volunteering and community-based projects Vol.1, No 2; 2025
ISSN: 2724-0592 E-ISSN: 2724-1947
Published by Odv Casa Arcobaleno

Table 6. Interview Protocol

Type of Questions	Focus Area	Questions to Startups	Questions to Company 2
Transitional Questions	***Individual knowledge***	When was your startup created?	
		In which sector would you say your startup operates?	Could you briefly introduce your organization, its mission and the sustainable impact you want to achieve?
		Is your startup formally registered as a benefit corporation?	What were the main motivations that led you to collaborate with Company 1 for the SROI evaluation of their Startups?
		Is your startup certified as a B-corp?	
	Organizational knowledge		
		What are the main challenges your company has faced during its entrepreneurial phases?	How do Company 2's mission and values align with the projects of the startups being evaluated?
		When did you join the Company 1 accelerator?	
Key Questions		Could you briefly introduce your startup, its mission and the sustainable impact you want to achieve?	
		Is your startup aligned with one or more of the UN Agenda 2030 Sustainable Development Goals (SDGs)? If so, which ones?	
	Sustainability Impact Assessment		
		Do you take a sustainability-focused approach to your business processes?	Among the three startups analyzed (Ricehouse, Startup A, Startup B) was there any that had already established a framework for measuring impact?
		How does your organization define and prioritize social or environmental impact? (specific policies or frameworks for impact measurement)	Which elements of the context (e.g. reference sector, declared social/environmental impact) did you consider as priorities in the initial evaluation phase?

		Why did you decide to measure your impacts?	
		Had you already established a Theory of Change (ToC) before using SROI?	
		What are the challenges you have encountered in assessing your impact? (e.g. rapidly evolving situations, resource constraints, volatile business models, early stage of assessment, lack of specific knowledge).	
	Social Return On Investment (SROI) Framework	What inspired you to use the SROI methodology to measure the impact of your startup?	Could you describe the main stages of the SROI evaluation process you adopted?
		When did you start using it?	How long did it take to arrive at a true and realistic calculation?
		How long did it take to arrive at a true and realistic calculation?	Have you outlined a Theory of Change for each startup?
	Practical Application of SROI		How was the investment amount (SROI formula denominator) established?
		What steps did you take to identify and quantify your impact?	How did you determine the relevant impacts and outcomes?
		Were you helped with the calculation and application of the methodology?	What specific tools or methods did you use to collect the necessary data?
		How did you determine and monetize social or environmental outputs?	How did you determine and monetize social or environmental outputs?
		What challenges have you encountered in applying SROI? (e.g., data collection, stakeholder engagement, assignment of financial proxies, or resource constraints).	What challenges have you encountered in applying SROI? (e.g., data collection, stakeholder engagement, assignment of financial proxies, or resource constraints).
		Of the outcomes identified, which were the most difficult to quantify?	Of the outcomes identified, which were the most difficult to quantify?
			How did you involve the startup in the evaluation process, and what level of collaboration did you observe?

			How was the correction of the generated impact (deadweight, attribution, dropp off) done?
	Stakeholder Engagement	How have you involved stakeholders (e.g., customers, employees, partners, communities) in the process of measuring impact using SROI?	How have you involved stakeholders (e.g., customers, employees, partners, communities) in the process of measuring impact using SROI?
		Was stakeholder input useful to you in refining your SROI analysis or identifying relevant outcomes?	Was stakeholder input useful to you in refining your SROI analysis or identifying relevant outcomes?
		Has a subsequent Assurance activity been carried out on the SROI calculation process?	Has a subsequent Assurance activity been carried out on the SROI calculation process?
	Reflection and Insights	In your experience, what are the benefits of using SROI as an impact measurement tool in a startup context?	In your experience, what are the benefits of using SROI as an impact measurement tool in a startup context?
		What are the limitations instead?	What are the limitations instead?
		Has the use of SROI helped strengthen the communication of your transparency in terms of Social Responsibility?	Are you continuing to monitor the assessments made in 2023 and have you maintained a dialogue in this direction with startups?
		How has using SROI influenced your strategic decisions or your approach to scaling impact?	How did the assessment help improve the startup's awareness or strategies regarding its impact?
		Do you think that SROI is sufficient to understand the social/environmental value of an activity or should it be supported by further indicators or methodologies?	Has the evaluation process been adapted and built specifically and proportionally for each startup?
			Do you think that SROI is sufficient to understand the social/environmental value of an activity or should it be supported by further indicators or methodologies?
			Do you think SROI can help attract investors who are focused on achieving a positive impact (impact investing)?
	Fundraising Phase	Were the investors you interacted with or who invested in your company only interested in the potential for profit or also in the potential to contribute to achieving a positive impact? (impact investing)	

		Has SROI or your impact measurement in general been useful in accessing new funding and communicating better with investors?	
		Have you ever received public funding from entities interested in the sustainable impact your startup wants to achieve?	
Closing Questions	***Future Outlook and steps***	As your startup grows, how do you plan to evolve your impact measurement practices? Do you think SROI plays a significant role in this process?	As your startup grows, how do you plan to evolve your impact measurement practices? Do you think SROI plays a significant role in this process?
		Do you think that the SROI methodology is easily adaptable to different startup contexts, with the assignment of specific KPIs?	Do you think that the SROI methodology is easily adaptable to different startup contexts, with the assignment of specific KPIs?
		What recommendations would you give to other sustainable startups that are considering SROI for their impact assessment?	What recommendations would you give to other sustainable startups that are considering SROI for their impact assessment?
		Do you think that in the context of startups, common reporting and standards for impact measurement are necessary?	Do you think that in the context of startups, common reporting and standards for impact measurement are necessary?
		Are there any aspects that were not covered during the interview that you consider important?	Are there any aspects that were not covered during the interview that you consider important?

6. Results

6.1. Case Study: Company 1

Launched in 2020 as part of a major open innovation strategy, Company 1 is a School of Entrepreneurship committed to fostering an entrepreneurial mindset and supporting the development of sustainable start-ups. With a network of over 10,000 professionals and more than 130 ventures supported in fields such as sustainable mobility, agritech, the circular economy, and renewable energy, the initiative operates both in Italy and internationally, with particular attention to African markets.

Company 1 is structured around three main pillars: Origination & Intrapreneurship, which promotes idea generation and internal innovation processes; Startup Acceleration, which delivers incubation and scaling programmes through eight dedicated hubs; and Impact Assessment, where ESG and SROI methodologies are applied to monitor and strengthen the social, environmental, and economic value generated. Through this integrated model, Company 1 plays a strategic role in aligning sustainability and innovation within the broader corporate ecosystem.

6.2.SROI Application Example 1: Startup A

Startup A is the innovative startup born in 2019 in Catania-Sicily, with the mission of revolutionizing the textile and tanning industry with sustainable alternatives. Startup A has produced the first bio-based material Made in Italy: a sustainable and ethical alternative to traditional leather. Following the circular economy principles, the company transforms

agricultural by-products-waste from oranges and cactus production-into high-quality, low environmental impact, cruelty-free alternative materials for fashion, automotive, furniture, and nautical applications. Oranges and cacti are among the most iconic fruits of Sicily. The annual production of 1.4 million tons of their by-products costs both in economic and environmental terms for the island. Startup A aimed to revitalize these resources by creating a sustainable and vegan material that would benefit both Sicily and the global environment.

Table 7. Overview of Startup A

Description	Industry	Foundation Year	Headquarters	Team Members (N.)	Main Sustainability Commitments
The first 100% made-in-Italy biobased polymeric material, an alternative to animal skin, made from the by-products of Sicilian oranges and cacti, which is already being used to make furniture, bags and more.	Textile and Tanning	2019	Catania, Sicily	4 women 1 man	Circular economy principles Transparency of its supply chain through Blockchain Certification 2.57 kg of CO2 for each square meter of product Certified for ISO 9001:2015

Source: author's own elaboration

The Data Assessment Process and Calculation Process on the Startup A startup is described within the "Methodological Note of Startup A SROI" (2023) produced by Company 2 at the end of the apllication of the SROI methodology. The main points of this document will be described within this of paragraph and the following. While Figure 4. summarizes the main stages of the Impact Chain, framework supporting the methodology applied by Company 2.

Figure 4. Genaral Impact Chain

Source: author's own elaboration based on "Methodological Note of Startup A SROI" (2023).

The intervention was carried out between October 2023 and February 2024 by a team from Company 2 and ELIS. The process is structured into three key phases:

1. Assessment (Preliminary Evaluation)
2. Readiness and Execution
3. Impact Measurement and SROI Calculation

In the first phase (*Preliminary Evaluation*) preliminary discussions started with Ohskin to delineate the parameters of the analysis and the attributes of the object under evaluation. Furthermore, pertinent papers including financial statements, historical data, reports on non-financial information, if applicable, and supplementary sustainability reports from Startup A were examined. Subsequent to the identification of principal stakeholder engaged in the impact value chain. Ultimately, the identification of critical impact areas derived from the startup's value proposition, associated with the macro areas where Ohskin realizes the most significant positive impacts. Relevant macro areas then were enhanced in the evaluation process, and they are as follows:

- CIRCULAR ECONOMY (Environmental area)
- SUSTAINABLE MANAGEMENT OF BUSINESS PROCESSES (Environmental area)
- EMPLOYMENT AND ECONOMIC GROWTH (Social area)

In the second phase (*Readiness and Execution*), an evaluation was performed to examine the startup's preparedness to attain its impact objectives. An analysis was conducted to assess the strategic alignment between the business model and impact metrics. A comprehensive mapping of pertinent resources and data for the assessment process was conducted, with the identification of potential barriers to realizing the expected impact.

The last phase (*Impact Measurement and SROI Calculation*) is the core of the evaluation process, where the actual impact generated by Startup A is quantified, monetized, and assessed using the SROI (Social Return on Investment) methodology. The goal is to determine how much social, environmental, and economic value is created in relation to the investments made. This phase includes several key stages, which are listed below.

Definition of the Impact Chain

Initially an Impact Chain (based on Toc) is structured, this framework links the inputs, activities, outputs, and outcomes of Startup A's operations, ensuring a comprehensive view of its impact. At the end, a visualizable Impact Chain will be produced (Table 8.). The key steps include:

- Identification of stakeholders: mapping all players directly and indirectly affected by Startup A's activities (e.g., customers, employees, environmental groups, policymakers).
- Outputs evaluation: defining the tangible and measurable results of Startup A's activity, such as the volume of bio-based polymer produced, reduction of disposal costs for food and cosmetic waste, reduction in CO2 emissions, and job creation.
- Outcome analysis: identifying medium- to long-term effects, including environmental benefits, economic opportunities, and sustainability contributions.

In this phase, based on the data provided by Startup A and an initial construction of the value chain, it was possible to establish a Duration of 5 years, defining the lifecycle of the generated impact. Specifically, the duration goes from 2023 to 2027, allowing for a *forecasted calculation* (*Ref. 3.4.4 Benefits of applying the SROI methodology*).

Quantification of Outcomes

Each outcome is assessed using distinct indicator that reflect its social, environmental, or economic importance. Company 2 selected the most appropriate indicators from its database, which includes a set of over 4,000 impact chains classified as "assured," meaning they have been internationally verified for measuring social return. Each outcome quantity indicator is associated with a specific unit of measurement appropriate to what has been measured. Examples of key indicators utilized for Startup A consist of:

- OUTCOME: reduction of disposal costs for food and cosmetic waste (oranges and prickly pear)

  INDICATOR: Quantity of food waste reused

  TOTAL QUANTITY (UNIT OF MEASUREMENT): 93.39 (tons_oranges+cactus)
- OUTCOME: reduction of water consumption in the production process

  INDICATOR: water consumption saved compared to leather production

  TOTAL QUANTITY (UNIT OF MEASUREMENT): 177,198 (Nm3_H2O).
- OUTCOME: increase in direct employment

  INDICATOR: number of jobs created directly and indirectly

  TOTAL QUANTITY (UNIT OF MEASUREMENT): 10 (N.).

Monetization of Inputs and Financial Proxy Application

In this phase, the inputs, the resources necessary to generate each output and outcome, are monetized. Each value is extracted from the Business Plan and/or Financial Plan of Startup A,

which outlines the funding, operational expenses, and capital invested to sustain and scale the business. The methodological note does not provide references to each specific input but only reports the total value, which corresponds to the investment (the sum of all discounted inputs, i.e., the NPV of investments).

NPV of Investments = € 6.962.229

Subsequently, *financial proxies* are allocated to each outcome to monetize the impact. This means quantifying non- financial benefits in monetary terms, utilizing industry standards and reputable sources such as:

- PROXY: cost of wet waste disposal (€/ton) – PROXY VALUE PER UNIT: 90
- PROXY: cost of water (€/Nm3) – PROXY VALUE PER UNIT: 1.2
- PROXY: Social value per hour of work integration – PROXY VALUE PER UNIT: 27

Application of Mitigation Factors

The analysis also contains impact mitigators, which aid in determining the portion of influence that can be directly attributable to the project and its operations. The values listed below were generated using the Company 2 platform's circular economy supply chain benchmark and data acquired throughout the assessment. Given the startup's early-stage nature, stricter mitigation values were applied than for fully developed firms. Mitigation factors range from 0 to 100 and indicate the proportion of impact directly attributable to the examined action. The higher the value, the less impact that can be attributed to startup’s activity.

Deadweight = 33 % Attribution = 37 % Displacement = 0 % Drop-off 10 = %

Tabular visualization of the Impact Chain

Table 8. Ohskin Impact Chain

Macro Area	Output	Outcome	Indicator	Total Quantity (unit of measurement)	Proxy	Proxy Value per Unit	Total NPV
CIRCULAR ECONOMY	Organic cultivations and by-products of the cosmetic and food industry	Reduction of disposal costs for food and cosmetic waste (oranges and prickly pear)	Quantity of food waste reused	93.39 (tons_oranges+cactus)	Cost of wet waste disposal (€/ton)	90	15,339.83
SUSTAINABLE MANAGEMENT OF BUSINESS PROCESSES	Sustainable composition	Reduction in the use of raw materials thanks to the total composition of the product	Quantity of CO2 avoided	112 (tCO2)	Social cost per ton of CO2	167	34,135.96
SUSTAINABLE MANAGEMENT OF BUSINESS PROCESSES	OA21	Increase in the use of animal-free materials	Quantity not used for leather production	3735 (cows/kg leather)	Economic value per avoided animal	1800	3,756,089.79
SUSTAINABLE MANAGEMENT OF BUSINESS PROCESSES	Innovative and sustainable production process	90% reduction in emissions in the production process compared to a product created with conventional PVC	Quantity of CO2 avoided	61,354 (tCO2)	Social cost per ton of CO2	167	18,699,802.86
SUSTAINABLE MANAGEMENT OF BUSINESS PROCESSES	Innovative and sustainable production process	Reduction of water consumption in the production process	Water consumption saved compared to leather production	177,198 (Nm3_H2O)	Cost of water (€/Nm3)	1.2	388,076.85
EMPLOYMENT AND ECONOMIC GROWTH	Work	Increase in direct employment	Number of jobs created directly and indirectly	10 (N.)	Social value per hour of work integration	27	492,766.80

Source: author's own elaboration based on Methodological Note of Startup A SROI, 2023, Company 2

After all the previous phases, it is finally possible to visualize Startup A's Impact Chain, which is essential for the final calculation of the SROI ratio. For each row, starting from the previously

identified macro-areas, the relevant outputs and outcomes are listed, with their quantities measured using predefined indicators and units of measurement. The quantities are then monetized by multiplying them by the corresponding financial proxy and subsequently discounted at a rate of 3.5%. In the last column, the various Net Present Values (NPV) of each outcome are listed, with their total sum representing the NPV of Startup A's social and environmental impacts.

Net Present Value Of Outcomes (NPV) = € 23,386,212.10

Calculation of SROI Ratio

Finally, the SROI is calculated using the following formula (*Ref. 3.4.3 Calculation of SROI ratio*):

$$SROI\ Ratio = \frac{Net\ Present\ Value\ of\ Outcomes\ (NPV)}{Net\ Present\ Value\ of\ Investments}$$

The results indicate:

NET PRESENT VALUE OF OUTCOMES (NPV) = € 23,386,212.10

NET PRESENT VALUE OF INVESTMENTS = € 6,962,229

FINAL SROI RATIO = 3.37

This means that for every €1 invested in Startup A, €3.37 of social, environmental, and economic value is returned to the community.

6.3.SROI Application Example 2: Startup B

Startup B is a pioneering startup, born in 2020 within the Company 1 ecosystem, based in Monza, Lombardy, committed to providing comprehensive and innovative energy efficiency and environmental sustainability services to the food and beverage distribution sector within the HoReCa channel in Italy. The company has patented its own LCA tool that emphasizes the ideas of decarbonization and circular economy, assisting companies in moving to more sustainable operating environments. Startup B defines itself as a Climate Hub with expertise in carbon management, seeking to facilitate the green transition for businesses, beginning with the measurement of emissions and proceeding through the recommendation of mitigation and reduction actions.

Table 9. Overview of Startup B

Description	Industry	Foundation Year	Headquarters	Team Members	Main Sustainability Commitments
Innovative startup with the goal of offering innovative integrated energy and environmental efficiency services for Horeca food&beverage distribution companies in Italy	Climate Tech	2020	Monza, Lombardy	1 woman 4 men	LCA tool to measure CO 2 emissions of comapanies Transparency of data generated through Blockchain Certification Provider of technological solutions to reduce or off-set emissions Certified for ISO 14040: 2021 and ISO 14044:2021

Source: author's own elaboration

Similarly, "Methodological Note of Startup B SROI" (2023) drafted by Company 2 describes the data gathering, assessment procedure, and SROI calculation. The primary phases of the procedure (Assessment Preliminary Evaluation, Readiness and Execution, Impact Measurement, and SROI Calculation) are the same as in the Startup A case, hence they will not be explained again in depth. Instead, the following section will highlight the key

elements that define Startup B's Impact Assessment and give a tabular representation of its Impact Chain (Table 10.). The intervention was carried out between October 2023 and February 2024 by a team from Company 2 and ELIS and relevant insights are listed below.

The relevant macro areas, where Startup B realizes the most significant positive impacts, that were enhanced in the evaluation process are:

- SUSTAINABLE ARCHITECTURE (Environmental area)
- ENERGY EFFICIENCY (Environmental area)
- NETWORKING (Economic area)
- EDUCATION (Social area)
- SUSTAINABILITY (Environmental area)
- EMPLOYMENT AND ECONOMIC GROWTH (Social area)

The impact life cycle (Duration) considered for the project is 4 years calculated from the start-up constitution (2020) until the year of data collection and measurement (2023). In this case, unlike Startup A, on the basis of the data received from Startup B and the identification of the Stakeholder-Output-Outcome chain, an *evaluative calculation* was made, thus an evaluation of the impact already generated by the start-up (Ref. 3.4.4 Benefits of applying the SROI methodology).

Again, Company 2 selected the most appropriate indicators and financial proxies to quantify and subsequently monetise the Outcomes resulting from the Impact Measurement phase (Table 10.). Regarding the monetisation of inputs, Company 2 analysed business plans and financial statements to determine resources and fundings strictly linked with the generation of outputs and outcomes. This determined the total amount of invetsment that discounted was of the value of:

NPV of Investments = € 686.153

Also for Startup B, the analysis has impact mitigators that allow only the impact actually attributable to the startup's activities to be considered. The following values were calculated on the basis of the energy supply chain benchmark of the Company 2 platform and on the basis of the relevant data during the evaluation. The higher the value, the less the impact attributable to the intervention. The reported mitigators are average values, each outcome area has specific mitigators attached.

Deadweight = 6 % Attribution = 9 % Displacement = 0 % Drop-off = 6 %

Table 10. Startup B Impact Chain

Macro Area	Output	Outcome	Indicator	Total Quantity (unit of measurement)	Proxy	Proxy Value per Unit	Total NPV
SUSTAINABLE ARCHITECTURE	16 units from class E to class A2	Reduction of CO2 emissions	Tons of CO2 avoided	168.7 (tCO2)	Social cost per ton of CO2	167	80,656.44
SUSTAINABLE ARCHITECTURE	16 units from class F to class B	Reduction of CO2 emissions	Tons of CO2 avoided	208.3 (tCO2)	Social cost per ton of CO2	167	99,589.43
SUSTAINABLE ARCHITECTURE	16 units from class F to class C	Reduction of CO2 emissions	Tons of CO2 avoided	131.7 (tCO2)	Social cost per ton of CO2	167	62,966.53
SUSTAINABLE ARCHITECTURE	9 units from class G to class B	Reduction of CO2 emissions	Tons of CO2 avoided	117.19 (tCO2)	Social cost per ton of CO2	167	56,029.22
SUSTAINABLE ARCHITECTURE	15 kWp plant with EPC	Improvement of energy efficiency for families and businesses	Tons of CO2 avoided	8 (tCO2)	Social cost per ton of CO2	167	3,710.10
SUSTAINABLE ARCHITECTURE	10 kWp plant with EPC	Improvement of energy efficiency for families and businesses	Tons of CO2 avoided	5 (tCO2)	Social cost per ton of CO2	167	2,390.53
ENERGY EFFICIENCY	1MW plant registered in FER	Improvement of energy efficiency for families and businesses	Tons of CO2 avoided	484 (tCO2)	Social cost per ton of CO2	167	224,461.10
ENERGY EFFICIENCY	897 kW plant with EPC	Improvement of energy efficiency for families and businesses	Tons of CO2 avoided	447 (tCO2)	Social cost per ton of CO2	167	207,301.88
NETWORKING	Partnership	Increase in partnerships related to the solution	Number of partnerships signed	1 (N.)	Value of the partnership	50	95,596.89
EDUCATION	Training	Increase in awareness	Number of students involved in training	500 (N.)	Cost on sustainability topics	120	106,585.86
SUSTAINABILITY	Misurho	Increase in transparency level related to sustainability	Number of certifications issued	10 (N.)	Economic value of certification	400	284,368.68
EMPLOYMENT AND ECONOMIC GROWTH	Jobs	Increase in direct employment	Number of jobs created	10 (N.)	Average gross annual salary (RAL)	56,5	2,119,928.99

Source: author's own elaboration based on Methodological Note of Startup B SROI, 2023, Company 2

Through this Impact Chain, the sum of all NPVs of each Outcome was determined, i.e. the total monetised impact generated by Startup B.

Net Present Value Of Outcomes (NPV) = € 3.343.585,66

Calculation of SROI Ratio

The SROI is calculated using the same formula as Startup A and the results indicate:

NET PRESENT VALUE OF OUTCOMES (NPV) = € 3.343.585,66

NET PRESENT VALUE OF INVESTMENTS = € 686.153

FINAL SROI RATIO = 4,87

This means that for every €1 invested, the community receives a return of €4.87 in social, environmental, and economic benefits.

7. Discussion

The results from the case studies of Startup A and Startup B, combined with the insights from the interviews with experts, revealed several point of reflection that in this chapter will be analyzed and compared with the elements that emerged from the analysis of theoretical and literature review.

The case study evidence from Startup A and Startup B, supported by expert interviews, confirms the increasing relevance of SROI as a metric for social and environmental value for sustainable startups, also discloses principal challenges and limitations in its implementation, especially in early-stage firms with resource-scarce settings and fast-changing business conditions. This discussion considers these findings in relation to the broader literature on

impact measurement and sustainable entrepreneurship. In the following sections, the main areas of interest will be analyzed to derive results relevant to the research objectives of this thesis work, and in Figure 5. the main insights will be summarized.

Challenges in Applying SROI in Startups

The case studies reveal significant challenges in applying SROI within the startup ecosystem. Indeed, both Startup A and Startup B faced complex challenges in volatile and fleeting environments. The two startups said they experienced problems with data availability, resource constraints, and methodological complexities, all obstacles well documented in the impact measurement literature (Nicholls et al., 2015; Fichter et al., 2023: Hoogendoorn et al., 2017).

One of the most pressing issues was data scarcity, making impact forecasting and measurement difficult (Fichter et al., 2023). Startup A highlighted the challenge of tracking historical data, stating, "*A major challenge was the availability of data for impact calculation, given the volatile nature of startups. It was easier to forecast data related to resource consumption and product sales than to track historical data."* (Interviewee 1, Startup A). This resonates with a broader criticism of SROI application, where startups, as opposed to larger companies, will not necessarily have set up sustainability reporting systems, and so must instead rely on assumptions and projections rather than auditable long-term information (Maier et al., 2015).

Startup B also had difficulty in bounding its impact measurement, particularly in attributing value to new solutions for which there are no baselines. As its co-founder noted, *"It was difficult for us to quantify the boundaries of action to best define what kind of data to include within the basket. For example, it was difficult to quantify the value generated by our product innovation (Misurho technology), (..). No real value was quantified in this respect as companies in this sector did not have any reference tools on which to benchmark."* (Interviewee 2, Startup B).

This concurs with literature criticism of SROI subjectivity, especially for emerging business models that do not conform to conventional financial proxy frameworks (Gibbon & Dey, 2011; Cooney, 2017). The lack of commonly agreed-upon financial proxies for social impact, i.e., carbon footprint awareness programs, also precludes SROI calculations, resonating with the call for sector-specific impact valuation frameworks (Corvo et al., 2022).

On the other hand, the resource intensiveness of SROI was also a significant challenge. Direct stakeholder involvement was very limited for both the startups, contradicting the theoretical premise that SROI is centered around participatory evaluation (Freudenreich et al., 2020). Company 2, which managed the assessments, acknowledged this trade-off, stating, *"The evaluations made on start-ups were suited to the context of data scarcity and dynamic environment in which they operate. Start-ups in general do not very often have time and resources to devote to this type of evaluation as they are busy developing their technology or improving their business strategy. For this reason, we tried to simplify the evaluation process, for instance by limiting the stakeholder engagement phase."* (Interviewee 3, Company 2). This echoes earlier findings that emphasize startups focus on product development and fundraising rather than extensive sustainability reporting, and therefore rigorous SROI methods cannot be applied without the support of external actors (Trautwein, 2021).

Long-term SROI credibility was also an issue, especially in the estimation of impact duration and attribution (Maier et al., 2015). Startup B's carbon footprint from reduction relied on decades-long energy savings estimates, which were subject to uncertainties about regulation changes and changing market conditions. Company 2 emphasized that SROI calculations for startups should be considered provisional, stating, *"The framework that came out is a provisional one precisely because we do not know whether the start-ups will have the way and desire to scale and optimize it."* (Interviewee 3, Company 2). This reinforces the need for

periodic reassessment of SROI ratios, ensuring that the calculated social value remains relevant over time (Corvo et al., 2022).

Finally, the overemphasis on quantification and lack of standardization of SROI approaches were problematic. Startups used SROI primarily to demonstrate impact to investors, rather than as a strategic management tool. This aligns with the criticisms that, in practice, SROI is driven by external fundraising pressures and not internal sustainability planning (Nicholls et al., 2012). The lack of uniform financial proxies across sectors complicates firm comparisons. (Gibbon & Dey, 2011). Company 2 noted efforts at establishing subcategories of financial metrics for startups in particular, while also noting that the lack of universal benchmarks remains a limitation.

Advantages in Applying SROI in Startups

Despite its challenges, the case studies demonstrate that SROI offers significant advantages for sustainable startups, particularly in impact validation and investor engagement. As an evaluative and forecasting tool, SROI enables startups to both prove their impact retrospectively and project future social value, making it a versatile framework for evidence-based decision-making (Corvo et al., 2022; Mook et al., 2015). This dual function was evident in Startup B's case (ex-ante assessement) and in in Startup A's case (ex-post assessement).

One of the most immediate and tangible outcomes of SROI implementation was improved investor relations. Both case studies demonstrated that SROI was crucial in attracting and engaging impact-focused investors by giving quantitative evidence of sustainability contributions. As Startup A confirmed, *"First and foremost, the SROI enabled us to improve our communication with investors. Every impact fund we worked with required a thorough impact evaluation, and the SROI was essential in this sense."* (Interviewee 1, Startup A).

Similarly, Startup B used SROI as an investor engagement tool, explaining, *"We agreed with Company 1 and Company 2 to use the SROI to collect objective statistics on the social and environmental benefits we provide, particularly for potential investors. It also helped us become more transparent about our influence on the community."* (Interviewee 2, Startup B). This aligns with existing literature emphasizing SROI's role in enhancing financial credibility, particularly for startups seeking mission-aligned investors (Nicholls et al., 2009; Corvo et al., 2022).

Beyond investment attraction, SROI promotes corporate transparency and accountability. Startups can increase stakeholder trust and line with market expectations for sustainability by providing an organized and quantitative method to impact measurement. This was especially important for Startup A, where the SROI calculation highlighted environmental benefits like resource efficiency and waste reduction, allowing for the quantification of usually intangible sustainability efforts. Similarly, Startup B used SROI to monetize the environmental and economic worth of its decarbonization services, which increased its reputation among sustainability-conscious stakeholders. Company 2 emphasized this broader value, stating, *"SROI could aid companies by simplifying investor dialogue, boosting transparency with stakeholders, and, for more mature startups with abundant resources, optimizing and growing their business strategies."* (Interviewee 3, Company 2). These insights confirm that beyond a numerical ratio, SROI serves as a strategic tool for refining impact-driven business models and enhancing long-term growth potential (Emerson, 2003).

However, while SROI has been recognized in the literature (Nicholls et al., 2012) as a tool for strategic management and scaling impact, the case studies reveal that neither Startup A nor Startup B fully leveraged SROI for long-term strategic planning. This was primarily due to time constraints, limited resources, and a lack of internal expertise in impact measurement. Startup B underlined this aspect: "*However, because the data is based on 2023 values, we have*

been unable to track or scale it over time. Due to a lack of relevant experience and resources, we are uncertain how to proceed with this technology" (Interviewee 2, Startup B). This is consistent with earlier research, which indicates that although SROI can enhance business strategy, its complete advantages are not materialized in early-stage companies because of operational limitations (Trautwein, 2021; Fichter et al., 2023). In contrast to this, larger or older organizations with firmly established sustainability reporting systems are well positioned to incorporate SROI into their long-term impact management strategy (Nicholls et al., 2012).

In the case studies, direct stakeholder engagement was circumscribed by time and resource constraints; however, SROI was shown to be a valuable instrument for enhancing corporate transparency. The blockchain-enabled traceability offered by Startup A was a perfect complement to the SROI framework, illustrating how startups can integrate quantitative impact metrics with innovative transparency solutions. Moreover, Startup B's adherence to sustainability regulations and investor expectations illustrates SROI's potential to connect policy and business objectives, especially in sectors confronting mounting pressures for ESG compliance (The SROI Guide, 2012).

Lastly, the adaptability of SROI across various sectors positions SROI as a scalable impact measurement tool, easily applicable across various startup models (Farr & Cressey, 2019; Maier et al., 2015). The case studies show that, although SROI was initially developed for social enterprises, its malleability means that it can be successfully applied in startups working in the circular economy, sustainable materials, and carbon management sectors. Startup B's integration of LCA with SROI and Startup A's sectoral considerations of impact would mean that hybrid models using sectoral methodologies combined with SROI can enhance its effectiveness.

SROI Process Application

The case studies of Startup A and Startup B offer a clear example of SROI application in practice, ranging from data collection to impact calculation and validation of outcomes. While the process follows a structured approach, aligning with the theoretical framework (Nicholls et al., 2012; Corvo et al., 2022), the outcomes demonstrate practical adaptations to the startup context, especially in data collection, stakeholder engagement, and proxy selection.

The initial phase in SROI approach was to define the scope and map the value chain of impact, to align the startups' sustainability goals and measurable impacts. Startup A emphasized circular economy benefits, for example, reduced waste and supply chain transparency, whereas Startup B concentrated on decarbonization and energy efficiency. Both firms conducted preliminary consultation with Company 2 to identify pertinent impact matters and achieve consistency of data throughout business activities. Stakeholder engagement was limited at this stage, which goes against the literatures reinforcing participatory impact assessment (Freudenreich et al., 2020). As confirmed by Startup B: "*There was no direct dialogue with stakeholders. The data we provided is historical data that it was possible for us to collect, as it is an integral part of our business processes*" (Interviewee 2, Startup B). This reinforces critiques in the literature that SROI applications often struggle to fully integrate stakeholder perspectives due to time and resource constraints, particularly in startup environments (Maier et al., 2015; Fichter et al., 2023).

The second step involved quantification and monetization of impacts, a crucial yet challenging process in SROI application. The calculation was conducted entirely by Company 2, who used an in-house benchmark database to pick financial proxies for social and environmental results. As noted by Startup A, *"The entire process, from data analysis to the selection of indicators and financial proxies, was handled by Company 2. We were not involved in the technical*

calculation process but approved the selection of indicators at the end" (Interviewee 1, Startup A). This reflects how startups are not always engaged in the modeling and proxy selection process in an active way, mostly because of limited resources and lack of technical know-how in impact valuation (Corvo et al., 2022). This validates criticism in the literature about the subjectivity of financial proxies in SROI, where different organizations can utilize different benchmarks, and hence comparability becomes challenging (Gibbon & Dey, 2011; Cooney, 2017).

Moreover, the application of the Theory of Change (ToC) played a central role in structuring the impact assessment framework. Company 2 noted that while ToC is generally used to define causal links between inputs, outputs, and outcomes, it was already intrinsic to the startups' business models: "*In such a volatile context, applying predetermined parameters can be counterproductive. The ToC itself in startups like Startup A or Startup B is intrinsic to their business model, given the outcomes and benefits they deliberately want to generate*" (Interviewee 3, Company 2). This is in line with current research, which has demonstrated that for impact-driven business models in startups, ToC can be integrated into their business strategy and external legitimacy is no longer as important (Fichter et al., 2023; Schaltegger et al., 2016).

The last step involved the application of mitigation factors—deadweight, attribution, and displacement—to make sure that the SROI ratio actually accounted for the startup's contribution to impact. The results underlined the necessity for contextual considerations since each startup was working within a fast-developing sector in which externalities affected impact results. Startup B's SROI calculation needed to factor in regulation-driven emissions savings, while Startup A's environmental gains were partly driven by general trends within sustainable fashion. Additionally, the challenge of quantifying social impact was evident, as Company 2 attested*: "The most easily quantifiable outcomes have certainly been environmental ones as*

opposed to social ones, because they are more objectively certifiable and predictable" (Interviewee 3, Company 2). This reflects wider academic concerns regarding the monetization of social impact, where qualitative outcomes, such as behavioral change or community benefits, are often underestimated in SROI calculations (Maier et al., 2015; Corvo et al., 2022).

Future Developments of SROI in Startup Context

While the SROI assessment has produced useful insights, startups continue to have challenges in integrating it into long-term company strategy due to resource constraints, a lack of knowledge, and the absence of established sector-specific standards. The case studies emphasize that, while SROI has potential as an effect measuring tool, its future deployment in startups requires modification, continuous updates, and a more strategic approach.

Currently, neither Startup A and Startup B have fully leveraged the results of their SROI analysis, primarily using them for transparency and investor communication rather than as an internal strategic tool. As Startup A acknowledged, *"So far, we have not completely exploited the results of our SROI analysis, but we intend to include them into our communication plan to increase transparency. SROI has enormous potential, and before moving further with other approaches, we want to thoroughly understand how to optimize its benefits."* (Interviewee 1, Startup A). Similarly, Startup B noted that while SROI has helped improve transparency, its data is based on 2023 values and has not been tracked or scaled over time, making it difficult to assess ongoing impact. *"Due to a lack of relevant experience and resources, we are uncertain how to proceed with this technology. An important future goal is to reintegrate and strategically implement the SROI technique. In the meantime, we are establishing our own indicators based on the insights gained from the SROI research, allowing us to track our impact independently."* (Interviewee 2, Startup B). These findings indicate a larger issue in the

startup ecosystem: the potential of impact measuring techniques such as SROI is frequently underutilized due to operational constraints (Fichter et al., 2023; Trautwein, 2021). To integrate SROI into company strategy, startups must invest in continual impact monitoring, yet many lack the requisite infrastructure or experience. This is consistent with research indicating that, while SROI provides a useful framework, its long-term viability is dependent on regular updates and integration with other sustainability indicators (Nicholls et al., 2012; Corvo et al., 2022).

As impact measurement frameworks continue to evolve, the case studies suggest that SROI must adapt to the specific needs of startups. One of the primary concerns raised was comparability across different industries and sectors. Startup B highlighted that while SROI is useful for external validation, its cross-company comparison can be misleading, stating: *"The index generated should be accompanied by other indicators—territorial indicators in disadvantaged contexts should carry greater weight, or vertical indicators based on different sectors. In our case, an objective metric on CO_2 emissions saved, integrated with LCA or S-LCA, would better capture the environmental and social impact."* (Interviewee 2, Startup B). This supports calls in the literature for hybrid approaches, where SROI is complemented by sector-specific sustainability reporting frameworks (Farr & Cressey, 2019; Maier et al., 2015).

Another challenge is the static nature of SROI assessments, which can quickly become obsolete if not updated periodically. Company 2 emphasized that the SROI ratios calculated for Startup A and Startup B are based on 2023 data and are no longer relevant today, explaining: *"The value of SROI, unlike certifications or other indices, becomes obsolete if it is not continuously monitored and updated. The 2023 data has not been updated due to a lack of funding and limited resources within the startups. Additionally, the value of proxies evolves over time"* (Interviewee 3, Company 2). This reflects broader concerns in impact measurement literature, where a single SROI ratio may not fully capture long-term business performance and

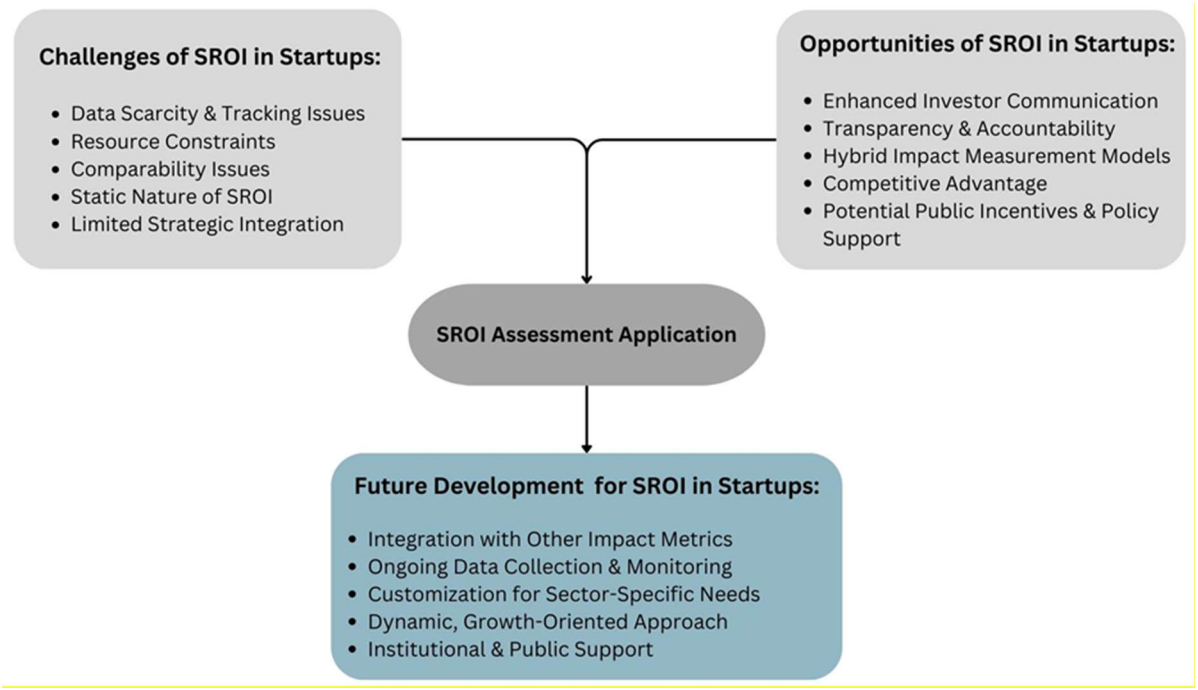
sustainability contributions (Nicholls et al., 2012). Rather than using SROI only for investor communication, startups should view it as an evolving instrument that supports long-term impact optimization. Company 2 emphasized this point, stating: *"For startups considering SROI as a measurement tool, my advice would be to view it not as a mere compliance requirement but as a dynamic instrument that evolves alongside the company. It should serve not only to certify impact but also to update and enhance it over time."* (Interviewee 3, Company 2).

As the field of impact measurement expands, startups may benefit from experimenting with multiple frameworks rather than committing to a single methodology. Company 2 suggested that the startup phase should be seen as an opportunity to test and refine different impact measurement tools, stating: *"At this stage, which I would define as a 'creative' phase, I believe that standardized reporting for startups is not yet necessary. Instead, this phase should be about experimenting with and testing various frameworks to ultimately determine what is most applicable to the sector."* (Interviewee 3, Company 2). This aligns with research advocating for adaptive impact measurement models, where startups gradually refine their sustainability assessment tools as they scale (Trautwein, 2021). Rather than using SROI solely for investor communication, startups should view it as an evolving instrument that supports long-term impact optimization. Company 2 emphasized this point, stating: *"For startups considering SROI as a measurement tool, my advice would be to view it not as a mere compliance requirement but as a dynamic instrument that evolves alongside the company. It should serve not only to certify impact but also to update and enhance it over time."* (Interviewee 3, Company 2).

Ultimately, Startup B suggested that greater institutional support for startups engaging in impact measurement could drive broader adoption, stating: *"It would be interesting to see if there are public calls for startups or SMEs that use these indicators, calls that promote this*

European journal of volunteering and community-based projects Vol.1, No 2; 2025
ISSN: 2724-0592 E-ISSN: 2724-1947
Published by Odv Casa Arcobaleno
type of measurement." (Interviewee 2, Startup B). Future policies could push startups to integrate SROI and related methodologies into their business operations through grants, subsidies, or regulatory advantages. At the end of this discussion, Figure 5. was produced, which dynamically summarizes the evolution of SROI in the context of startups.

Figure 5. Evolution of SROI in the context of Startup



Source: author's own elaboration

8. Conclusions

The case studies of Startup A and Startup B, complemented by expert interviews, underscore the transformative importance of SROI as a crucial model for evaluating, measuring, and communicating social and environmental impact in sustainable enterprises. This analysis warrants the assertion in the early chapters of this thesis that startups play a crucial role in creating social value and fostering sustainable development. They innovate and offer solutions

to imminent environmental and social issues. Their adaptability, entrepreneurial ability, and ability for speedy response make them deliver substantial solutions that align with international sustainability objectives, especially under the resource limitations of new ventures.

The aim of this study was to answer previously established research questions:

- *Research Question 1*: What are the specific advantages and limitations of applying the SROI method in the context of startups?

- *Research Question 2*: To what extent do sustainable startups integrate impact measurement, such as SROI, into their strategic management processes?

The analysis of *Research Question 1* highlights that implementing SROI offers several benefits for sustainable startups, including improved investor communication, greater transparency, and a structured way to evaluate economic, social, and environmental impacts. These strengths support accountability and access to mission-aligned funding. However, startups face significant limitations in applying SROI effectively, such as limited data availability, methodological complexity, subjective financial proxies, and the model's static nature, which struggles to keep pace with rapidly evolving business environments. Moreover, its potential as a strategic management tool remains largely untapped due to startups' resource constraints and short-term growth focus.

In response to *Research Question 2*, findings reveal that while SROI provides a robust framework for impact measurement, its use by startups like Startup A and Startup B has been primarily external—focused on investor reporting—rather than integrated into ongoing internal decision-making or strategic planning. This limited integration stems from a lack of expertise, time, and resources. Nonetheless, SROI remains a valuable instrument in the impact economy, and its full potential can be unlocked if applied more dynamically and flexibly. The case studies suggest that startups should embed SROI into strategic processes, focus on high-impact areas,

complement it with qualitative data, and ensure regular updates to stay relevant. By adapting SROI to specific industry needs and using it as a dynamic management tool, sustainable startups can enhance both their operational effectiveness and their contribution to sustainable development.

This study presents several limitations that affect the generalizability of its findings. The analysis is based on only two case studies, both from Italy, which narrows its applicability to broader contexts or diverse geographic and legal environments. The use of self-reported interviews also introduces potential bias, with no external stakeholder perspectives included. Moreover, the study provides a snapshot based on 2023 data, potentially overlooking the evolving nature of startups and impact practices. Lastly, the exclusive focus on SROI, without comparing it to other frameworks, limits the ability to evaluate its relative effectiveness in varying scenarios.

Future studies should address these limitations by expanding the sample size across different industries and regions to better reflect diverse contexts. Longitudinal research would allow exploration of how SROI evolves over time and becomes integrated into startup strategies. Including external stakeholder perspectives—such as investors and community members—could enrich understanding of SROI's perceived value and credibility. Comparative analyses between SROI and other frameworks (e.g., ESG, B Corp, IMP) would also identify strengths, weaknesses, and best practices. Additionally, exploring hybrid models that combine qualitative and quantitative measures could enhance the flexibility and relevance of impact evaluations in dynamic startup environments.

This research contributes to the literature on sustainable entrepreneurship, impact measurement, and SROI by offering empirical insights into how early-stage companies apply SROI within real operational constraints. It extends the understanding of SROI's utility beyond traditional social enterprises, showing its relevance for startups like Startup A and Startup B. The study highlights both the benefits—such as improved transparency and investor communication—and the challenges startups face in embedding SROI into strategic decision-making due to limited resources and expertise. It stresses the need for adaptive, sector-specific applications and suggests integrating SROI with other tools like Social Life Cycle Assessment (S-LCA) to capture broader sustainability impacts. The work also draws attention to how practical limitations—time, funding, and skills—shape impact measurement in entrepreneurial contexts, contributing to the growing recognition of startups as agents of social value aligned with the Sustainable Development Goals (SDGs).

The findings offer valuable guidance for startup managers, impact professionals, and stakeholders on using SROI not only as a reporting tool but as a strategic asset for decision-making and long-term impact planning. While Startup A and Fourgreen mainly used SROI for investor relations, the study shows its potential for internal alignment and operational efficiency. It advocates embedding impact measurement into daily operations and developing in-house capabilities through dedicated teams and tools. Given the complexity of SROI, collaborations with external experts—such as Company 2—are often necessary, though startups should work toward internalizing this expertise. Investors and policymakers can support this shift by incentivizing impact measurement through funding and regulation. Sector-specific adaptations and financial proxies would also enhance SROI's relevance across industries. Ultimately, for SROI to be truly impactful in the startup ecosystem, it must evolve into a dynamic, ongoing process that supports both accountability and strategic development.

References

Acemoglu, D., Akcigit, U., Alp, H., Bloom, N., & Kerr, W. (2018). Innovation, reallocation, and growth. *American Economic Review*, 108(11), 3450-3491.

Agnieszka, S. (2019). Digital startups in transition economies: challenges for management, entrepreneurship and education. palgrave macmillan.

Alijani, S., & Karyotis, C. (2019). Coping with impact investing antagonistic objectives: A multistakeholder approach. *Research in International Business and Finance*, 47, 10-17.

Alomoto, W., Niñerola, A., & Pié, L. (2022). Social impact assessment: a systematic review of literature. *Social Indicators Research*, 161(1), 225-250.

Alsayegh, M. F., Abdul Rahman, R., & Homayoun, S. (2020). Corporate economic, environmental, and social sustainability performance transformation through ESG disclosure. Sustainability, 12(9), 3910. doi:10.3390/su12093910.

Amelio, S., Gazzola, P., Biancone, P., & Brescia, V. (2025). Sustainability and performance evaluation in third sector partnerships: the case of turin fast track city. Financial Accountability & Management, 41(2), 381-397.

Amran, A., Periasamy, V., & Zulkafli, A. H. (2014). Determinants of climate change disclosure by developed and emerging countries in Asia Pacific. Sustainable Development, 22(3), 188–204. doi:10.1002/sd.539.

Arvidson, M., Lyon, F. and McKay, S. (2010), The Ambitions and Challenges of SROI, TSRC, Birmingham.

Arvidson, M., & Lyon, F. (2014). Social impact measurement and non-profit organisations: Compliance, resistance, and promotion. VOLUNTAS: *International Journal of Voluntary and Nonprofit Organizations*, 25, 869-886.

Arena, M., Azzone, G., & Bengo, I. (2015). Performance measurement for social enterprises. VOLUNTAS: *International Journal of Voluntary and Nonprofit Organizations*, 26, 649-672.

Atkinson, A., Waterhouse, J., & Wells, R. 1997. A Stakeholder Approach to Strategic Performance Measurement. *MIT Sloan Management Review*, 38(3).

Austin, J., Stevenson, H., & Wei-Skillern, J. (2006). Social and commercial entrepreneurship: Same, different, or both? Entrepreneurship Theory and Practice, 30(1), 1–22. doi:10.1111/j.1540-6520.2006.00107.x.

Bakar, A.A., Osman, M.M., Bachok, S. and Zen, I. (2015). Social impact assessment: How do the public help and why do they matter?. *ProcediaSoc. Behav. Sci*. 170, 70-77.

Bansal, P., & DesJardine, M. R. (2014). Business sustainability: It is about time. Strategic Organization, 12(1), 70–78. doi:10.1177/1476127013520265.

Battilana, J., & Lee, M. (2014). Advancing research on hybrid organizing–Insights from the study of social enterprises. *Academy of Management Annals*, 8(1), 397-441.

Bell, S., & Morse, S. (2008). Sustainability Indicators: Measuring the Immeasurable? (2nd ed.). Routledge.

Belz, F. M., & Binder, J. K. (2017). Sustainable entrepreneurship: A convergent process model. Business Strategy and the Environment, 26(1), 1–17. doi:10.1002/bse.1887.

Bengo, I., Arena, M., Azzone, G., & Calderini, M. (2015). Indicators and metrics for social business: A review of current approaches. *Sustainability*, 7(7), 6663–6681. doi:10.3390/su7076663.

Bennett, S. J. (1991). Ecopreneuring: The complete guide to small business opportunities from the environmental revolution. Wiley.

Bidmon, C. M., & Knab, S. F. (2018). The three roles of business models in societal transitions: New linkages between business model and transition research. *Journal of Cleaner Production*, 178, 903–916. doi:10.1016/j.jclepro.2017.12.198.

Bond, A. J., Morrison-Saunders, A., & Pope, J. (2012). Sustainability assessment: The state of the art. Impact Assessment and Project Appraisal, 30(1), 53–62. doi:10.1080/14615517.2012.661974.

Borderstep Institute. (2021). IMPACT Guide: Moving from evaluation to impact management of start-up support programmes. Berlin: Borderstep Institute

Brest, P., & Born, K. (2013). When can impact investing create real impact. *Stanford Social Innovation Review,* 11(4), 22-31.

Brickson, S. L. (2007). Organizational identity orientation: The genesis of the role of the firm and distinct forms of social value. *Academy of management review*, 32(3), 864-888.

Brundtland Commission. (1987:16). Our Common Future: Report of the World Commission on Environment and Development. United Nations.

Calabrese, A., Costa, R., Levialdi, N., Menichini, T., 2016. A fuzzy analytic hierarchy process method to support materiality assessment in sustainability reporting. *J. Clean. Prod*. 121, 248e264

Calderini M., (2022) Sustainability and impact management and measurement, *Politecnico di Milano*

Carle, A., & Rayna, T. (2023). Where to start? Exploring how sustainable startups integrate sustainability impact assessment within their entrepreneurial process. *Journal of Management & Organization, 30*(148–164). doi:10.1017/jmo.2023.46

Carlile, P. R. (2004). Transferring, translating, and transforming: An integrative framework for managing knowledge across boundaries. Organization Science, 15(5), 555–568. doi:10.1287/orsc.1040.0094.

Chiappini, H. (2017). Social impact funds: Definition, assessment and performance. Springer.

Chichilnisky, G. (1991). Development and global finance: The case for an international bank for environmental settlements. United Nations University World Institute for Development Economics Research (WIDER) Working Papers. doi:10.1111/j.1467-7660.1991.tb00725.x.

Clark, C., & Brennan, L. 2016. Social Entrepreneurship: A Global Model for Evaluating LongTerm Impact. *International Journal of Entrepreneurship*, 20(1): 1–15.

Clark, C., Emerson, J., & Thornley, B. (2015). Impact investing 2.0: The way forward. *Innovations*, 8(3–4), 135–149.

Clark, C., & Rosenzweig, W. (2004). Double bottom line project report. University of California, Berkeley.

Clarke-Sather, A., Qu, J., Wang, Q., Zeng, J., & Li, Y. (2011). Carbon inequality at the sub-national scale: A case study of provincial-level inequality in CO2 emissions in China 1997–2007. *Energy Policy*, 39(9), 5420-5428.

Clifford, J. 2014. Proposed approaches to social impact measurement in European Commission legislation and in practice relating to EuSEFs and the EaSI: GECES subgroup on impact measurement 2014. *Luxembourg: Publications Office*.

Cohen, B., & Winn, M. I. (2007). Market imperfections, opportunity and sustainable entrepreneurship. Journal of Business Venturing, 22(1), 29–49. doi:10.1016/j.jbusvent.2004.12.001.

Cooney, K. (2017), "Legitimation dynamics: how SROI could mobilize resources for new constituencies", *Evaluation and Program Planning*, Vol. 64, pp. 110-115.

Corporate Sustainability Reporting Directive (CSRD). (2021). Directive (EU) 2021/2101 of the European Parliament and of the Council of 10 November 2021 amending Directive 2013/34/EU as regards corporate sustainability reporting.

Corvo, L., Pastore, L., Mastrodascio, M., & Cepiku, D. (2022). The social return on investment model: A systematic literature review. *Meditari Accountancy Research, 30*(7), 49-86. doi:10.1108/MEDAR-05-2021-1307

Costanza, R., de Groot, R., Braat, L., Kubiszewski, I., Fioramonti, L., Sutton, P., ... & Grasso, M. (2016). Twenty years of ecosystem services: How far have we come and how far do we still need to go? Ecosystem Services, 18, 1–16. doi:10.1016/j.ecoser.2016.10.006.

Da Silva, F. T. (2023). Market and sales obstacles for sustainable entrepreneurship: Emerging insights and implications. *Journal of Cleaner Production*, 400, 136867.

Dean, T. J., & McMullen, J. S. (2007). Toward a theory of sustainable entrepreneurship: Reducing environmental degradation through entrepreneurial action. *Journal of business venturing*, 22(1), 50-76.

Dees, J. G. (1998). The meaning of "social entrepreneurship." *Kauffman Foundation and Stanford University Working Paper*.

Dembek, K., Lüdeke-Freund, F., Rosati, F., Froese, T., 2022. Untangling business model outcomes, impacts and value. *Bus. Strat. Environ.*

Dichter, S., Adams, T., & Ebrahim, A. 2016. The Power of Lean Data. *Stanford Social Innovation Review,* 14(1), 36–41.

Dijkstra-Silva, S., Schaltegger, S., & Beske-Janssen, P. (2022). Understanding positive contributions to sustainability. A systematic review. *Journal of Environmental Management*, 320, 115802.

Di Vaio, A., Hassan, R., Chhabra, M., Arrigo, E., & Palladino, R. (2022). Sustainable entrepreneurship impact and entrepreneurial venture life cycle: A systematic literature review. *Journal of Cleaner Production, 378*, 134469. doi:10.1016/j.jclepro.2022.134469

Dyllick, T., & Muff, K. (2016). Clarifying the meaning of sustainable business: Introducing a typology from business-as-usual to true business sustainability. *Organization & Environment*, 29(2), 156–174. doi:10.1177/1086026615575176.

Ebrahim, A. S., & Rangan, V. K. (2010). The limits of nonprofit impact: A contingency framework for measuring social performance. *Harvard Business School General Management Unit Working Paper*, (10-099), 10-099.

Ebrahim, A. (2013). Let's be realistic about measuring impact. Harvard Business Review, 29.

Ebrahim, A., & Rangan, V. K. (2014). What Impact? A Framework for Measuring the Scale and Scope of Social Performance. *California Management Review*, 56(3), 118-141. https://doi.org/10.1525/cmr.2014.56.3.118

Elford, A. C., & Daub, C. H. (2019). Solutions for SMEs challenged by CSR: A multiple cases approach in the food industry within the DACH-region. *Sustainability*, 11(17), 4758.

Elkington, J. (1997). Cannibals with forks: The triple bottom line of 21st century business. Capstone Publishing.

Elkington, J. (1997). The triple bottom line. Environmental management: Readings and cases, 2, 49-66.

Emerson, J. (2003), "The blended value proposition: integrating social and financial returns", *California Management Review*, Vol. 45 No. 4, pp. 35-51, doi: 10.2307/41166187.

Esteves, A.M., Franks, D.M., and Vanclay, F. (2012). Social impact assessment: The state of the art. *Impact Assess. Proj. Apprais*. 30, 34-42

European Commission. (2008). "Think Small First": A Small Business Act for Europe [COM(2008) 394 final]. *European Commission.* https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52008DC0394

European Commission. (2018)**.** *Startup Europe Initiative.* Official initiative to strengthen the business environment for startups in Europe.

European Commission. (2021). *Horizon Europe – The Framework Programme for Research and Innovation (2021–2027).* Regulation (EU) 2021/695 of the European Parliament and of the Council of 28 April 2021 establishing Horizon Europe. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021R0695

EU Taxonomy Regulation. (2020). Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088.

Faivel, S. Ghosh, S. Hilton, O. James, D. and Peppercorn, D. (2012),"Social return on investment: lessons learned in Australia".

Farr, M. and Cressey, P. (2019), "The social impact of advice during disability welfare reform: from social return on investment to evidencing public value through realism and complexity", *Public Management Review*, Vol. 21 No. 2, pp. 238-263.

Fichter, K., Lüdeke-Freund, F., Schaltegger, S., & Schillebeeckx, S. J. D. (2023). Sustainability impact assessment of new ventures: An emerging field of research. *Journal of Cleaner Production, 384*, 135452. doi:10.1016/j.jclepro.2022.135452

Fichter, K., Widrat, A., & Olteanu, Y. (2021). Borderstep Impact Guide: Moving from evaluation to impact management of start-up support programmes. *Borderstep Institute for Innovation and Sustainability*.

Freeman, R. E. (1984). Strategic management: A stakeholder approach. *Pitman.*

Freeman, R. E., Harrison, J. S., & Wicks, A. C. (2007). Managing for stakeholders: Survival, reputation, and success. Yale University Press.

Freudenreich, B., Lüdeke-Freund, F., & Schaltegger, S. (2020). A stakeholder theory perspective on business models: Value creation for sustainability. *Journal of Business Ethics, 166*(1), 3–18. doi:10.1007/s10551-019-04112-z.

Funnell, S. C., & Rogers, P. J. (2011). Purposeful program theory: Effective use of theories of change and logic models (Vol. 31). John Wiley & Sons.

Gair, C. (2002), "A report from the good ship SROI. The Roberts Foundation 2002".

GECES. (2014). Proposed approaches to social impact measurement in European Commission legislation and in practice relating to: EuSEFs and the EaSI. European Commission.

Geels, F. W. (2002). Technological transitions as evolutionary reconfiguration processes: A multi-level perspective and a case-study. Research Policy, 31(8–9), 1257–1274. doi:10.1016/S0048-7333(02)00062-8.

George, G., Parida, V., Lahti, T., & Wincent, J. (2016). A systematic literature review of entrepreneurial opportunity recognition: Insights on influencing factors and themes. *International Journal of Entrepreneurial Behavior & Research*, 22(3), 334–371. doi:10.1108/IJEBR-12-2015-0295.

Gertler, P. J., Martinez, S., Premand, P., Rawlings, L. B., & Vermeersch, C. M. (2016). Impact evaluation in practice. *World Bank Publications*.

Gibbon, J. and Dey, C. (2011), "Developments in social impact measurement in the third sector: scaling up or dumbing down?", *Social and Environmental Accountability Journal*, Vol. 31 No. 1, pp. 63-72

Godelnik, R. (2021). Rethinking corporate sustainability in the era of climate change: A strategic approach to resilience and value creation. Springer.

Global Reporting Initiative (GRI). (2016). Consolidated set of GRI sustainability reporting standards. GRI.

Grabenwarter, U., & Liechtenstein, H. 2011. In search of gamma: An unconventional perpsective on impact investing. Barcelona: *IESE Business School, University of Navarra*

Green, K.R. (2019), "Social return on investment: a women's cooperative critique", *Social Enterprise Journal*, Vol. 15 No. 3, pp. 320-338.

Gregori, P., Wdowiak, M. A., Schwarz, E. J., & Holzmann, P. (2019). Exploring value creation in sustainable entrepreneurship: Insights from sustainable innovators. *Sustainability, 11*(5), 1500. doi:10.3390/su11051500.

Grieco, C., Michelini, L., & Iasevoli, G. (2015). Measuring Value Creation in Social Enterprises. *Nonprofit and Voluntary Sector Quarterly*, 44, 1173 - 1193.

Hansen, E. G., & Schaltegger, S. (2016). The sustainability balanced scorecard: A systematic review of architectures. *Journal of Business Ethics*, 133, 193-221.

Harling, A. M., Hehenberger, L., & Scholten, P. (2015). A practical guide to measuring and managing impact.

Hebb, T. (2013). Impact investing and responsible investing: What does it mean?. *Journal of Sustainable Finance & Investment*, 3(2), 71-74.

Higham, A., Barlow, C., Bichard, E. and Richards, A. (2018), "Valuing sustainable change in the built environment: using SuROI to appraise built environment projects", *Journal of Facilities Management*, Vol. 16 No. 3, pp. 266-278.

Hockerts, K., & Wüstenhagen, R. (2010). Greening Goliaths versus emerging Davids: Theorizing about the role of incumbents and new entrants in sustainable entrepreneurship. *Journal of Business Venturing, 25*(5), 481–492. doi:10.1016/j.jbusvent.2009.07.005.

Hoffman, A. J. (2005)**.** Climate change strategy: The business logic behind voluntary greenhouse gas reductions. *California Management Review, 47*(3), 21–46. doi:10.2307/41166305.

Hoogendoorn, B., van der Zwan, P., & Thurik, R. (2017). Sustainable entrepreneurship: The role of perceived barriers and risk. *Journal of Business Ethics, 157*(1133–1154). doi:10.1007/s10551-017-3646-8

Hörisch, J., Freeman, R. E., & Schaltegger, S. (2014). Applying stakeholder theory in sustainability management: Links, similarities, dissimilarities, and a conceptual framework. Organization & environment, 27(4), 328-346.

Horne, J. (2019). The sustainability impact of new ventures: Measuring and managing entrepreneurial contributions to sustainable development. *Doctoral Dissertation, Technical University of Berlin*.

Hübel, B., Müller, A., & Radzevicius, L. (2022). Managing dynamic sustainability transitions in startups: Insights and strategies. *Sustainability*, 14(7), 3912.

Hummel, K., & Schlick, C. (2016). The relationship between sustainability performance and sustainability disclosure: Reconciling voluntary disclosure theory and legitimacy theory. *Journal of Accounting and Public Policy*, 35(5), 455–476. doi:10.1016/j.jaccpubpol.2016.06.001.

International Association of Impact Assessment (IAIA). (2009). What is impact assessment?

Jabareen, Y. (2008). A new conceptual framework for sustainable development. Environment, Development and Sustainability, 10(2), 179–192. doi:10.1007/s10668-006-9058-z.

Johnson, M. P., & Schaltegger, S. (2020). Entrepreneurship for sustainable development: A review and multilevel causal mechanism framework. *Entrepreneurship Theory and Practice*, 44(6), 1141-1173.

Kah, S., & Akenroye, T. (2020). Evaluation of social impact measurement tools and techniques: a systematic review of the literature. *Social Enterprise Journal*, 16(4), 381-402.

Klemelä, J. (2016), "Licence to operate: social return on investment as a multidimensional discursive means of legitimating organisational action", *Social Enterprise Journal*, Vol. 12 No. 3, pp. 387-408.

Karani, C., & Mshenga, P. (2021). Steering the sustainability of entrepreneurial start-ups. *Journal of Global Entrepreneurship Research*, 11(1), 223-239.

Knoppen, D., & Knight, L. (2022:1790). Pursuing sustainability advantage: The dynamic capabilities of born sustainable firms. *Business strategy and the environment*, 31(4), 1789-1813.

Kroeger, A., & Weber, C. (2014). Developing a conceptual framework for comparing social value creation. *Academy of management review*, 39(4), 513-540.

Kuckertz, A., & Wagner, M. (2010). The influence of sustainability orientation on entrepreneurial intentions: Investigating the role of business experience. *Journal of Business Venturing, 25*(5), 524–539. doi:10.1016/j.jbusvent.2009.09.001.

Kurz, R., & Kubek, D. (2016). Theory of Change frameworks: Adapting to evolving program environments. Program Evaluation and Performance Measurement Quarterly, 34(1), 12–21.

Lang, D. J., Wiek, A., Bergmann, M., Stauffacher, M., Martens, P., Moll, P., ... & Thomas, C. J. (2012). Transdisciplinary research in sustainability science: Practice, principles, and challenges. Sustainability Science, 7(Supplement 1), 25–43. doi:10.1007/s11625-011-0149-x.

Laedre, O., Haavaldsen, T., Bohne, R. A., Kallaos, J., & Lohne, J. (2015). Determining sustainability impact assessment indicators. *Impact Assessment and Project Appraisal*, 33(2), 98-107.

Lazzarini, S. G. (2020). The nature of the social firm: Alternative organizational forms for social value creation and appropriation. *Academy of Management Review*, 45(3), 620-645.

Lee, N. (2006). Bridging the gap between theory and practice in integrated assessment. *Environmental impact assessment review*, 26(1), 57-78.

Leeuw, F., & Vaessen, J. (2009). Impact evaluations and development: NONIE guidance on impact evaluation. Network of Networks on Impact Evaluation (NONIE). Washington, DC: The World Bank. ISBN 978-1-60244-120-0.

Lepoutre, J., & Heene, A. (2006). Investigating the impact of firm size on small business social responsibility: A critical review. *Journal of business ethics*, 67, 257-273.

Lingane, A. and Olsen, S. (2004), "Guidelines for social return on investment", *California Management Review*, Vol. 46 No. 3, pp. 116-135.

Loorbach, D., & Wijsman, K. (2013). Business transition management: Exploring a new role for business in sustainability transitions. *Journal of Cleaner Production*, 45, 20–28. doi:10.1016/j.jclepro.2012.11.002.

Lüdeke-Freund, F., & Dembek, K. 2017. Sustainable business model research and practice: Emerging field or passing fancy? *Journal of Cleaner Production*, 168: 1668–1678.

Laukkanen, M., Tura, N., 2022. Sustainable value propositions and customer perceived value: clothing library case. *J. Clean. Prod.*, 134321

Maier, F., Schober, C., Simsa, R. and Millner, R. (2015), "SROI as a method for evaluation research: understanding merits and limitations", VOLUNTAS: *International Journal of Voluntary and Nonprofit Organizations*, Vol. 26 No. 5, pp. 1805-1830.

Mair, J., & Martí, I. (2006). Social entrepreneurship research: A source of explanation, prediction, and delight. *Journal of World Business, 41*(1), 36–44. doi:10.1016/j.jwb.2005.09.002

Malesios, C., Skouloudis, A., Dey, P. K., Abdelaziz, F. B., Kantartzis, A., & Evangelinos, K. (2018). Impact of small-and medium-sized enterprises sustainability practices and performance on economic growth from a managerial perspective: Modeling considerations and empirical analysis results. *Business strategy and the environment*, 27(7), 960-972.

Maas, K., & Liket, K. (2011). Social impact measurement: Classification of methods. *Environmental management accounting and supply chain management*, 171-202.

McLaughlin, J. A., & Jordan, G. B. (1999). Logic models: a tool for telling your programs performance story. *Evaluation and program planning*, 22(1), 65-72.

McLoughlin, J., Kaminski, J., Sodagar, B., Khan, S., Harris, R., Arnaudo, G., & Mc Brearty, S. 2009. A strategic approach to social impact measurement of social enterprises. *In Social Enterprise Journal* 5 (2), pp. 154–178.

Matzembacher, D. E., Raudsaar, M., de Barcellos, M. D., & Mets, T. (2019). Sustainable entrepreneurial process: From idea generation to impact measurement. *Sustainability*, 11(21), 58–92

Miller, T. L., Grimes, M. G., McMullen, J. S., & Vogus, T. J. (2012). Venturing for others with heart and head: How compassion encourages social entrepreneurship. *Academy of Management Review, 37*(4), 616–640. doi:10.5465/amr.2010.0456

Miller, T. R., Wiek, A., Sarewitz, D., Robinson, J., Olsson, L., Kriebel, D., & Loorbach, D. (2014). The future of sustainability science: A solutions-oriented research agenda. Sustainability Science, 9(2), 239–246. doi:10.1007/s11625-013-0224-6.

Mook, L., Maiorano, J., Ryan, S., Armstrong, A. and Quarter, J. (2015), "Turning social return on investment on its head: the stakeholder impact statement", *Nonprofit Management and Leadership*, Vol. 26 No. 2, pp. 229-246.

Morioka, S. N., Bolis, I., Evans, S., & Carvalho, M. M. (2017). Transforming sustainability challenges into competitive advantage: Multiple case studies kaleidoscope converging into sustainable business models. *Journal of cleaner production*, 167, 723-738.

Nampoothiri, A., & Entrop, A. G. (2024). Implementation and impact of the European Sustainability Reporting Standards (ESRS). *Journal of Cleaner Production*. (In Press).

Nicholls, A. (2009). 'We do good things, don't we?':'Blended Value Accounting'in social entrepreneurship. *Accounting, organizations and society*, 34(6-7), 755-769.

Nicholls, J. (2017), "Social return on investment—development and convergence", *Evaluation and Program Planning*, Vol. 64, pp. 127-135.

Nicholls, J., & Emerson, J. (2015). Social Return on Investment: Measuring and managing social value. In T. Scholten (Ed.), *Social Finance* (pp. 21–33). Springer.

Organisation for Economic Co-operation and Development (OECD). (2010). *Guidance on Sustainability Impact Assessment: Integrating Sustainability into Policy-Making.*

Pacces, A. M. (2021). Will the EU Taxonomy Regulation Foster Sustainable Corporate Governance? Sustainability, 13(21), 12316. https://doi.org/10.3390/su132112316

Pacheco, D. F., Dean, T. J., & Payne, D. S. (2010). Escaping the green prison: Entrepreneurship and the creation of opportunities for sustainable development. *Journal of business venturing*, 25(5), 464-480.

Pastore, L., & Corvo, L. (2024). Measuring sustainability: Social and environmental impact assessment frameworks. Sustainability Assessment Journal.

Patzelt, H., & Shepherd, D. A. (2011). Recognizing opportunities for sustainable development. *Entrepreneurship theory and practice*, 35(4), 631-652.

Picken, J. C. (2017). From startup to scalable enterprise: Laying the foundation. Business Horizons, 60(5), 587-595.

Pitz, T. S. (2023). Investing in a greener tomorrow: The role of sustainability impact assessment of start-ups in venture capital investment processes. *Master's Thesis, KTH Royal Institute of Technology*.

Porter, M. E., & Kramer, M. R. (2011). Creating shared value: How to reinvent capitalism—and unleash a wave of innovation and growth. Harvard Business Review, 89(1–2), 62–77.

Priem, R. L. (2007). A consumer perspective on value creation. Academy of Management Review, 32(1), 219–235. doi:10.5465/amr.2007.23464055.

Purvis, B., Mao, Y., & Robinson, D. (2019). Three pillars of sustainability: In search of conceptual origins. Sustainability Science, 14(3), 681–695. doi:10.1007/s11625-018-0627-5.

Rawhouser, H., Cummings, M., & Newbert, S. L. (2019). Social impact measurement: Current approaches and future directions for social entrepreneurship research. *Entrepreneurship theory and practice*, 43(1), 82-115.

Richmond, B.J., Mook, L. and Jack, Q. (2003). Social accounting for nonprofits: Two models. *Nonprofit Manag. Leadersh*. 13, 308-324.

Ries, E. (2011). The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses. Crown Currency.

Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin III, F. S., Lambin, E., ... & Foley, J. A. (2009). Planetary boundaries: Exploring the safe operating space for humanity. Ecology and Society, 14(2), 32. doi:10.5751/ES-03180-140232.

Rosário, S., Dias, J. G., & Cruz, L. P. (2022). Sustainable entrepreneurship: Determinants and outcomes in the context of the SDGs. *Sustainability*, 14(3), 1228. doi:10.3390/su14031228.

Rossetti, F., Nepelski, D., & Cardona, M. (2018). The Startup Europe Ecosystem. Analysis of the Startup Europe projects and of their beneficiaries, *Joint Research Centre, JRC Science for Policy Report*, EUR, 29134.

Saebi, T., Foss, N. J., & Linder, S. (2019). Social entrepreneurship research: Past achievements and future promises. *Journal of Management*, 45(1), 70–95. doi:10.1177/0149206318793196.

Sala, S., Ciuffo, B., & Nijkamp, P. (2013). A systematic framework for sustainability assessment. *Ecological Economics*, 90, 108-119. doi:10.1016/j.ecolecon.2013.02.009.

Sala, S., Ciuffo, B., & Nijkamp, P. (2015). Theoretical advancements in sustainability science: A comprehensive review. Journal of Cleaner Production, 86, 1-20. doi:10.1016/j.jclepro.2014.08.054.

Saltuk, Y., Idrissi, A. E., Bouri, A., Mudaliar, A., & Schiff, H. (2014). Spotlight on the market: The impact investor survey. *Global Impact Investing Network & J.P. Morgan.*

Santos, F. M. (2012). A positive theory of social entrepreneurship. *Journal of business ethics*, 111(3), 335-351.

Schaltegger, S. (2002). A framework for ecopreneurship: Leading bioneers and environmental managers to sustainable success. *Greener Management International*, 38, 45–58.

Schaltegger, S., Lüdeke-Freund, F., & Hansen, E. G. (2016). Business models for sustainability: A co-evolutionary analysis of sustainable entrepreneurship, innovation, and transformation. *Organization & Environment, 29*(3), 264–289. doi:10.1177/1086026616633272.

Schaltegger, S., & Wagner, M. (2011). Sustainable entrepreneurship and sustainability innovation: Categories and interactions. Business Strategy and the Environment, 20(4), 222–237. doi:10.1002/bse.682.

Schillebeeckx, S.J.D., Merrill, R.K., 2022. Conflicting institutional logics as a safe space for collaboration: action research in a reforestation NGO. In: *Handbook on the Business of Sustainability*. Edward Elgar Publishing, pp. 344–360.

Schumpeter, J. A., & Swedberg, R. (2013). The theory of economic development: An inquiry into profits, capital, credit, interest, and the business cycle. Harvard University Press.

Schwartz, S. H. (1990). Individualism-collectivism: Critique and proposed refinements. *Journal of cross-cultural psychology*, 21(2), 139-157.

Scottish Enterprise (2024) Scottish Enterprise's Impact Appraisal and Evaluation Guidance.

Shepherd, D. A., & Patzelt, H. (2011). The new field of sustainable entrepreneurship: Studying entrepreneurial action linking "what is to be sustained" with "what is to be developed". Entrepreneurship Theory and Practice, 35(1), 137–163. doi:10.1111/j.1540-6520.2010.00426.x.

Sinkovics, N., Sinkovics, R. R., Hoque, S. F., & Czaban, L. (2015). A reconceptualisation of social value creation as social constraint alleviation. Critical perspectives on international business, 11(3/4), 340-363.

Sinkovics, N., Sinkovics, R. R., & Yamin, M. (2014). The role of social value creation in business model formulation at the bottom of the pyramid–implications for MNEs?. *International Business Review*, 23(4), 692-707.

Star, S. L., & Griesemer, J. R. (1989). Institutional ecology, "translations," and boundary objects: Amateurs and professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39. Social Studies of Science, 19(3), 387–420. doi:10.1177/030631289019003001.

Starik, M., Stubbs, W., Benn, S., 2016. Synthesising environmental and socio-economic sustainability models: a multi-level approach for advancing integrated sustainabilityresearch and practice. Australas. *J. Environ. Manag*. 23, 402–425

Stephan, U., Patterson, M., Kelly, C., & Mair, J. (2016). Organizations driving positive social change: A review and an integrative framework of change processes. *Journal of management*, 42(5), 1250-1281.

Stiglitz, J.E. Sen, A. and Fitoussi, J.P. (2009), "Report by the commission on the measurement of economic performance and social progress",

Strömmer, R. (2022). Sustainability metrics in business: A case study on impact value chains. *Journal of Business Research, 148*, 324–336.

Stronge, W. J. (2018). Impact mechanics. *Cambridge university press*.

Stubbs, W. (2017). Sustainable entrepreneurship and B Corps. *Business Strategy and the Environment, 26*(3), 331–344. doi:10.1002/bse.1920.

Sustainable Finance Disclosure Regulation (SFDR). (2019). Regulation (EU) 2019/2088 of the European Parliament and of the Council of 27 November 2019 on sustainability-related disclosures in the financial services sector.

Swart, R., Raskin, P., & Robinson, J. (2004). The problem of the future: Sustainability science and scenario analysis. Global Environmental Change, 14(2), 137–146. doi:10.1016/j.gloenvcha.2003.10.002.

Terán-Yépez, E., Marín-Carrillo, G. M., Casado-Belmonte, M. del P., & Capobianco-Uriarte, M. de las M. (2020). Sustainable entrepreneurship: Review of its evolution and new trends. *Journal of Cleaner Production*, 252, 119742. doi:10.1016/j.jclepro.2019.119742.

Social Value International, The Principles of Social Value (2021),

The SROI Network (2012), "A guide to social return on investment".

The SROI Network (2015), "A guide to social return on investment", Nicholls, J., Lawlor, E., Neitzert, E. and Goodspeed, T.

Trautwein, C. (2021). Sustainability impact assessment of start-ups: Key insights on relevant assessment challenges and approaches based on an inclusive, systematic literature review. *Journal of Cleaner Production, 281*, 125330. doi:10.1016/j.jclepro.2020.125330

Vanclay, F. (2004). The triple bottom line and impact assessment: how do TBL, EIA, SIA, SEA and EMS relate to each other? *Journal of Environmental Assessment Policy and Management*, 6(03), 265-288.

Van Zanten, J. A., & Van Tulder, R. (2018). Multinational enterprises and the Sustainable Development Goals: An institutional approach to corporate engagement. *Journal of International Business Policy*, 1(3–4), 208–233. doi:10.1057/s42214-018-0008-x.

Varga, V., & Rosca, E. (2019). Driving impact through base of the pyramid distribution models: The role of intermediary organizations. *International Journal of Physical Distribution & Logistics Management*, 49(5), 492-513.

Visser, W., Matten, D., Pohl, M., & Tolhurst, N. (2009). The A to Z of corporate social responsibility: A complete reference guide to concepts, codes and organisations. Germany: Wiley

Starik, M., Stubbs, W., & Benn, S. (2016). Synthesising environmental and socio-economic sustainability models: A multi-level approach for advancing integrated sustainability research and practice. *Australasian Journal of Environmental Management*, 23(4), 402-425.

Waas, T., Hugé, J., Verbruggen, A., & Wright, T. (2014). Sustainable development: A bird's eye view. *Sustainability, 6*(1), 374–409. doi:10.3390/su6010374.

Weissbrod, I., & Bocken, N. M. P. (2017). Developing sustainable business experimentation capability – A case study. *Journal of Cleaner Production*, 142, 2663–2676. doi:10.1016/j.jclepro.2016.11.009.

Wickert, C. (2016). "Political" corporate social responsibility in small-and medium-sized enterprises: A conceptual framework. Business & Society, 55(6), 792-824.

Wöhler, J., & Haase, E. (2022). Exploring investment processes between traditional venture capital investors and sustainable start-ups. *Journal of Cleaner Production, 377*, 134318. doi:10.1016/j.jclepro.2022.134318

Zahra, S. A., & Wright, M. (2016). Understanding the social role of entrepreneurship. *Journal of Management Studies*, 53(4), 610–629. https://doi.org/10.1111/joms.12149

Zaccai, E. (2012). Over two decades in pursuit of sustainable development: Influence, transformations, limits. Environmental Development, 1(1), 79–90. doi:10.1016/j.envdev.2011.11.002.