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**Sustainability Performance Evaluation
for Start-ups: Defining the
Characteristics for a Tailored ESG
Assessment Tool**

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Abstract

Environmental, Social, and Governance (ESG) reporting has become a fundamental element of corporate disclosure. An increasing number of stakeholders, including investors, is demanding the disclosure of this typology of non-financial information as basis for their decision-making, thus shaping the regulatory context. However, the research on ESG reporting remains poorly explored among small and medium enterprises (SMEs), and almost inexistent among Start-Ups (SUs). By examining the characteristics of major ESG evaluation tools designed prevalently for large firms and SMEs, this thesis highlights the extent to which the current needs of SUs in the context of ESG performance assessment remain unaddressed. This study reveals that, in contrast with SMEs, sustainability disclosure for SUs should focus on the governance dimension and the business core structure. Moreover, it should be cost- and time-efficient as well as consider the intrinsic characteristics of SUs in order to meet their needs. Finally, the characteristics that a ESG evaluation tool tailored to SUs should possess are discussed. The latter should be flexible and able to adapt to highly unstable business models, focused on materiality, cloud- and AI-based so to minimise errors and resources, and framed on both national and international frameworks so to be able to integrate new information as the venture scales up.

Key words: ESG, Startup, sustainability, non-financial information, SMEs

Table of contents

Introduction	5
CHAPTER 1	8
1.1. The evolution of the Corporate Sustainability principle.....	8
1.2. ESG (Environment, Social and Governance) considerations.....	10
1.2.1. E –Environment.....	11
1.2.2. S – Society	12
1.2.3. G – Governance	13
1.3. ESG and Sustainable Businesses	14
1.4. Sustainability regulation.....	16
1.4.1. European Regulation in ESG.....	18
1.4.2. Effects on reporting and the materiality issue	21
CHAPTER 2	26
2.1. SMEs challenges in ESG implementation.....	26
2.2. ESG as a competitive advantage in SMEs.....	32
2.3. Contextualisation of SME ESG reporting	37
CHAPTER 3	42
3.1. From Small and Medium Enterprises to Start-Ups: differences and similarities	42
3.2. Sustainability in the Start-Up context.....	46
3.3. Existing tools and methodologies for ESG evaluation.....	48
3.3.1. B Impact Assessment	54
3.3.2. Strumento di Autovalutazione della Buon Impresa - SABI.....	57
3.3.3. Ecomate	60
3.3.4. ESGeo	63
3.3.5. EcoVadis	65
3.3.6. Greenomy.....	66
CHAPTER.....	68
4.1. Understanding the needs of Start-Ups	68
4.2. Pros and cons of current ESG evaluation tools	72
4.3. Different tools for different needs: the purpose of ESG assessment tools for SMEs and Start-Ups.....	75
4.3.1. Building an ESG guide software for Start-Ups	75
4.3.2. Uses of sustainability performance assessment in the Start-Up context.....	78
Conclusions	79
References	81

Introduction

Over the past decades, the global interest in reporting on sustainability activities from enterprises has been constantly increasing. However, the concept of business sustainability has more remote origins.

During the 1960s, characterised by social, environmental and political movements, the concept of “full profit maximisation” started to be questioned. It is only during the 1970s and the 1980s that the phenomenon of corporate social responsibility for large firms was initiated (Tilley, 1999). Nowadays, environmental, social and governance (ESG) issues appear as a crucial component of firm’s internal and external communication as well as corporate disclosure. If on one side, it supports companies in providing a clearer image of their business activities; on the other, it assists managers in managing corporate development in non-financial business areas (Gomes dos Santos et al., 2022).

For these reasons, over the past years, academics focused their research in deepening the academic knowledge on the reporting of sustainable activities. Analyses concentrated their interest in investigating the relationship existing between sustainability disclosure and firm performance for both large and listed undertakings (Steyn, 2014; Atan et al., 2018). In order to do so, many ESG reporting frameworks have been designed to support scholars, business practitioners, and other stakeholders in assessing the sustainability performance of large undertakings.

However, it has been noted that the domain of sustainability disclosure in small and medium enterprises (SMEs) has drawn less attention from academics if compared to larger undertakings (Shalhoob & Hussainey, 2023). The importance of bridging this academic gap is evident as SMEs constitute about 99% of all the undertakings operating within the EU, provide for to thirds of all the private sectors jobs and generate more than half of the total added value created by companies within the European Union (European Parliament, 2023b). Their definite characteristics, such as the presence of a simple organizational structure, the limited access to financial resources and human capital, and the strong importance attributed to stakeholder relationship (Gjergji et al., 2021) mark the division between large companies and the latter.

However, existing literature tends to consider SMEs as “small large companies” (Tilley, 1999). Evidence of this is obtained by analysing studies on the level of implementation of

ESG reporting by SMEs. The research shows a low rate of implementation due mostly to the high cost and complexity derived from completing the assessment as well as the heterogeneity of the sustainability reporting methodologies and disclosures available in the market (Steinhöfel, 2019; Johnson, 2015). However, even if other existing studies demonstrate the presence of tangible benefits for SMEs in implementing and reporting on sustainable activities (Brammer et al., 2011; Caldera et al., 2019; Henisz et al., 2019), these disclosure practices remain poorly exploited by SMEs.

Additionally, within the wider group of SMEs, the Start-Up (SU) category remains completely overlooked by research. On this matter, even though SUs pertain to the SMEs environment they differentiate under several dimensions such as age of incorporation, growth, risk and innovation (Ehsan, 2021). Moreover, SUs face further challenges in different dimensions namely, finance, support mechanisms environment (Salamzadeh & Kesim, 2015), human capital, technology, and implementation (Karaarslan & Soylu, 2023).

For this reason, by taking into account that all SUs are SMEs, but not all SMEs are SUs, this thesis aims at filling the academic gap about sustainability reporting for SUs.

This goal is achieved in several steps. First of all, the historic background of sustainability is described, followed by an analysis of the state of work of legislative frameworks shaping sustainability regulation. Later, the SMEs environment is introduced by focusing on both challenges and opportunities deriving from ESG implementation. Then, the discussion will concentrate on SUs and on their differences with SMEs also in terms of sustainability. Thus, an in-depth study of several ESG valuation tools for SMEs is conducted in order to understand whether the current tools might suit the SUs specific needs. Finally, based on the results of the analysis, this thesis proposes a guide ESG assessment tool tailored to the SUs' specific needs and characteristics.

The thesis demonstrates the benefits of having separate tool assessing the sustainability performance of both SMEs and SUs because the objective of reporting on NFI is different between these undertakings. SMEs report on sustainability performance mostly for compliance reasons, while SUs seek an internal control tool as well as a sustainable decision-making guide supporting the venture in managing risk. For this reason, we

propose an ESG assessment tool designed based on the specific needs and requirements of SUs.

The study conducted identifies a considerable gap within the existing body of literature, bringing to light a significant void in the common understanding of sustainability reporting practices. In response to this deficiency, the study has put forward an innovative and forward-looking approach method equipping SUs with the tools and strategies needed to effectively report on their sustainable practices.

The study's findings have broad implications for SUs, investors, regulators, researchers, sustainability professionals, as well as the general public, all of whom will benefit from a more robust and effective approach to sustainability reporting in the SUs sector.

CHAPTER 1

1.1. The evolution of the Corporate Sustainability principle

The history toward *Corporate Social Responsibility* (CSR) saw the light during Ancient Greece, when local authorities established the first code of conduct for entrepreneurs and merchants. The modern era of CSR can be traced back to 1953 with the publication of the book "*Social Responsibilities of the Businessman*" by Howard Bowen in 1953. CSR has been defined by academics as an ongoing commitment from an organisation to act ethically and support economic development, while enhancing employees, community, and society's quality of life (Watts & Holme, 1999). CSR is a stakeholder-oriented concept convening that enterprises exist within networks of stakeholders having potentially conflicting demands. In this context, organisations voluntarily commit themselves to address social and environmental-related issues on a multidimensional basis (Lindgreen & Swaen, 2009).

By 1980 it was generally agreed that corporate managers had an ethical responsibility toward the environment and the society, and the attention was shifted toward the concept of *Sustainable Development*. The term was first introduced within "*Our Common Future*", a book published by the World Commission for Environment and Development (WCED) in 1987.

The WCED defines sustainable development as the ability '*to ensure present needs are met without compromising the ability of future generations to meet their own*' (World Commission on Environment and Development, 2009). This concept is based on the idea that each generation is at the same time the beneficiary of previous generation and a protector of the Earth for future generations (Weiss, 1990). Moreover, according to the sustainability principle, humans should manage at the same time both the economic and environmental systems to take advantage of the existing surplus of capital and use them as base asset for the coming generations (Paiva Duarte, 2013).

During the last years, researchers have been trying to find a viable way to reconcile economic development and environmental sustainability. To be able to find an answer to this question, scholars had to identify the different inputs contributing to these objectives. The literature defines capital as being composed of manufactured capital, human capital and natural capital.

Manufactured Capital. Comprises material goods or fixed assets contributing to the production processes rather than being an output by themselves (e.g., machines, buildings, infrastructures, tools).

Human Capital. Consists of the individuals' knowledge, skills, values, beliefs and motivation, necessary for production.

Natural Capital. Includes any stock or flow of energy and materials used to produce goods and services. Moreover, natural capital: (1) provides raw material for both production and consumption (source function); (2) absorbs waste from production (sink function); (3) provides basic life-support functions enabling production; and (4) supplies 'amenity services', relevant for human well-being.

If the capital is not maintained and protected the amount of goods and services manufactured will diminish as it deteriorates (Ekins, Simon, Deutsch, Folke, & De Groot, 2003). Therefore, any decline in capital stock is a sign of unsustainable consumption. Consequently, sustainability, to be effective, must consider the *maintenance* and the *restoration* of vital aspects related to society, environment and economy (Sutton, 1998).

Given the broadness of the sustainability concept, it is logical for the paradigm to be analysed under different perspectives. The main approach considers sustainability as ranging from *weak* sustainability to *strong* sustainability (Turner, 1993). The first paradigm is based on the idea that manufactured capital and human capital are fully and completely substitutable and the well-being they contribute to generate is uniform. What is relevant is the total value of aggregate stock of capital which should be maintained or increased to benefit future generations (Solow, 1993). Thus, following the weak sustainability principle it is justified to increase production at the expense of natural capital. However, although interchangeability of natural capital with manufactured and human capital can be considered, their absolute substitutability appears unlikely with the knowledge and technologies currently available (Victor, Hanna, & Kubursi, 1998).

On the other side, strong sustainability considers that different forms of capital should be addressed and considered separately, and that substitution is accepted to a limited extent. From the strong sustainability principle, manufactured capital is consistently different from natural capital as it provides different functions and contributions to wealth generation (Victor P., 1991). The assumption at the heart of this paradigm

assumes that natural capital cannot be replaced or duplicated, and that there exist specific examples of 'critical natural resources' providing unique contribution to human welfare (Ekins, Simon, Deutsch, Folke, & De Groot, 2003).

Sustainability is thus based on several grounds such as the degree of technological advancement and the extent to which resources are produced and exploited. Other influencing elements that are also worth mentioning are private and public investments as well as the political direction which should guarantee an equitable context for both present and coming generations, especially with respect to natural capital.

1.2. ESG (Environment, Social and Governance) considerations

The term ESG (Environment, Social and Governance) was first coined by the Freshfields Report of the United Nations Environment Programme Initiative in 2005. The article defines ESG as "*the duty to act in the interests of the beneficiaries (...) to give effect to their views in relation to matters beyond financial return*" (United Nations Environment Programme Initiative, 2005). Another definition is provided by the Enhanced Analytics Initiative, a project aiming at integrating extra-financial issues with traditional financial analysis and a long-term view, which describes ESG issues as being characterised by: (1) their focus on public interest; (2) their qualitative nature as well as the impossibility to rapidly quantify them in monetary terms; (3) their ability to incorporate externalities not considered by the market; (4) them being the object of focus and/or regulatory frameworks (See: <http://www.enhanced-analytics.com/>). Further, ESG performance can be interpreted as a management quality measurement, representing the company's ability to face long-term trends while having a competitive edge (Taliento et al.; 2019).

The main difference between CSR and ESG is that while CSR initiatives are implemented on a voluntary basis and concentrate on fostering the business' relationship with external stakeholders, ESG is usually perpetuated as a corporate strategy addressing both investors and regulatory requirements. Moreover, ESG involves continuous measuring and reporting on environmental, social and governance considerations to the risks and potential impacts to which the company is exposed (Sustainalytics, 2022).

The ESG issues, as mentioned at the beginning of this paragraph, lay their basis on three pillars, namely Environment, Society and Governance (Fig. 1), which will be discussed individually in the following sections.

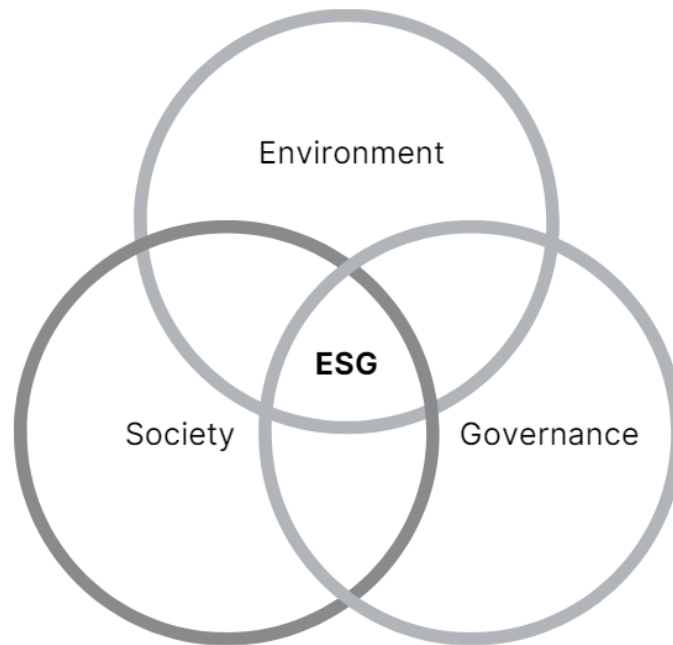


Figure 1 – ESG pillars

1.2.1. E –Environment

Environmental issues consider the extent to which a company exploits natural resources and the impact of both its operations and supply chain on the environment. It analyses the attempt to reduce direct and indirect pollution generated by its activities as well as the improvement in the air and water quality of the property and surrounding communities (Klassen & Whybark, 1999).

Environmental practices consist of the measures of company's emissions, pollution, waste and community health. Moreover, it includes the climate change risks the company faces as well as its environmental and natural resource conservation (S&P Global, 2019; Alsayegh et al.; 2020).

In incorporating environmental management practices into the decision-making process, companies need to settle an environmental management scheme to prevent and control the environmental impact during the supply chain through the analysis of both input (as

materials, energy and water) and output (as emissions, waste and effluents) indicators (Alsayegh et al.; 2020).

All these elements aim at reducing the climate risk, formed by two subcomponents: the transitional risk and the physical risk (Bank for International Settlement, 2021). The former is associated to the change in regulations aiming at achieving a low-carbon economy and can be measured by computing the current level of greenhouse gas (GHG) emissions. On the other hand, the latter, embodies all the financial losses due to extreme weather events and climate disasters like flooding, sea level rising, wildfires outbreaks, droughts and storms. Finally, an improvement in environmental performance reflects how effectively a company is managing climate risk and addressing its environmental challenges in leaving a better environment for future generations (Brockett & Rezaee, 2012).

1.2.2. S – Society

Social considerations refer to the ability of the entity to manage the relationships existing within its network made of employees, suppliers, costumers, communities and political environment in which they operate (S&P Global, 2020). Within the company, social issues address working conditions, health, safety and relationship with employees, as well as staff wellness, respect of diversity and human rights and the recognition of fair labour prices (Alsayegh et al.; 2020).

Many supranational organisations such as the International Labour Organisation (ILO), the UN's International Bill of Human Rights (IBHR) and the European Commission of Human Rights (ECHR) deal with the respect and the promotion of minimum social standards at the international level including social factors like human rights, labour conditions, slavery, child labour, diversity policies and racial disparities (S&P Global, 2020).

Social considerations, if correctly addressed, bring the business some benefits both at the internal and external level. Internally, better health and safety lead to an increase in productivity and lower hiring and training costs due to a higher employee retention rate and productivity. Externally, benefits include an increase in customer loyalty and trust

toward the company's brand and improved corporate reputation (Alsayegh et al., 2020; Turban & Greening, 1997).

1.2.3. G – Governance

Corporate governance represents the approach in which businesses are managed and led. It comprises the relationships between all stakeholders, such as partners, board of directors, board of employees, supervisory and control bodies, and other interested parties (S&P Global, 2020). A well-defined governance policy makes all these groups dialogue to determine common objectives as well as individual responsibilities, making it essential for good business performance. Moreover, effective governance is important for the good allocation, preservation and increase of capital (Pereira et al.; 2021).

Gender, ethnical diversity as well as equity are factors which have experiences an increase in their significancy over time as investors are more interested in better representation of women and people from different backgrounds on corporate boards along with equal compensation and career advancements possibilities. However, the relationship between ESG performance and the presence of women on Board of Directors remains controversial; despite Velte's study resulted in a positive relation (Velte, P; 2016), Manita et al. found no significant relationship between management gender diversity and ESG disclosure (Manita et al.; 2018).

Generational diversity is another key component for improving good corporate governance codes. It promotes problem-solving and improves the management quality, enabling a more effective design of vision and strategies to address financial and extra-financial aspects. Consequently, it encourages companies to maintain a sustainable approach to their business (Ferrero-Ferrero et al.; 2013).

Moreover, both the compensation and the supervision of the Board of Directors reveal themselves as relevant governance factors since conflicts of interest may rise and harm the overall firm performance thus representing a risk. Therefore, it is possible to deduct that good governance minimises the risks of corruption, mismanagement, and regulatory penalties.

To sum up, the governance characteristics constitute the administrative micro-environment in which environmental and social policies are formed, flourish, and are

implemented by executives (Taliento et al.; 2019). On this basis, a robust structure combining the three dimensions of ESG should be created to strengthen management practices in monitoring and enhancing corporate sustainable performance as defined by Elkington (2000).

1.3. ESG and Sustainable Businesses

Sustainable businesses are defined as organisations observing “*the ‘triple bottom line’ of economic prosperity, environmental quality, and social justice*” (Elkington, 2000). Unlike traditional businesses, they are not merely focused on the financial performance of their activity regardless of their impact on other dimensions. They seek profitability and marketability through the integration of environmentally friendly and socially responsible initiatives by holding a long-term perspective. This business model maximises the potential to expand enterprises market segment to those individuals seeking sustainable goods, services and production processes (Rosenbloom, 2012). Therefore, a company can be considered truly sustainable when it is financially sound as to create long-term value, invests in innovation to minimise its environmental footprint and achieves competitive advantage by aligning to the society’s expectations (Alsayegh, M.F., Abdul Rahman, R., Homayoun, S., 2020).

By embedding sustainability into their business model, firms can enjoy several benefits. On the environmental side, by exploiting innovative technologies companies can foster resource productivity while minimising disposals as well as minimize the costs of dealing with pollution and waste management (Porter, M., Van der Linde, C.; 1995). Socially, being involved in sustainable practices increases the employer attractiveness and reputation, making it easier for the company to onboard top talent employees and retain high performers over the long term (Turban, D., Greening, D.; 1997). This constitutes again an effective strategy aimed at cutting costs as the firm will have to allocate lower resources for the research of new members as well as the training of new hires. Finally, from a governance perspective, a sound administrative board will enable the company to maintain its long-term vision even when in the middle of a crisis, to make informed decisions and explore novel solutions to unexpected controversies.

Embedding ESG factors into corporate decision-making represents a good risk management practice. Every business is exposed to a variety of ESG-related issues or controversies. Some of them are material and may cause financial or reputational damage. Based on this, it is possible to consider ESG risk as regular business risk that should be part of every company's standard risk reduction process. Consequently, companies that implement effective ESG practices are less likely to face harmful controversies and are better able to respond when such incident occur (Sustainalytics, 2022). In this way, they are able to create value for investors and other stakeholders while sustaining a long-lasting business model (Alsayegh et al., 2020).

Given its nature, ESG is also used as: (1) corporate performance indicator; (2) decision-making tool to direct resource allocation; (3) social and environmentally sustainable investment strategy; (4) organisational practice (Pereira et al.; 2021). Paying attention to the social and environmental safeguard, coupled with both a robust corporate governance structure and functioning, represents a solid condition able to facilitate value creation in a comprehensive sense. That is, while internal or external corporate growths may not foster the global performance in the short run, the financial performances of companies are shown to be improvable through a positive correction due to an engagement in ESG (Taliento et al.; 2019).

From a strategic point of view, embedding environmental, social and governance considerations could reveal itself to be an effective approach for achieving a competitive advantage in the market, foster operational efficiency, reputation, costumers' trust, and ultimately improve shareholders' value. A clear example of this strategy and related benefits is represented by *Schneider Electric* (SE), a corporation founded in 1836 operating in the digital solution and energetic sector. Over the last 20 years, SE implemented a transformation strategy aimed at exploiting efficiency and sustainability opportunities for business across the globe by providing cutting-edge digital solutions. To attain this objective, SE acted to reach a carbon-neutral footprint ahead of the 2050 net-zero target, as well as replacing individual use plastics from its primary and secondary packaging with recycles cardboard and working with suppliers to maintain positive work environments. In addition, the company encourages female representation at the leadership level and develops the internal human capital by providing employees with regular upskilling (Sustainability, 2023). All these actions provide the company with

a competitive advantage which is not merely based on product quality: the dynamic commitment on the ESG level, allows SE to foster its brand reputation and increase customer loyalty. Under these conditions, SE's clients contribute to its competitive advantage by accepting to pay a premium price.

Based on this evidence, it is possible to assess that ESG practices have an important economic impact on the firms and the industries in which they operate (Porter, M., Serafeim, G., Kramer, M.; 2019), foster corporate performance (Ye, C., Song, X., Liang, Y.; 2022) and contribute to the firm's competitiveness which is strongly affected by the capacity of the latter to define and present both financial and non-financial metrics (Pereira et al.; 2021).

On the stakeholders' side, ESG implementation and disclosure has positive effects: (1) it reduces the information asymmetry between executives and the parties involved; (2) points out the organisations' legitimacy and excellence to society; and (3) increases the business' accountability for the users of the firm's financial and non-financial information (NFI) (Alsayegh et al., 2020).

1.4. Sustainability regulation

The concepts of ESG and sustainability, although related, identify two distinct concepts. Sustainability analyses the way in which businesses and corporations impact the environment and the society. Conversely, ESG assesses the extent to which the environmental, social and governance dimensions have an impact on the business performance. Under this perspective, these three elements together with the approach implemented to tackle them represent a form of risk-management practice.

Generally, it is possible to assess that information asymmetry exists between the firm management and stakeholders about its performance. This imbalance is partially fulfilled by the quarterly and yearly reports published by corporations. However, the latter only consider economic information and the impact on shareholders, disregarding the firm's impact on the ESG dimensions. To further reduce this asymmetry of information and satisfy the increasing demand from interested parties, firms started to attach or incorporate sustainability reports to their financial annual accounts (Zieba & Johansson, 2022).

By doing so firms are able to communicate to the community that the organization is not gearing its business towards the pursuit of pure profit at the expense of fulfilling its obligation to its employees, their customers, the environment and the society at large (Abdul Rahman & Alsayegh; 2021) but that instead the business is undertaking sustainable responsible activities to benefit all stakeholders. Moreover, by disclosing ESG performance, companies are able to signal the organisation legitimacy and excellence to society while increasing accountability perception in external users of the company's information (Alsayegh et al., 2020).

Additionally, firms may opt to voluntarily publish the influence of their sustainable activities as a strategy to differentiate them from less responsible firms. When the company's audience is able to clearly distinguish the two groups this action acquires particular relevance. This because the voluntary disclosure is enforced by firms performing sustainable activities which are not visible to stakeholders. To further foster the reliability of the sustainability disclosure, some firms are willing to request for additional external assurance so to additionally increase shareholder value. Having one firm engaging in voluntary sustainability disclosure encourages its peers to follow the lead, thus engaging in more responsible activities contributing positively to both the environment and the society (Bagnoli & Watts, 2016).

Even though the number of firms publishing both qualitative and quantitative ESG data has increased over time, ESG disclosure is not merely a result of companies' voluntary actions. It is also a result of such information being recognised by both institutions and investors (Siew, 2015). In recent years, there has been a growing generation of reporting regulations with the objective of incentivising companies to disclose their ESG efforts (Alsayegh et al., 2020). For example, in Europe countries are adopting both voluntary and mandatory measures to foster ESG disclosure. The European Union (EU) is providing structured compliance proceeding while Member States are providing guidance and other instruments supporting improvements in sustainability reporting.

Although the objective of regulation is to enhance the benefits of voluntary compliance by making it mandatory for most firms, it can take the form of 'comply or explain' mandates providing firms with the option of not increasing ESG disclosure and opt for explaining the reason behind them not releasing ESG data. This phenomenon might push firms in pursuing sustainable responsible activities with the sole objective of meeting the

minimum legal requirements instead of engaging in such activities as to create long term value for stakeholders. Moreover, Krueger et al. (2021) argue that ESG mandates do not constitute an effective tool to foster reliability of NFI as data could be too complex to retrieve, intrinsically qualitative and eventually immaterial. Conversely, according to Ioannou & Serafeim (2017) disclosure regulation enhances businesses transparency initiating a “race to the top” in sustainability matters.

Finally, regardless of the nature of the disclosure (voluntary vs. mandatory), firms have the tendency to portray a better version of their performance. Such activity can be referred to as *green washing* (GW). The academic literature defined GW as a “*symbolic communication*” with “*no substantive actions on environmental issues*” (Lyon & Maxwell, 2011). In simpler terms, it is possible to talk about GW when a company “includes a set of corporate identity-washing practices intended to capitalize on the potential benefits of a green image, without any actual action” (Ruiz-Blanco et al., 2021). Studies have demonstrated that not all business categories undertake GW practices. Ruiz-Blanco et al. (2021) determine that such risk is higher for companies not disclosing their sustainability related information while it is lower for companies operating in environmentally sensitive industries. For this reason and considering the information asymmetry due to absent disclosure, GW exposure represents a material risk for stakeholders of non-disclosing firms. The relevance of the GW risk is such that at both national and supranational levels, governments are attempting to formalise the need for external assurance, thus adding value for stakeholders with long lasting business models ultimately fostering stakeholders’ trust (Alsayegh et al., 2020).

1.4.1. European Regulation in ESG

As discussed in the previous paragraph, the European Union is currently taking action to tackle the issues related to sustainability and the impact of businesses on the whole ecosystem. In the last ten years many steps towards a greener Europe have been undertaken. The first phase of the journey towards sustainability has been the European Green Deal (EGD), approved in 2020, including a set of policy initiatives among which the Regulation 2021/1119/EU of the European Parliament and of the Council also known as the “Climate Law”. Thanks to this policy the EU engages in becoming the first carbon neutral continent by 2050 (EU Technical Expert Group on Sustainable Finance, 2020),

while scaling down carbon emissions by at least 55% compared to 1990 levels (European Commission, 2023a). These objectives are inspired by the Paris Agreement signed in 2013 and include the improvement of the EU current citizens and future generations' welfare by supporting internationally competitive and resilient companies, technological innovation, clean energy and sustainable food production (European Commission, 2023b). However, in order to meet the target, interventions at both the public and private sectors are needed also via direct investments addressed to the green transition of companies. For this reason, the EU committed to invest 1 trillion Euros over the next ten years, 30% of which will be financed through the most recent "Next generation EU" (European Commission, 2023c).

The EGD is only one of the tools currently in force to meet the sustainability target. At a global level, the 2030 Agenda for Sustainable Development was ratified by all the United Nations member States in 2015 (United Nations, 2023). The 2030 Agenda incorporates the aims of the EGD and is organised around 17 Sustainable Development Goals (SDGs) to be attained by 2030. SDGs are defined by the European Commission as "*journey towards a union that develops and shares prosperity while preserving the life – and economy – supporting natural ecosystems for this and future generations. A Union that enables its citizens to live well thing planetary boundaries*" (European Commission, 2020).

However, although the policies implemented by the different supranational entities represent a first step towards a sustainable economy, the need for sustainability disclosure regulation remains relevant.

To this purpose, on the 5th of December 2014 the Directive 2014/95/EU or Non-Financial Reporting Directive (NFRD) came into force. The aspiration of the Directive was the amendment of the Directive 2013/34/EU ("Accounting Directive") with respect to the disclosure of NFI by large public-interest entities (PIEs) with more than 500 employees, including listed companies, banks and insurance companies (EU Technical Expert Group on Sustainable Finance, 2020). With the enforcement of this new Directive, all the aforementioned entities had to disclose information with respect to environmental and social, diversity on the company's board (in terms of age, gender, professional and educational background) as well as bribery and anti-corruption (Hahnkamper-Vandenbulcke, 2021).

Nonetheless, if on one side the mandatory disclosure concerning NFI for certain companies fostered transparency in sustainability matters, on the other a European guide supporting companies in their progress towards the objectives of the EGD was still missing. In 2020, the EU, with the support of the Technical Expert Group on Sustainable Finance, enforced the Regulation (EU) 2020/852 (“EU Taxonomy”): a classification scheme converting the EGD targets into criteria for investment purposes (European Commission, 2021). The Taxonomy’s criteria fall into six separate categories: (1) Climate change mitigation; (2) Climate change adaptation; (3) Sustainable use and protection of water and marine resources, (4) Transition to a circular economy; (5) Pollution prevention and control, (6) Protection and restoration of biodiversity and ecosystems (EU Technical Expert Group on Sustainable Finance, 2020) and cover undertakings of 40% of listed companies responsible for at least 80% of the greenhouse emissions in Europe (European Commission, 2023d). Additionally, the Taxonomy defines performance thresholds for economic activities that “*make a substantive contribution to one of the six environmental objectives*”, “*do no significant harm to the other five*” and “*meet minimum safeguards*” such as the OECD Guidelines or the United Nations Guiding Principles on Business and Human Rights (European Commission, 2023d).

Starting from 2023 (with information disclosed pertaining to financial year 2022), eligible companies will have to include to what extent their actions are correlated to taxonomy-aligned activities. To this end, the EU Taxonomy provides mandatory requirements on disclosure fostering transparency on environmental performance while supporting companies in mitigating market fragmentation, securing them from GW and financing sustainable projects so to meet the EGD objectives.

To further assist the enforcement of the EU Taxonomy, some delegated acts explaining how the disclosure should be performed by both financial and non-financial undertakings have been enforced (EU Technical Expert Group on Sustainable Finance, 2020). The most relevant, for the sake of this thesis, is the “Disclosure Delegated Act” specifying the content and presentation to be published by companies subject to the “Accounting Directive”. More specifically, it specifies the methodology to be applied by companies in order to be compliant with the EU Taxonomy.

The EU Taxonomy, together with the EGD and the NFRD represent a solid starting point for the achievement of a ‘Sustainable Europe’. However, the European Commission is

continuing its work so to enrich the already present sustainability legislation. To this extent, starting from the reporting financial year 2024, large companies and all listed companies (with exception of micro-enterprises) will be required to regularly disclose NFI. Such an improvement in sustainability disclosure will be possible thanks to the enforcement of the Directive 2022/2464/EU also known as Corporate Sustainability Reporting Directive (CSRD). The CSRD will require about 50,000 companies to disclose NFI compared to the 11,700 companies eligible under the NFRD (European Commission, 2023e). Following the CSRD companies *“shall include in the management report information necessary to understand the undertaking's impact on sustainability matters, and information necessary to understand how sustainability matters affect the undertaking's development, performance and position”* (Art.19a §1). The information disclosed should include *“the resilience of the company in relation to risks related to sustainability matters; the opportunities for the company related to sustainability matters; the plans of the company (...) ensuring that its business model and strategy are compatible with the Paris Agreement and the objectives of the European Green Deal to achieve carbon neutrality by 2050; how the company accounts for the interests of the undertaking's stakeholders and of the impacts of the undertaking in sustainability matters”* (Art. 19a § 2).

This innovative Directive intends to modernise and extend the regulation regarding environmental and social information providing an extensive corporate framework with both quantitative and qualitative data to simplify the evaluation of companies' sustainability impacts and risks (European Commission, 2021) while helping investors, consumers and other stakeholders to assess the sustainability performance of the company, as part of the EGD.

1.4.2. Effects on reporting and the materiality issue

In the last two decades there has been an increasing interest in NFI disclosure. Evidence highlights that audiences are concerned by companies' transparency and policies in sustainability matters (Eccles et al., 2011). This phenomenon is caused by several reasons. One of them is the increase in companies' market value due to the presence of intangible assets which rose from 17% in 1975 to 90% in 2020 (Ocean Tomo, 2023). Another force influencing the public interest in NFI is the growth in assets managed by Socially Responsible Investment (SRI) funds which use NFI, specifically sustainability

information, as a fundamental component of their decision-making process (Eccles et al., 2011). Finally, markets perceive transparent companies as less risky because of their ability to provide a higher degree of certainty about their ability to deal with ESG risks (Eccles et al., 2012).

Although the investors' demand for the disclosure of this typology of information, companies still lack the necessary guidance allowing them to satisfy this need. One obstacle is represented by the absence of harmonised reporting standards (Eccles et al., 2011) which would allow comparability as well as providing a benchmark against which assess published reports and provide assurance (Eccles et al., 2012). The key issues encountered by framework building entities is the assessment of materiality in ESG issues in both qualitative and quantitative terms in their weightings on value creation and sustainability.

The concept of material information has been defined by the Financial Accounting Standard Board (FASB) as information that if omitted or misstated could influence the decision users will make based on that information. The International Accounting Standard Board instead accounts for materiality as *“an entity-specific aspect of relevance based on the nature or magnitude (or both) to which the information relates in the context of an individual's entity's financial report”*. Additionally, the International Integrated Reporting Council (2013) proposes that a *“matter is material if it is of such relevance and importance that it could substantively influence the assessments of providers of financial capital with regard to the organisation's ability to create value over the short, medium and long term”*.

By analysing the three definitions provided, it is possible to highlight three separate areas of relevance: (1) the scope in terms of range of information provided; (2) stakeholder's groups comprising those likely to be affected by the information; (3) the time frame considered (KPMG, 2014).

After discussing the concept of materiality, it is crucial to deepen the topic and briefly analyse two other paradigms: sector specific materiality and double materiality.

Sector specific materiality can be described as the material element proper to a specific sector. In other words, it is possible to state that companies operating within the same industry tend to have analogous business models, conduct their business in the same

regulatory environment and provide similar goods and services (Eccles et al., 2012). Therefore, sector-specific guidelines on material matters would foster the ability of undertakings co-existing in the same environment to be better able to report on such items.

On the other hand, double materiality comprises two different but related perspectives. The first refers to issues indicating actual or potential significant repercussions on stakeholders (impact materiality) while the second one incorporates all the ESG risks and opportunities that may affect the undertakings' development, position and performance over time and consequently impact value creation (financial materiality) (EFRAG, 2021).

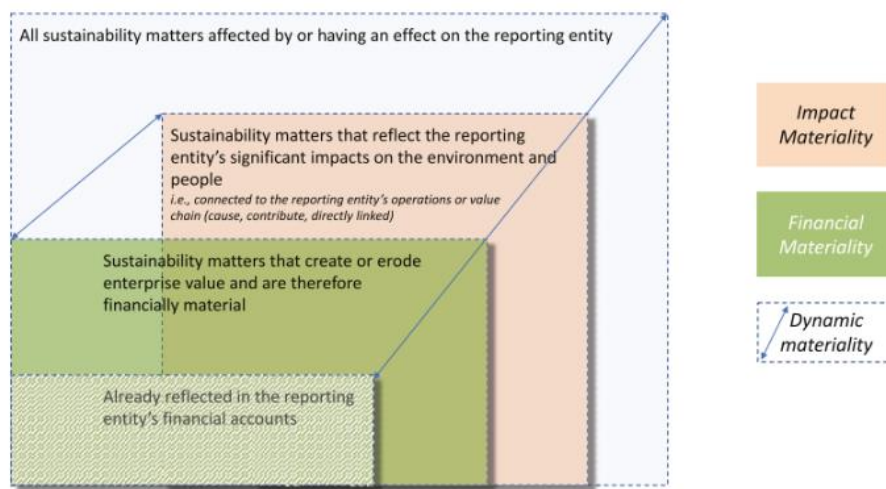


Figure 2 – Double materiality concept (EFRAG, 2021)

As previously mentioned, there is no common ESG disclosure policy either at the national or supranational level. However, many private and public entities are collaborating to achieve such objective. In the absence of a common action, it is possible to notice the wide variety of frameworks existing to allow companies to disclose ESG data.

Carbon Disclosure Project (CDP). The CDP is a survey-based reporting aimed at disclosing information regarding the company's risks and opportunities related to climate change, water security and deforestation.

Task Force on Climate-related Financial Disclosures (TCFD). The task force created by the Financial Stability Board, is composed by 31 members, and provides suggestions on the information businesses should publish as to provide valuable information to investors and lenders.

United Nations Global Compact (UNGC). The UNGC defines itself as the “world’s largest corporate sustainability initiative” based on 10 principles on anti-corruption, labour practices, human rights, and environmental measures. Corporations aligning to the UNGC file yearly a Communication on Progress (CoP) assessing their level of compliance to the principles.

Workforce Disclosure Initiative (WDI). The WDI offers a platform for detailing information concerning workforce practices and management. It is modelled on the CDP reporting system.

Global Reporting Initiative Standards (GRI). The GRI is the most widely used framework for NFI disclosure (Eccles et al., 2011). It comprises a standard framework including general, sector-specific, and topic-based sustainability standards allowing firms to effectively provide NFI to investors, governments, and other external stakeholders. Currently, the GRI is the only framework applicable by firms of any size, sector and location (Eccles et al., 2011) dealing with the accountability for companies’ influence on the environment, society and the economy (Adams, 2022).

Given the wide variety of ESG reports it is possible to deduct that one of the main issues about ESG disclosure concerns the lack of standardisation in measurements and publishing of NFI. Consequently, comparability issues rise as stakeholders are not able to compare companies with different reporting frameworks.

To overcome this issue, the International Sustainability Standard Board (ISSB) was established in 2021. The ISSB relies on existing reporting models, including the CDP and the TCFD, as well as collaborating with the GRI in order to create an exhaustive global baseline of sustainability disclosures centred on both stakeholders’ and markets’ needs.

In the same year at the European level, the European Financial Reporting Advisory Group (EFRAG) was instructed to develop a first draft European Sustainability Reporting Standards (ESRS). The objective of the ESRS will be to define the comprehensive disclosure obligations under the CSRD that will be enforced starting from 2025 for financial year 2024.

Both the ISSB and the EFRAG are currently working to harmonize and create common standards understandable and applicable by all types of companies, regardless of their

size and location. Once this crucial step completed, stakeholders will be given the possibility to compare and understand data originating from different companies, grasping the nuances existing within their industry as well as being able to better analyse opportunities and challenges related to the business of tomorrow.

CHAPTER 2

2.1. SMEs challenges in ESG implementation

Small and medium-sized enterprises (SMEs) have been defined by the European Union as companies employing less than 250 people. Additionally, the EU identifies three subcategories within businesses considered as SMEs. These include:

- Micro enterprises, employing less than 10 people and having an annual turnover and balance sheet of less than 2 million euros.
- Small enterprises, employing less than 50 people and having an annual turnover and balance sheet below 10 million euros.
- Medium enterprises, employing less than 250 people and having an annual turnover of less than 50 million euros and balance sheet below 43 million euros (European Parliament, 2023a).

The European Union accounts for over 23 million micro, small and medium enterprises (SMEs) constituting about 99% of all the companies operating in the EU. This wide network of businesses provides for two thirds of all the private sectors jobs (about 100 million individuals) as well as generating more than half of the total added value created by companies in the EU (European Parliament, 2023b), thus being the key driver of the European economy.

From this, it is possible to assert that the role of SMEs within the European area is crucial for the achievement of the 2030 Agenda. Studies have shown that SMEs are responsible of up to 70% of the worldwide pollution (Hillary, 2000) and that environmental and social matters are becoming central topics for SMEs as well (Revell et al., 2010). However, given their unique characteristics SMEs tend to face greater challenges in the implementation of ESG practices if compared to larger firms.

In the recent years, scholars (Gholami et al., 2022; Gjergji et al., 2021; Gomes dos Santos et al., 2022; Johnson & Schaltegger, 2016; Caldera et al., 2019; Shalhoob & Hussainey, 2023) deepened the academic knowledge with respect to SMEs environment and their commitment to sustainability. They found out that the path toward sustainability is not as easy as it may seem, especially for SMEs as they encounter several challenges larger firms do not have to deal with along the way.

The present paragraph continues by discussing the barriers and challenges SMEs face when deciding to introduce ESG practises. For clarity, a summary table disclosing both the internal shortcomings and the external deficiencies as well as the respective academic references discussing each element have been adjoined in the following section.

<i>Internal shortcomings</i>	<i>Academic references</i>
<ul style="list-style-type: none"> • Lack of awareness in sustainability issues 	Johnson & Schaltegger, 2016; Seidel et al., 2009; Revell & Blackburn, 2007; Lawrence et al., 2006; Gerstenfeld & Roberts, 2000
<ul style="list-style-type: none"> • Lack of knowledge and expertise 	Burke & Gaughran, 2007; Gjergji et al., 2021; Johnson & Schaltegger, 2016; Shalhoob & Hussainey, 2023; Boeske & Murray, 2022; Tilley, 1999; Seidel et al., 2009; Steinhöfel et al., 2019; Rodrigues, 2003; Hitchens et al., 2004.
<ul style="list-style-type: none"> • Absence of perceived benefits 	Johnson & Schaltegger, 2016; Chen et al., 2021; Gholami et al., 2022; Biondi & Iraldo, 2002; Zorpas, 2010; Seidel et al., 2009.
<ul style="list-style-type: none"> • Lack of financial resources 	Drempetic et al., 2020; Johnson & Schaltegger, 2016; Caldera et al., 2019; Seidel et al., 2009; Cheng et al., 2016; Giannarakis et al., 2016; Gomes dos Santos et al., 2022; Chen et al., 2021.
<ul style="list-style-type: none"> • Leak of proprietary information 	Healy & Palepu, 2001; Prencipe, 2004; Torugsa et al., 2012; Gjergji et al., 2021.

Table 1. Internal shortcomings for ESG implementation in SMEs

<u>External deficiencies</u>	<u>Academic references</u>
<ul style="list-style-type: none"> • Insufficient external drivers and incentives 	Gerstenfeld & Roberts, 2000; Hillary, 2004; Seidel et al., 2009; Biondi & Iraldo, 2002; Johnson & Schaltegger, 2016; Lokuwaduge & Heenetigala, 2017; Venturelli et al., 2019b; Ortiz-de-Mandojana et al., 2014.
<ul style="list-style-type: none"> • Unsuitability of formal management tools in informal SME structures 	Johnson & Schaltegger, 2016; Tilley, 2002.
<ul style="list-style-type: none"> • Complexity of internationally designed standards and instruments for locally focused SMEs 	Johnson & Schaltegger, 2016; Perrini & Tencati, 2006
<ul style="list-style-type: none"> • Heterogeneity in the SMEs sector 	Johnson & Schaltegger, 2016

Table 2. External deficiencies for ESG implementation in SMEs

The main barriers explaining the reasons SMEs reticence in adopting ESG can be categorised into “*internal shortcomings*” and “*external deficiencies*” (Johnson & Schaltegger, 2016). Within the internal shortcomings it is possible to identify the following: lack of awareness in sustainability issues, absence of perceived benefits, lack of knowledge and expertise, lack of human and financial resources, leak of proprietary information.

Lack of awareness in sustainability issues. Most often SMEs’ owners-managers have little knowledge or are completely aware of the impact of their business’ activity on both the environment and the society (Johnson & Schaltegger, 2016; Seidel et al., 2009). Moreover, usually SMEs do not undertake any action in order to improve their footprint. This because, generally, SMEs perceive themselves as immune to the sustainability issues (Revell & Blackburn, 2007) and consider their burden on the environment and society as minimal, given their small size compared to the whole economy (Lawrence et al., 2006; Gerstenfeld & Roberts, 2000). However, when accounting for the aggregate impact of all SMEs, such

behaviour goes against the sustainable development principle given that, as mentioned earlier in this paragraph, SMEs have a greater impact on the European economy if compared to larger firms.

Lack of knowledge and expertise. SMEs employees are usually responsible for different tasks across the organisation, limiting the time available for ESG specific training within the business (Burke & Gaughran, 2007). Given the amount of technical knowledge ESG disclosure requires also in terms of advertising skills, organisational planning, and exceptional managerial competencies, SMEs may find themselves in a disadvantaged position compared to larger undertakings (Gjergji et al., 2021). Additionally, SMEs' owners-managers have little awareness of their impacts on the environment and society (Johnson & Schaltegger, 2016; Shalhoob & Hussainey, 2023; Boeske & Murray, 2022) as well as understanding the relationship existing behind the business, the environment and the society (Tilley, 1999). However, oftentimes, even if they realise the effect of their activities and the benefits they could obtain by embedding ESG practices, they lack the knowledge to address these issues (Seidel et al., 2009). This represents a considerable concern as SMEs' owners-managers are at the origin of the majority of the business' strategic decisions. Consequently, when the lack of knowledge with respect to environmental and social concerns exists, owners-managers are unlikely to implement initiatives aiming at improving the undertakings' ESG performance also considering the difficulty in obtaining ESG accurate information for SMEs (Steinhöfel et al, 2019). Another element worth considering is the lack of awareness with respect to environmental and social tendencies. However, despite the huge amount of information and sources SMEs have access to in terms of exposure to market influences, opportunities, and threats (Rodrigues, 2003), they struggle to effectively adapt to the existing trends and use this unvaluable information to respond to their network's pressures (Hitchens et al, 2004).

Absence of perceived benefits. Given their little knowledge in terms of environmental and social impacts, SMEs' owners-managers do not realise the financial and non-financial advantages ESG can bring to the business (Johnson & Schaltegger, 2016). Moreover, the benefits arising from ESG investments within the business are not immediate, they become visible after some time (Chen et al.,

2021; Gholami et al., 2022), discouraging SMEs from investing in such activities, given their short-term sight resulting from their limited resources (Biondi & Iraldo, 2002). Nevertheless, nowadays more and more programs and opportunities exist to support SMEs addressing their environmental and social concerns (Zorpas, 2010). Finally, some SMEs are worried about the potential conflict that could originate from the adoption of ESG practices with respect to existing performance objectives (Seidel et al., 2009).

Lack of financial resources. The reduced amount of resources is the main cause of the little implementation of ESG among SMEs (Drempetic et al., 2020; Johnson & Schaltegger, 2016; Gomes dos Santos et al., 2022; Caldera et al., 2019) as well as the lack of adaptation to changing environmental trends from SMEs (Seidel et al., 2009). Larger undertakings dispose of higher liquidity compared to SMEs allowing them to easily invest in ESG initiatives, to take more social responsibility, build a stronger brand (Chen et al., 2021) as well as financing the collection of data (Cheng et al., 2016) and ESG performance disclosure (Giannarakis et al., 2016). To provide an example, SMEs do not have the same means of large undertakings in terms of automated accounting systems and accounting expertise for the record of NFI. Moreover, studies have shown that compliance to NFI disclosures may be costly, especially for SMEs (Gomes dos Santos et al., 2022). This means that whenever a SME commits to ESG, the respective costs tend to increase while profits diminish, thus reducing shareholder value (Chen et al., 2021).

Leak of proprietary information. As discussed earlier, ESG disclosure for SMEs comes at a cost. However, the costs to be incurred by SMEs when deciding to publish NFI can be of two forms: direct and indirect. Direct costs include those concerning the collection and the preparation of data while the indirect ones comprehend the potential loss of competitive advantage due to the exposure of important proprietary information to competitors (Healy & Palepu, 2001; Prencipe, 2004). Consequently, ESG disclosure might reduce SMEs competitive advantage given the lower diversification of SMEs within the market and their focus on market niches (Torugsa et al., 2012; Gjergji et al., 2021).

On the other hand, among the external deficiencies it is possible to observe the insufficient external drivers and incentives, the unsuitability of exiting management tools

within SMEs structures, the complexity of internationally designed standards and the heterogeneity of SMEs.

Insufficient external drivers and incentives. Both governmental and market forces are seen as preeminent deterrents for SMEs considering engaging in ESG practices (Gerstenfeld & Roberts, 2000; Hillary, 2004; Seidel et al., 2009; Biondi & Iraldo, 2002). Until recently, the little regulatory demands in terms of sustainability disclosure for SMEs as well as the low pressures from customers made SMEs believe ESG are not worth pursuing (Johnson & Schaltegger, 2016). Studies have demonstrated that reporting regulations and compliance guidelines highly influence the ESG reporting motives (Lokuwaduge & Heenetigala, 2017). The presence of regulation regardless of promoting standardisation processes among entities, fosters the number of sustainability report disclosed (Venturelli et al., 2019b). Consequently, firms facing greater regulatory and legislative pressures are more likely to engage in sustainable practices (Ortiz-de-Mandojana et al., 2014). Nonetheless, it is necessary to highlight that SMEs might not have the necessary resources and capabilities to comply with the existent legislation.

Unsuitability of formal management tools in informal SME structures. It can be inferred that large firms and SMEs represent the two sides of a coin with separate, distinct, and sometimes opposites traits. The existing ESG disclosure models are framed based on the data collection capacity and standardized structures typical of large firms (Tilley, 2002). This condition discourages SMEs to undertake the sustainability path as these models follow rigid and standardized structures which are often not applicable to the flexible and the dynamic business model of SMEs (Tilley, 2002). Moreover, ESG performance measures favour qualitative over financial measures, making it harder for SMEs to gather relevant data and resulting in increased costs, originating from the lack of specialised expertise necessary to evaluate and report on ESG metrics (Johnson & Schaltegger, 2016).

Complexity of internationally designed standards and instruments for locally focused SMEs. As anticipated in the previous section, most social and environmental standards are conceived as to address global circumstances since they originated from the necessities of large companies (Perrini & Tencati, 2006) making it difficult for SMEs to collect and disclose data using the existing frameworks.

Further, the operational area of SMEs usually focuses on local communities and environment (Johnson & Schaltegger, 2016) while large companies often operate in a more globalised context posing an additional obstacle to SMEs wanting to engage in ESG disclosure.

Heterogeneity in the SMEs sector. The interest in SMEs' NFI disclosure rose in the last years contributing to the need of creating management tools tailored to SMEs and their specific characteristics. However, their heterogeneity in terms of customer, business model and organisational structure makes it complicated to disclose comparable data among conceptually different SMEs.

As mentioned in the previous chapter, small firms differ from larger ones in their organisational structure, management style and characteristics of the owner-manager (Tilley, 2002). Therefore, in order to drive SMEs towards sustainability reporting, and considering the existing challenges, a few steps should be undertaken. One way to achieve this objective is to implement facilitating tools enabling ESG processes implementation within SMEs. These devices should be easy to use and user-friendly with the presence of unequivocal guidelines for their setting and support, practical and cost-effective so that compliance would not be excessively expensive (Gomes dos Santos et al., 2022). Moreover, these tools should be flexible enough to be able to consider the informal business characteristics of SMEs as well as being company tailored so to address the barriers and specific situation of each individual business. Finally, they should be network oriented so to give SMEs the possibility to deepen and share their knowledge among peers (Johnson & Schaltegger, 2016; Seidel et al., 2009). In this context, knowledge networks are concretely relevant as they facilitate the creation of social capital, formal and informal collaboration thanks to the relationships formed among SMEs as well as mitigating the effect of the barriers above mentioned on SMEs (Singh & Pillai, 2022).

2.2. ESG as a competitive advantage in SMEs

After analysing both the internal shortcomings and external deficiencies in terms of ESG SMEs data collection and disclosure, it is possible to better comprehend the reasons explaining the poor ESG disclosure rate and the low implementation of sustainability management tools. Although SMEs most often fail to realise the benefits, they could enjoy

by implementing sustainability practices, ESG practices present also opportunities allowing SMEs to differentiate within the vast European market. For the purpose of this thesis, the opportunities arising from ESG disclosure in SMEs will be divided into two categories: financial and non-financial opportunities. The decrease in cost of debt, the presence of tax incentives and other government subsidies, long-term cost savings, ESG risk mitigation as well as market expansion are among the financial opportunities available to SMEs undertaking the sustainability path.

Decrease in cost of debt. Studies have demonstrated that corporate sustainability guidelines can play a crucial role in decreasing the cost of capital (Clark et al., 2015; Attig et al., 2013). This because financing entities (e.g., banks) impose different typologies of internal controls on SMEs in order to reduce the undertakings' knowledge gap due to the informational asymmetries existing between the two parties. Consequently, sustainability disclosures provide valuable information to banks and other financing stakeholders allowing SMEs to benefit from lower interest rates, originating from the increased transparency and the risk mitigation capacity of ESG reporting (Kotsantonis et al., 2016; La Rosa et al., 2018; Dunne & McBrayer, 2019; Kim & Li, 2021; Singh & Pillai, 2022). Some research demonstrates that it exists a negative correlation between sustainable performance and financial risk (Orlitzky & Benjamin, 2001) meaning that companies with regular high rating for their voluntary ESG disclosure, pay lower interest rates when calling for debt (Mazumdar & Sengupta, 2005) and that the impact is more important in smaller firms (La Rosa et al., 2018). On the other hand, Gigante and Manglaviti (2022) report no statistically significant and positive effect in terms of cost of debt for firms with an outstanding ESG performance. Therefore, SMEs could decrease their overall spending and improve their financial position by decreasing the cost of debt through ESG disclosure. Further, SMEs with less complete and transparent ESG reporting will endure highest interest rates on debt financing due to higher uncertainty. For these reasons, it is possible to assess that not only publishing an ESG report, but also the quality of the latter impacts the creditworthiness of SMEs as part of their financial performance (Weber et al., 2010; Kim & Li, 2021). In this respect, disclosure quality is represented as a fundamental factor in closing the information asymmetries between owners-

managers as these stakeholders are interested in both qualitative and quantitative data (Venturelli et al., 2019b).

Tax incentives and other government subsidies. As anticipated in the previous sections, ESG regulation is currently expanding, fostering both municipalities and nations to comply with sustainability requirements. For this reason, in the recent years, countries have started to act by planning and initiating their own journey toward a greener future. Consequently, in order to motivate companies to follow their vision, tax incentives and subsidies have been implemented all around the five continents (La Rosa et al., 2018). Below a map disclosing countries in which any among sustainability incentives, carbon pricing regimes and other environmental taxes have been established (Figure 3). However, the approach to tax incentives and subsidies is not heterogenous among countries.

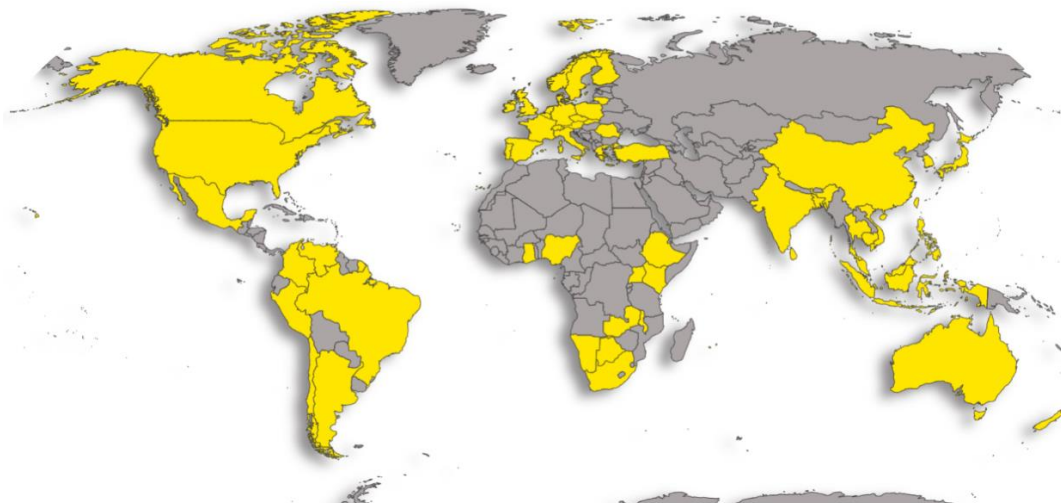


Figure 3 – Green Tax Tracker (EY, 2023)

To provide some practical examples, below the scope of environmental taxation and incentives in some countries within the European Union:

Spain. A sustainable tax system has been established but not yet implemented. It includes a national carbon tax as well as green taxes, fees, exemptions and incentives for firms and citizens.

France. A sustainability tax program exists since 1990. The French one is a behaviour-based scheme aimed at influencing the behaviour of businesses and households by imposing taxes on most polluting activities and setting exemptions for those deemed sustainable.

Italy. The country has well-defined sustainability taxes, programs, and incentives with most of the guidelines decided at the national level. Several national and local incentives are available to taxpayers.

Long-term cost savings. Within the SMEs, both medium and small enterprises realise cost advantages after implementing sustainable management practices (Brammer et al., 2011). Some of the costs savings that can be achieved through the implementation of sustainable practices include improving the energetic efficiency of the undertaking as well as committing to reduce waste disposal. Additionally, cost savings activities could also be realised by refusing to invest in activities which result in being not profitable in the long-term due to environmental and/or social constraints (Henisz et al., 2019; Mezzio et al., 2022) thus enhancing long-term firm competitiveness (Pereira et al., 2021; Kotsantonis et al., 2016). In a recent study, Henisz et al., (2019), found out that the decrease in operating expenses due to the efficient use of resources could affect up to 60% of a company's operating profit. As stakeholders, including investors, align the efficient use of resources form companies as a valid proxy for management's policies on resources allocation, cost savings could convert into increased corporate value (Kotsantonis et al., 2016).

ESG risk mitigation. Owners-managers disclosing their ESG processes can reduce the undertakings' sensitivity to future environmental, social and governance risks (Venturelli et al., 2019b; Henisz et al., 2019, Kotsantonis et al., 2016; Shalhoob & Hussainey, 2023). Consequently, it will create value for its stakeholders through the establishment of long-lasting business models (Alsayegh et al., 2020).

Market expansion. Through the implementation of ESG processes companies are able to satisfy new customers' needs as well as proposing products and services that were previously unavailable within the market (Kotsantonis, et al., 2016; Seidel et al., 2009).

Moving forward with the discussion, turning green implies also non-financial opportunities. By implementing ESG practices, SMEs can benefit from a productivity uplift due to the positive effect of sustainable practices on talent attraction, retention, and motivation (Mezzio et al., 2022; Kotsantonis et al., 2016).

Then, ESG processes and reporting is responsible of having conclusive impacts on the firms' reputation (Gholami et al., 2022), professional image (Russo & Perrini, 2010) and brand value (Kotsantonis et al., 2016). In fact, if greenwashing has a negative effect on the image of the company, transparent and reliable ESG reporting could act as a powerful branding and marketing tool (Seidel et al., 2009). This will contribute to the strengthening of the existing ties between the SME and all its stakeholders, thus increasing the trust toward the company and consequently its visibility within the competitive market (Gjergji et al., 2021) via a promotional effect (Chen et al., 2021).

In addition, the increased product offering and the more sustainable product characteristics which allowed the market expansion, are also the source of the enhanced customer loyalty (Gjergji et al., 2021). More in detail, by fostering ESG performance, SMEs are expected to attract new customers and through them expand their cash inflow derived from higher sales, thus impacting firm financial performance (Gholami et al., 2022).

Furthermore, many studies proved that the responsible behaviour of firms positively impact the financial performance of the undertaking (Gholami et al., 2022; Kim & Li, 2021; Shields & Shelleman, 2022). This because even if the efforts needed to carry out ESG activities constitute a rather high cost for SMEs which most often do not dispose of enough resources, might lead to relevant technological innovations. Thanks to the latter cost-effective improvements become available allowing to ultimately offset the initial setting costs. (Kotsantonis et al., 2016).

At this point, it is fundamental to remind that any sustainable action undertaken by any firm will result in being vane if enforced by a company with weak governance. As already discussed, within the SMEs organisational structure, most often the board of directors and the shareholders coincide, leading the agency conflict to zero. In this case the owner-manager is responsible to supervise the companies' operations, set policies, advertise the business, define an investment strategy as well as implement transparent disclosure policies. Consequently, they are also responsible for the NFI disclosure (Al Fadli et al., 2020). Therefore, NFI is extremely useful for SMEs as it is able to facilitate access to financial resources through both debt and reduced operational expenses, enabling the latter to achieve and sustain long-term competitive advantage (Gomes dos Santos et al., 2022).

All these characteristics are bound to enhance the undertaking's competitiveness and long-term performance (Gjergji et al., 2021; Rabaya & Saleh, 2022; Chen et al., 2021) thus creating a "win-win" situation for SMEs, direct and indirect stakeholders, and the overall economy. Under this perspective, ESG could cover several functions within SMEs. It could be used as a corporate performance indicator, a decision-making tool for investments and as an internal organisational practice tool (Pereira et al., 2021).

2.3. Contextualisation of SME ESG reporting

Given the weight of SMEs in the European context, it is necessary to highlight their relevance and materiality for achieving the 17 Sustainable Development Goals incorporated within the 2030 European Agenda and the common objective of attaining Sustainable Development.

As recently stakeholders' pressures regarding non-financial information (NFI) disclosure started to emerge, there has been an increasing need for measuring economic, social, and environmental performance for both large companies and SMEs. However, the Non-Financial Reporting Directive (NFRD), does not require SMEs to report on NFI. On the contrary, it encourages national legislators to refer to the NFRD when drafting the NFI requirements for the SMEs operating within their boundaries (IFAC, 2023).

As SMEs are predicted to play a key role in the realisation of the sustainability transition, decision-makers have the right to benefit from appropriate tools on which to base their decision as well as monitor their implementation (European Financial Reporting Advisory Group, 2021). Despite their relevance within the European context, SMEs have been mostly overlooked with respect to the sustainable development agenda (Morsing et al., 2009; Schaper 2002). To better understand the European Regulation and its impacts of the NFRD on SMEs, existing literature (Krawczyk, 2021; Gomes dos Santos et al., 2022; European Financial Reporting Advisory Group, 2021) focused its attention on trying to suggest solutions aimed at including SMEs within the breadth of NFRD. Some among them (European Financial Reporting Advisory Group, 2021) discussed the possibility to extend the EU Taxonomy to SMEs. However, as discussed in the previous paragraph, the Taxonomy tackles only environmental matters, neglecting the social and governance spheres.

Nonetheless, with the most recent Corporate Sustainability Reporting Directive (CSRD) listed SMEs will be included within the scope of entities being expected to disclose about NFI. Unfortunately, no research has been conducted on the topic yet. However, it is possible to forecast the impacts of the new CSRD on SMEs.

The main concern in this sense comes from the fact that within both the NFRD and the CSRD, SMEs have been considered as being “*small large businesses*” (Steinhöfel et al., 2019; Tilley, 2000) able to implement procedures and mechanisms tailored to large undertakings (Enderle, 2004). This assumption can be easily disproved by considering the attributes proper to small and medium enterprises.

SMEs are characterised by their higher degree of independence, informality, multitasking and cash-limit (Spence, 1999), while large undertakings have the tendency of being dependent from shareholders, defined by rigid structures coordinated through formalized procedures and ‘infinite’ resources (Russo & Perrini, 2010). Moreover, SMEs are highly personalised and actively managed by their owners which are most often the sole shareholder of the business, allowing them with more flexibility and rapidity in the decision-making process as well as reducing up to zero the agency-conflict typical of large enterprises (Russo & Perrini, 2010). Yet, this last aspect, allowing SMEs to be elastic in a dynamic environment, is at the basis of SMEs lacking external shareholders resources, necessary to sustain long-term growth (Vyakarnam et al., 1997) as they rely for the most part on internal funding (Lepoutre and Heene, 2006). Other aspects differentiating SMEs from large businesses consist of SMEs operating locally, exploiting their consistent relationships based on trust, legitimacy, and reputation with key stakeholders. Externally, all these characteristics result in SMEs having enhanced professional image as well as an increase in costumers' loyalty and confidence towards the business while internally they contribute to guaranteeing a sound and durable workforce and better relationship with governing and fiscal bodies. Nevertheless, SMEs lack the capability to formalise this capital through managerial tools, proved to foster long-term value creation in larger firms (Russo & Perrini, 2010).

All these traits typical of SMEs explain the low rates of implementation of sustainability reports as well as the differences within the existing reports (Johnson, 2015). Nonetheless, SMEs can benefit from implementing and disclosing NFI as the company could have the possibility to attract more customers, reduce running costs thanks to an

efficient use of resources, receive governmental subsidies, retain workforce, and optimise both investments and assets (Henisz et al, 2019) in the light of long-term ESG impacts. However, studies have shown that although frameworks supporting the methodical disclosure of NFI exist (e.g., GRI G4), they result as being too costly and complex to be implemented by SMEs for the reasons stated above, thus explaining the absence of full implementation by SMEs (Steinhöfel, 2019).

As previously mentioned, the existing Non-Financial Reporting (NFR) disclosures for SMEs present several pitfalls with comparability, relevance and reliability being the most material (Gomes dos Santos, 2022). On this matter, the EFRAG states that the objective of sustainability reporting is to provide *“relevant, faithful, comparable, and reliable information on (i) material sustainability impacts of the reporting entity on affected stakeholders (including the environment) and (ii) material sustainability risks and opportunities for its value creation, enabling users of information (i) to understand the reporting entity’s sustainability objectives, position, and performance and (ii) to inform their decision relating to their engagement with the entity”* (European Financial Reporting Advisory Group, 2021).

So far, the request from shareholders for NFI has been satisfied through voluntary compliance to different NFR standards from SMEs. However, the presence of several reporting standards raised some concerns within the academic community in terms of missed comparability. Studies were conducted and managed to disclose most of the causes related to this issue. The lack of comparability across sustainability reports is mostly due to the adoption of heterogenous NFR standards (Barker & Eccles, 2018), the lack of standardisation of reporting guidelines (Van Wensen et al., 2011), the lack of materiality and exhaustiveness of NFR (Green et al., 2019), as well as non-compliance (Boiral & Henri, 2017).

The lack of comparability is particularly relevant as not only prevents reports’ users to assess the undertaking’s non-financial performance over time but also, it creates a barrier to any intercompany analysis (Gomes dos Santos, 2022). Moreover, the existing frameworks, elaborated under the NFRD, determine minimum requirements for NFI disclosure without enforcing specific guidelines (Venturelli et al. 2019b), restraining comparability and increasing the greenwashing risk (La Torre et al., 2018; Ruiz-Blanco et al., 2021).

Concerning relevance, it is agreed that NFI is significant when it is able to impact the user's decision-making not only on the financial impact but also on its the societal and environmental consequences (Gomes dos Santos, 2022).

Moving forward to reliability, as the EFRAG declares that non-financial reports should not only be comparable but also reliable. This means that report's users should be able to take informed decisions based on the information available in the disclosure. Previous research proved that the adoption of NFR guidelines, such as the GRI indicators, is able to foster reliability (Torelli et al., 2020; Dando & Swift, 2003). However, among society NFR instruments are often perceived as social legitimisation tools rather than a source of reliable information (Cho & Patten, 2007). Moreover, an analysis conducted on the information disclosed in the existing report highlights that the content of sustainability reports is frequently fragmented and selective as to disclose only the measures able to foster the image and reputation of the undertaking (Green et al., 2019). In addition to the 'cherry picking' of the measures to be published, SMEs deciding to comply with NFR standards may be tempted to implement boilerplate disclosures as an approach to avoid proper disclosure as well as to create more valuable impression of their non-financial performance (Christensen, 2021). In this context, boilerplate disclosures are identified as mostly qualitative and generic disclosures which remain vague and that do not provide any information (Christensen, 2021). With respect to the boilerplate language, Hans Hoogervorst identified it as the main consideration for standard setters as well as stating that the use of boilerplate language might provide an opportunity to hide information thus making the report less informative (Hoogervorst, 2013). The Financial Accounting Standard Board (FASB) as well identified the boilerplate as a major concern in the context of public disclosures (FASB, 2012).

To overcome these matters some type of institutionalised processes for collecting and disclosing NFI should be envisaged. About future standards, the EFRAG states that "*there is a need [...] to consider the particular situation of SMEs to: (i) address the fact that SMEs represent the vast majority of the EU enterprises; (ii) facilitate the SMEs' disclosure of sustainability information towards their stakeholders in an efficient manner, contrary to today's rather unregulated, and thus heterogeneous information requirements from SMEs' stakeholders or counterparts; and (iii) contribute to better management of the sustainable transitions by SME leadership*" (European Financial Reporting Advisory Group, 2021).

In this sense, the creation of common reporting standards (Gomes dos Santos, 2022) as currently being conceived by both the ISSB and EFRAG results as an acceptable option. This will be true only if the guidelines will be able to reconcile the intrinsic characteristics of SMEs and large firms with stakeholders' expectations in an effective way as to limit asymmetric information and guarantee the equity among firms for the collection and disclosure of NFI.

At this point, given the complexity of the issue, some argued the best solution might be to create reporting standards specifically tailored to SMEs characteristics (Singh & Pillai, 2022; Johnson & Schaltegger, 2016; Shields & Shelleman, 2020). To facilitate the implementation of NFR practices among SMEs NFR tools should be user-friendly and practical with clear-cut guidelines for its utilisation and maintenance, cost-effective and flexible so to be able to adjust to the constraints typical of SMEs. Moreover, these procedures should be tailored to the circumstances and network of each company, its local ecosystems, and communities (Johnson & Schaltegger, 2016; Shields & Shelleman, 2020). By developing effective tools for the measurement and disclosure of ESG performance will help SMEs to estimate the strengths of their business models as well as highlighting areas of improvement to achieve the business' end results. Moreover, by disclosing NFI, SMEs will decrease the level of informational asymmetry towards external stakeholders, thus fostering the chances to access to external financing (Singh & Pillai, 2022).

CHAPTER 3

3.1. From Small and Medium Enterprises to Start-Ups: differences and similarities

As discussed in the previous chapter, small and medium enterprises (SMEs) can be categorised based on predetermined variables such as the value of the balance-sheet, turnover, and number of employees. However, concerning Start-Ups (SUs), scholars do not agree on a single definition. Contemporary literature defines start-ups as “*a human institution designed to create new products and services under conditions of extreme uncertainty*” (Ries, 2011), “*a type of company with a high level of projection of growth due to the intensive use of the technology in its construction and development, whose main objective is to innovate in products or services for its clients*” (Hernandez & Gonzalez, 2017), or as enterprises being “*established for no more than 60 months as well as having as an object social and prevalent innovative products and/or services with high technological value*” (Paoloni & Modaffari, 2018). Lastly, the European Startup Monitor defines SUs as being characterised by being established for less than 10 years and bringing innovative technologies and/or disruptive business models (European Startup Monitor, 2015) to the market.

Considering the wide heterogeneity of existing definitions, Ehsan (2021) conducted a critical analysis over the definition of SUs and was able to identify four overlapping constants, namely: age of incorporation, growth, risk and innovation. According to the research, the key differentiating elements between SMEs and SUs are represented by the age of incorporation and innovation, followed by growth and risk being a consequence of continuous modernisation.

By acknowledging that all SUs are SMEs, but not all SMEs are SUs, it is possible to further appreciate the similarities and the contrasts existing between these two types of undertakings.

First, both SMEs and SUs face scarcity of resources however, SUs are also constrained by the liability of newness (Usman & Vanhaverbeke, 2017). Nonetheless, this feature enables SUs to innovate by partnering with established ventures (Rahman & Ramos, 2010) and to benefit from this innovation if compared to large companies as the SU business model results in a simpler organisational structure and adaptability to an unstable business environment (Parida et al., 2012).

Then, the lifecycle of a SU does not align with that of a SME, characterised by the Initiation – Growth – Maturity - Decline/Rejuvenation steps.

It is important to highlight that academics as well as business practitioners do not agree on a single representation of SU life cycle. However, by considering the different contributions (Salamzadeh & Kesim, 2015; European Startup Monitor, 2015; Churchill & Lewis, 1983) it is possible to draft a comprehensive design of SU life cycle (see figure 4).

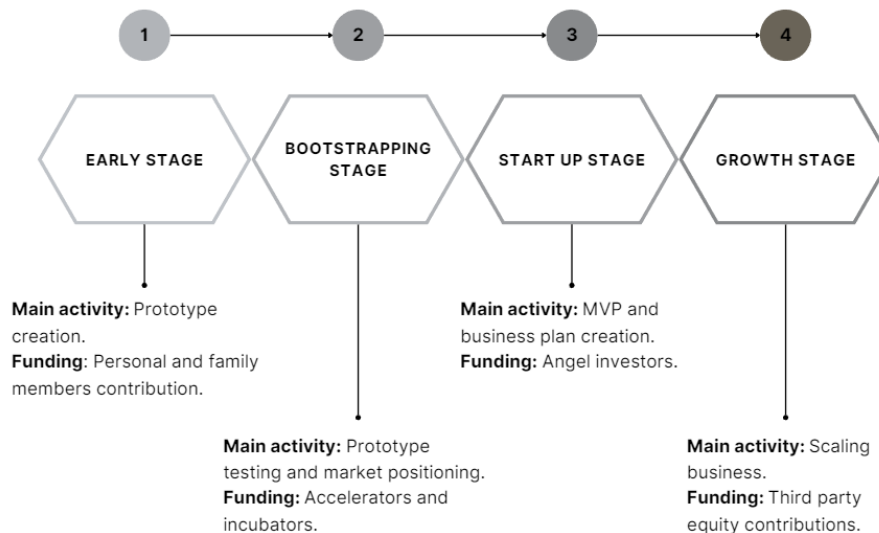


Figure 4 – Start Up lifecycle

Early stage. The SU founder has an innovative business idea and tests the feasibility of this new business. At this step the founder is actively engaged in the creation of a prototype embodying the core features of the new product. Additionally, the SU founder should define key business partners, suppliers, and competitors. During the Early stage, the level of investment is generally low as the business has not generated any revenue yet. For this reason, and in order to finance its venture, the founder will contribute its own funds to the business as well as requesting additional funding from family members and friends.

Bootstrapping stage. The founder(s) elaborated the prototype and tests its usability among early users which will provide feedback for future upgrades. The purpose of this stage is to position the entity within the market as well as disclosing its potential for growth through cash flow management, product feasibility and customer acceptance. To finance these activities, SUs might seek support from accelerators and incubators to accelerate the whole process.

Start Up stage. As the business approaches the Start Up stage, it identified the level of feasibility of the idea and the ability of the business model to satisfy the market needs. At this point, the founder focuses on implementing the feedback received during the Bootstrapping stage and creates both the Minimum Viable Product (MVP) and a viable business plan. This stage is critical as many SUs tend to fail due to lack of effective support. Nonetheless, it is at this stage that Angel investors are more likely to invest.

Growth stage. Here, the SU has finally turned into an efficient and profitable business. It hired employees, achieved product validation from customers and gained market share. Business activities aim at scaling processes, systems and operations as to grow and earn a premium. At this stage, given the amount of resources needed to scale up, external contributions are necessary. These may take the form of equity contribution from external parties or most commonly, the full exit of the founder.

SUs, because of their nature, are exposed to some risks hindering the chances of survival of the undertaking. Regardless of the challenges characterising SMEs, SUs have additional difficulties in several areas, namely finance, support mechanisms, environment (Salamzadeh & Kesim, 2015), human capital, technology and implementation (Karaarslan & Soylu, 2023).

As discussed, financing plays an important role in the SU process as in order to become viable and initiate their journey SUs require economic support. SUs tend to face different financial challenges at each stage of their life, such as the need of funds to create the prototype at the early stage (Hellman & Puri, 2002) or to test the MVP at the growth stage (Salamzadeh & Kesim, 2015). To this extent, support mechanisms provide guidance and smooth the path toward success. These are mostly composed by:

Incubators. Business innovators' objective is to support entrepreneurs in growing their SU. They do so by providing trainings to entrepreneurs, space to fund the business as well as linking founders with potential investors. Additionally, incubators may connect entrepreneurs to potentially key stakeholders through the organisation of networking events, by facilitating the development of the SU's

marketing strategy, and assisting the business in accessing private capitals (Lesakova, 2012).

Accelerators. Accelerators are “fixed-term, cohort-based programs” including instructional and encouraging elements in addition to training, and “culminate in a public pitch event or a demo day” in which entrepreneurs have the chance to pitch their idea in front of potential investors (Cohen & Hochberg, 2014). Nowadays, accelerators are considered as a mutation of incubators (Wise & Valliere, 2014), given the wide range of opportunities for peer learning and review, providing entrepreneurs with the possibility to network and obtain referrals (Mansoori et al., 2019).

Angel investors. Angel investors or business angels are single individuals contributing their capital to SUs between the early and start-up stage in order to increase their own net worth (Sohl, 2021). Angels are the main source of capital for SUs for entrepreneurs during the early stage of investment round. Given their early entry in the business, they have major influence on the strategic direction of the newly formed SU (Sohl, 2018; 2019). At the same time, they bear the highest level of uncertainty and least amount of information which contributes to the high risk attached to early-stage investing (Sohl, 2021). Moreover, together with venture capitalists they represent an example of private equity investors.

Venture capitalists (VCs). VCs are fund managers investing the limited partners (LPs) resources in companies depending not only on the capital availability, but also on the age of the fund itself as well as other fund-related considerations (Sohl, 2021). From being private equity investors, their activities are considered as being high-risk, and consequently highly rewarding (Hellmann & Thiele, 2015). However, differently from business angels, VCs contribute their resources at a later stage during the investment round.

Without the support of these entities, the journey to success becomes harder. Moreover, how it was possible to hypothesise during the discussion, the founder plays a crucial role during the whole process with greatest relevance during the early stage (Karaarslan & Soyulu, 2023) in which the venture is entirely dependent from the entrepreneur. This because experienced founders, meaning the ones who already had the possibility to lead

SUs in the past, have a well-developed network of contacts, have the knowledge to guide SUs through all their stages, thus enhancing their final performance (Hsu, 2007). This explains why the experience of venture founders is one of the fundamental aspects influencing VCs in their funding decisions (Colombo & Grilli, 2009). Nonetheless, it is necessary to mention that the degree of dependency of the SU with respect to its founder may also represent a considerable risk factor as the business exit of the latter might result in the venture collapse (Karaarslan & Soylu, 2023).

The challenges SUs have to face originate from both their internal capabilities and the external environment. In this context, the ability of SUs to react to external trends and threats is extremely important if compared with established firms (Bruton & Rubanik, 2002; Van Gelderen et al., 2005), given the instability and flexibility specific to this type of entities.

3.2. Sustainability in the Start-Up context

SUs are exposed to internal and external threats undermining their chances of survival throughout their life cycle. As SUs exist in a rather unstable environment, the potential risks affecting the business that may possibly influence the survival of a SU are associated to the founders' and employees' characteristics (human capital), the process (work timelines and internal business daily organisation), environment (social, financial and ecological), and organisation setup (expected firm size and leadership style) (Karani & Mshenga, 2021). Especially in the early stages of their life cycle, SUs are required to manage all these different dimensions in order to survive in the short-term (Sreenivasan & Suresh, 2023).

Within this context, although SUs may find difficulties in obtaining financing given their absence of credit history, revenues or securities, their agile structure allows them to be in a privileged position toward sustainability. This because SUs are able to design their business model based on sustainability principles right from their foundation, allowing them to avoid costly reorganisations later (Simpson & Brumme, 2022).

Moreover, companies, and especially SUs, that are "born green" take their time in analysing and understanding sustainability and viability before entering the market. They thoroughly consider and incorporate all the negative externalities, the legislative

costs and all the other relevant challenges in order to be able to achieve faster growth and enhanced competitiveness within their reference market. Additionally, SUs have the capability to introduce cutting-edge technologies that could decrease the overall sustainability costs (Sreenivasan & Suresh, 2023). Therefore, by integrating sustainability into their business model and operations, SU founders can set the undertaking for long-term prosperity, fostering innovation while addressing social and environmental matters.

A study conducted by the World Economic Forum in 2022 (WEF, 2022) showed that, over a sample of 45 SUs at different life stages, 68% had embedded ESG into their business strategy since their foundation (Figure 5). This allowed SUs to integrate ESG matters into the corporate strategy and decision-making processes since the beginning so that it could then scale with the firm.

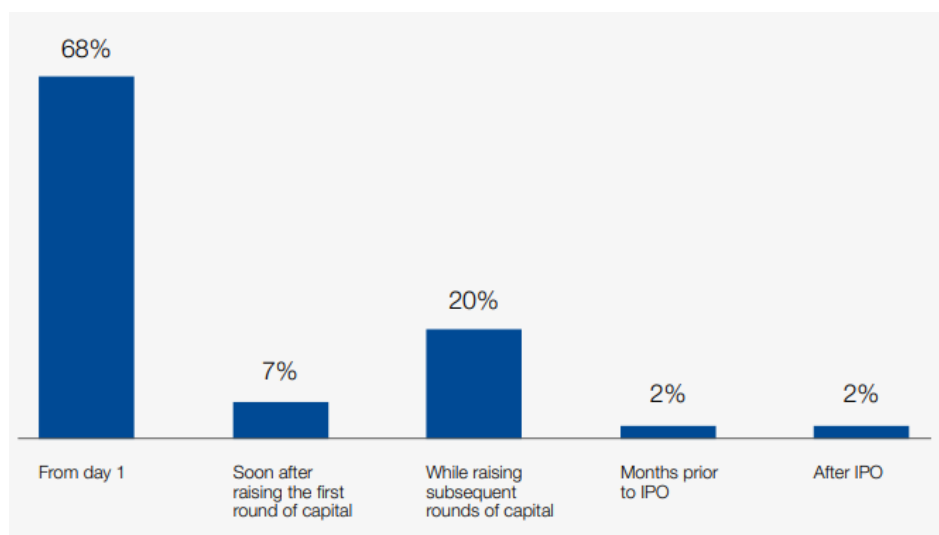


Figure 5 – Timing of ESG strategy integration (WEF, 2022)

As previously anticipated, ESG represents a powerful implementation framework able to guide decision-making. This because ESG schemes advise on how to lead the business in delivering its purpose, to assess its strategy as well as to minimise ESG material risks.

However, even though SUs play a crucial role in the sustainability arena, ESG reporting frameworks and methodologies tailored to the intrinsic characteristics of SUs remain unavailable in the market. This poses a serious problem since larger business partners might be required to report on ESG on all the business aspects, including their supply chain (Forbes, 2022). Therefore, as SUs are currently not able to reliably report on ESG,

many business opportunities could be missed or in the worst-case scenario, contracts might be terminated.

For this reason, in the following sections an analysis of the existing ESG reporting tools and methodologies for SMEs is conducted. Later, the available framework will be used as the baseline to formulate the core characteristic of an ESG disclosure scheme serving SUs.

3.3. Existing tools and methodologies for ESG evaluation

According to the CSRD, starting from 2027 all listed SMEs are required to disclose NFI for the financial year 2026. However, as of today, it does not exist a common framework for the evaluation of NFI within SMEs. Nonetheless, a wide range of tools and methodologies has been developed by private companies in order to support SMEs in understanding their impact and performance in ESG matters.

Therefore, by analysing the different existing tools it would be possible to have a comprehensive view about how NFI is considered and assessed in the light of providing further disclosure and reduce asymmetric information towards investors and stakeholders. Although this thesis focuses on the European area, some of the key interregional parties will be introduced for completeness purposes.

The table 3 below shows the results of a qualitative analysis conducted to understand the worldwide market offer in the realm of ESG evaluation tools. The tools have been studied and grouped based on several features, namely the technology on which their ESG assessment is based, whether their offer targets large firms or it includes also SMEs, whether the tool is sector-specific or it can be adjusted so to fit any industry, the ESG dimensions considered, whether after the assessment a final scoring will be issued, the maturity of the tool, evaluated by examining the relevance of their customers, their geographical area of operations, and whether they are based or certified by any official standard setting entity.

ESG evaluation tools - Market analysis								
Tool name	Technology used	Target customer	Target sector	ESG dimensions considered	Final scoring	Maturity stage	Operative area	Reference standard
B Impact Assessment (<i>B Corporation, 2023</i>)	N/A	Multi-national and large companies, SMEs	Multi-sector	E, S, G	Final score from 0 to 200 points, with 80 points needed to be certified.	Mature	Global	GRI ⁽¹⁾
Conservice ESG (<i>Conservice ESG, 2023</i>)	Cloud-based SaaS, AI-powered tool	N/A	N/A	E, S, G	No final score	N/A	North America	GRI ⁽¹⁾ , SASB ⁽²⁾ , CDP ⁽³⁾ , TCFD ⁽⁴⁾
Diligent (ex-Accuvio) (<i>Diligent, 2023</i>)	Cloud-based SaaS	Multi-national and public sector organisations	Multi-sector	E, G	No final score	Mature	Europe, Asia, Oceania, North America	GRI ⁽¹⁾ , SASB ⁽²⁾
Ecomate (<i>Ecomate, 2023</i>)	Algorithm-based	Multi-national and large companies, SMEs	Multi-sector	E, S, G	Final score from 0 to 100.	Mature	Europe	GRI ⁽¹⁾

Table 3 - ESG evaluation tools - Market analysis (Author's elaboration)

(1): Global Reporting Initiative

(2): Sustainability Accounting Standards Board

(3): Carbon Disclosure Project

(4): Taskforce on Climate-related Financial Disclosures

(5): International Organisation for Standardisation

(6): Dow Jones Sustainability Index

(7): Global Real Estate Sustainability Benchmark

ESG evaluation tools - Market analysis								
Tool name	Technology used	Target customer	Target sector	ESG dimensions considered	Final scoring	Maturity stage	Operative area	Reference standard
EcoVadis (EcoVadis, 2023a)	AI-powered tool	Multi-national and large companies, SMEs	Multi-sector	E, S, G	Final score issued through badges	Mature	Global	GRI ⁽¹⁾ , ISO 26000 ⁽⁵⁾
Emex (Emex, 2023)	Cloud-based SaaS, Microsoft Power BI platform, APIs	N/A	N/A	E, S, G	No final score	Growth	N/A	GRI ⁽¹⁾ , SASB ⁽²⁾ , CDP ⁽³⁾ , DJSI ⁽⁶⁾
ESG book (ESG book, 2023)	Cloud-based SaaS, AI-powered software	N/A	Banking and asset management	E, S, G	No final score	Mature	Europe	GRI ⁽¹⁾ , SASB ⁽²⁾ , TCFD ⁽⁴⁾
ESG Intelligence tool by PWC (PWC, 2023)	Cloud-based SaaS, Microsoft Power BI platform, ERP	Large Firms	Multi-sector	E, S, G	No final score	N/A	Europe	GRI ⁽¹⁾ , SASB ⁽²⁾

Table 3 (continued) - ESG evaluation tools - Market analysis (Author's elaboration)

(1): Global Reporting Initiative

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(5): International Organisation for Standardisation

(6): Dow Jones Sustainability Index

(7): Global Real Estate Sustainability Benchmark

ESG evaluation tools - Market analysis								
Tool name	Technology used	Target customer	Target sector	ESG dimensions considered	Final scoring	Maturity stage	Operative area	Reference standard
ESGeo (ESGeo, 2023a)	Cloud-based SaaS	Multi-national and large companies, SMEs	Multi-sector	E, S, G	No final score	Mature	Europe, North America, South America	GRI ⁽¹⁾ , SASB ⁽²⁾ , CDP ⁽³⁾ , TCFD ⁽⁴⁾ , DJSI ⁽⁶⁾ , GRESB ⁽⁷⁾
GreenOMeter (GreenOMeter, 2023)	Cloud-based SaaS, APIs	N/A	N/A	E	No final score	Growth	Europe	GRI ⁽¹⁾
Greenomy (Greenomy, 2023a)	APIs, ERP	Multi-national and large companies, SMEs	Multi-sector	G	No final score	Growth	Europe	CDP ⁽³⁾
Key ESG (Key ESG, 2023)	Cloud-based SaaS	N/A	Multi-sector	E, S, G	No final score	N/A	Europe, North America	GRI ⁽¹⁾ , CDP ⁽³⁾ , TCFD ⁽⁴⁾

Table 3 (continued) - ESG evaluation tools - Market analysis (Author's elaboration)

(1): Global Reporting Initiative

(2): Sustainability Accounting Standards Board

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(5): International Organisation for Standardisation

(6): Dow Jones Sustainability Index

(7): Global Real Estate Sustainability Benchmark

ESG evaluation tools - Market analysis								
Tool name	Technology used	Target customer	Target sector	ESG dimensions considered	Final scoring	Maturity stage	Operative area	Reference standard
Locus Technologies (Locus Technologies, 2023)	Cloud-based SaaS	Multi-national and large companies	Multi-sector	E, S, G	No final score	Mature	North America	GRI ⁽¹⁾ , DJSI ⁽⁶⁾
Measurabl (Measurabl, 2023)	APIs	N/A	Real estate	E, S, G	No final score	Mature	Europe, North America	CDP ⁽²⁾ , TCFD ⁽⁴⁾ , GRESB ⁽⁷⁾
Navex ESG (Navex ESG, 2023)	N/A	N/A	Multi-sector	G	No final score	Growth	Europe, North America	GRI ⁽¹⁾ , SASB ⁽²⁾ , TCFD ⁽⁴⁾
Novata (Novata, 2023)	N/A	Large companies	Private market	E, S, G	No final score	Growth	Europe	GRI ⁽¹⁾ , SASB ⁽²⁾ , CDP ⁽³⁾ , TCFD ⁽⁴⁾

Table 3 (continued) - ESG evaluation tools - Market analysis (Author's elaboration)

(1): Global Reporting Initiative

(2): Sustainability Accounting Standards Board

(3): Carbon Disclosure Project

(4): Taskforce on Climate-related Financial Disclosures

(5): International Organisation for Standardisation

(6): Dow Jones Sustainability Index

(7): Global Real Estate Sustainability Benchmark

ESG evaluation tools - Market analysis								
Tool name	Technology used	Target customer	Target sector	ESG dimensions considered	Final scoring	Maturity stage	Operative area	Reference standard
Onetrust (Onetrust, 2023)	AI-powered tool	N/A	Multi-sector	E, S, G	No final score	Mature	Europe, North America	GRI ⁽¹⁾ , SASB ⁽²⁾ , CDP ⁽³⁾
PlanA (PlanA, 2023)	Cloud-based SaaS	N/A	Multi-sector	E	No final score	Mature	Europe	N/A
SABI (SABI; 2023)	N/A	Multi-national and large companies, SMEs	Multi-sector	E, S, G	No final score	Growth	Europe (Italy)	GRI ⁽¹⁾
Workiva (Workiva, 2023)	APIs, ERP	N/A	Multi-sector	E, S, G	No final score	Mature	Europe, North America	GRI ⁽¹⁾ , SASB ⁽²⁾ , TCFD ⁽⁴⁾

Table 3 (continued) - ESG evaluation tools - Market analysis (Author's elaboration)

(1): Global Reporting Initiative

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The results of this study highlight the broadness of the offer under all the variables considered. From the sample analysed 75% assess the whole range of Environmental, Social and Governance matters with 30% being flexible enough to include SMEs in their scope of evaluation. 85% of the tools studied are active in Europe and rely on the European regulation for their disclosures. This is due to the fact that Europe is one of the first continents to adopt strict directives on the reporting of NFI, making it a business-friendly environment for this type of tools. Finally, only 15% of the sample proposes a final score allowing firms to quantitatively track their sustainability performance over time and among market peers.

Given the results of the study, and in order to attain the purpose of this thesis, an in-depth review of the tools tailored to SMEs is conducted.

3.3.1. B Impact Assessment

The B Impact Assessment is a digital platform currently used by 150,000 enterprises. It has been created by B Lab, US-based non-profit organisation in 2006 and has been implemented to help companies evaluate, manage, and foster positive effects on stakeholders namely the environment, customers supplier, communities, employees and shareholders (B Corporation, 2023).

The evaluation process is organised in three steps:

1. Impact Assessment. At this stage the company is asked to answer to an in-depth and comprehensive questionnaire of 250 questions spread across 5 pillars: Governance, Workers, Communities, Environment and Customers.

Governance. This section evaluates the undertaking's long-term mission, commitment toward its impact on communities and the environment, transparency, and business ethics. Additionally, this category considers the capability of the company to sustain its mission and include stakeholders in its decision-making process through the firm's organisation (B Impact Assessment, 2023a).

Workers. Here the survey measures the company's engagement in providing financial security as well as health and safety to employees. Other elements that are measured are the psychological wellness, career

development and engagement in daily activities and overall satisfaction of the workforce (B Impact Assessment, 2023a).

Communities. In this part the interaction and effects on the communities in which the undertaking conducts its business, recruits and sources from are assessed. At this stage questions about diversity, equity and inclusion, economic impact, civic commitment, charitable giving and supply chain management can be found (B Impact Assessment, 2023a).

Environment. This section determines the environmental management practices enforced by the firm as well as its impacts on air, water, climate, biodiversity and land. Here both direct impacts derived from the firm’s operation and the indirect ones rising from its supply chain and distribution channels are considered (B Impact Assessment, 2023a).

Customers. This part of the questionnaire estimates the undertaking’s stewardship of its client base through its product and service quality, data privacy and security, marketing and review channels (B Impact Assessment, 2023a).

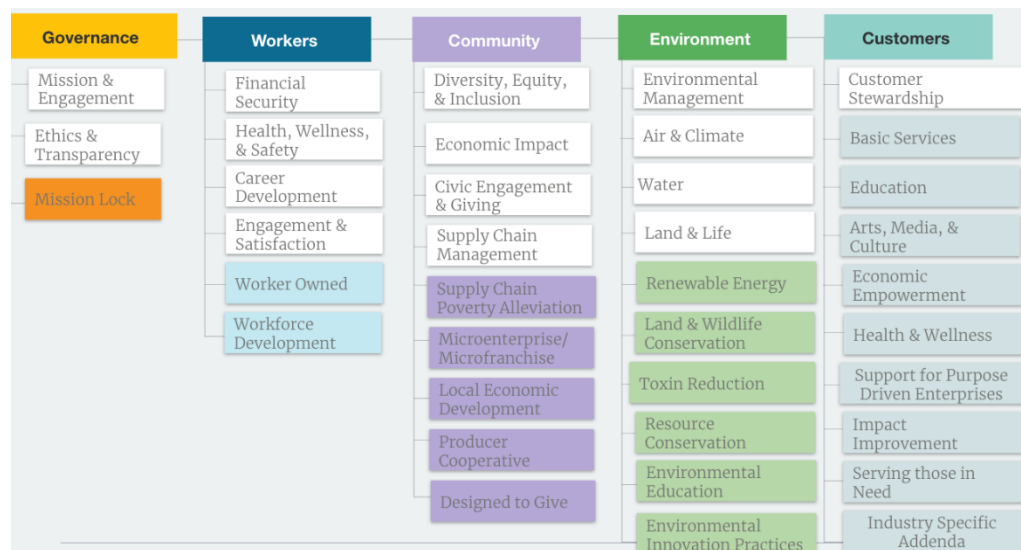


Figure 6 - The five pillars of the B Impact Assessment (B Impact Assessment, 2023a)

The questionnaire is characterised by the presence of both weighted and unweighted questions (B Corporation, 2023). Weighted questions are discerned into equally weighted, heavily weighted and less weighted questions. The weighting depends on the difficulty of the practice implementation as well as the

effectiveness of the index in determining a positive impact on stakeholders. For example, questions assessing distinct outcomes are more heavily weighted than questions about the company’s policies (B Impact Assessment, 2023b). The precise value of each pillar is determined by the company’s size, market and sector (figure 7) so to reflect different levels of materiality for the issue considered.

Track Detail Attributes	
Size	0
	1-9
	10-49
	50-249
	250-999
	1000+
Market	Emerging
	Developed - Global
	Developed
Sector	Service with Minor Environmental Footprint
	Service with Significant Environmental Footprint
	Wholesale/Retail
	Manufacturing
	Agriculture

Figure 7 – Track Detail Attributes (B Impact Assessment, 2023c)

2. Impact Analysis: After completing the survey, several typologies of reports are available to the company’s management. These are:

B Impact Assessment Performance Report. It provides companies with a comparison of their score against those of similar companies with the same size (B Impact Assessment, 2023d).

Bookmark Report. The assessment channel gives the possibility to firm’s answering the questionnaire to pause and resume later as well as temporarily abandon questions requesting further internal investigations and measurements. From this, the tool can extract the Bookmark Report

containing the list of questions the user marked as to “revisit” during the assessment process (B Impact Assessment, 2023d).

Improvement Report. This is a personalised report disclosing the questions’ weights. This characteristic not only gives the company the possibility to understand the origin of the final score but also to assess the areas on which it has to focus its attention so to achieve a better scoring in the future (B Impact Assessment, 2023d).

3. Impact Improvement: The B Impact Assessment provides a score up to 200 points. Based on the design of the questionnaire, the higher the score the more positive the undertaking’s impact on stakeholders. Additionally, the device gives the firm the possibility to compare its performance to those of other similar businesses taking the B Impact Assessment as well as consult the chronological history of all past assessments. This feature gives companies the chance to understand where they stand in terms of competitiveness on sustainability metrics within the market and to individuate areas for improvement. Moreover, to serve this purpose, the platform makes available free tools such as personalised development reports, handbooks on best practices and case studies so to support the company’s journey towards a greener future (B Corporation, 2023).

3.3.2. Strumento di Autovalutazione della Buon Impresa - SABI

SABI is an auto-assessment created by Fondazione Buon Lavoro, an Italian Foundation established in 2018. Its contents are defined based on their materiality and relevance as the topics addressed are those important for the business and its stakeholders. Moreover, the assessment is characterised by a high level of flexibility as it analyses the relevant areas, giving users the possibility to select the indicators they are able to report on, discarding the others (Buona Impresa, 2023).

The self-assessment is structured in four steps described individually below.

1. Materiality: Besides some areas on which the company is required to report on, the undertaking defines for each pillar the relevant indexes based on its size, industry, business model, and life stage. The company is expected to evaluate the relevance of each indicator, which can be slightly relevant, quite relevant, highly

relevant or non-applicable. Then, based on the answers provided by the user, the system will generate the self-assessment questionnaire (Buona Impresa, 2023).

2. Stakeholders. At this stage, a questionnaire is delivered to the related stakeholders which will be required to evaluate the company based on their own perspective. The survey can reach stakeholders in two different ways. It can either be directly transmitted by the platform or it can be downloaded by the undertaking in Microsoft Word format, modified and individually sent to stakeholders. The former option allows for periodic reminders in case the stakeholder did not file the survey as well as the possibility to monitor answers received.

This revolutionary feature allows to reduce the centrality of the self-assessment, to give voice to the parties affected by the company's activities thus fostering the assessment quality (Buona Impresa, 2023).

3. Self-Assessment. While the undertaking waits for the respondents' data, the user has the possibility to initiate the self-evaluation. This will be undertaken through a questionnaire articulated in five sections, namely Governance, Product Value Creation, Production Value Creation, Economic Value Creation, Social Sustainability and Environmental Sustainability.

Governance. This section analyses the capability of the company to adopt a long-term mission and make a binding commitment toward the latter. Further, other questions aim at evaluating if and how the undertaking is converting its commitment in applicable strategies, in a solid evaluation system and in a transparent approach to accounting and disclosure (Buona Impresa, 2023).

Value Creation through Product, Production and Economic activities. Each of these pillars is appraised through three dimensions:

- The ability to create value
- The elements contributing to value creation
- The ability to sustain value creation in the long-term

Social and Environmental Sustainability. At this stage, the company is required to evaluate all the relevant areas within the organisation and to assess its social and environmental risk management abilities based on the “Do no relevant harm” introduced by the EU Taxonomy (Buona Impresa, 2023)

Pillars	Assessment dimensions		
	Ability to create value	Value creation elements	Long-term sustainability
Provide valuable products/services to the market	Offer quality	Contribution to society	Offer sustainability
Create and organize work	Contractual commitment and welfare	Individual development and participation	Sustainability of the organizational model
Create and share economic value	Income balance	Fair distribution of the value generated	Economic sustainability

Table 4 -SABI's Assessment dimensions

4. Results. After completing the self-assessment and receiving the stakeholders' feedbacks, the indicators will be combined, and the company's results will be disclosed. The results will include an analytical valuation with graphs and tables about the value produced through Product, Production and Economic activities, a graphical representation of the technical valuation of social and environmental matters as well as a summary evaluation about governance commitments and processes. Finally, based on the results obtained, the undertaking is expected to draw its personal conclusion and to set objectives for future improvement (Buona Impresa, 2023).

The high level of personalisation of the SABI self-assessment is a key feature as if one side it allows the undertaking to decrease the leak of proprietary information, on the other it makes the device suitable also to SMEs and SUs which can adapt the assessment to their specific characteristics. Another significant feature is the possibility to reconcile the SABI self-evaluation with the GRI, increasing the international recognition of the tool.

Similar to the B Impact Assessment, the SABI self-evaluation allows to pause the test and to resume it when the missing information will be available. Moreover, it is possible to edit the numerical values input as well as add comments and notes justifying the

measurement. Therefore, the final disclosure is the result of three different and strongly interconnected elements: the information, the measurements and the comments motivating the evaluation.

However, this tool is not suited for companies taking part in initiatives benefitting the society and the environment that are implemented outside the core business activity. Although SABI acknowledges the value of such activities, it considers only the core business for its measurement purposes as it values the business capability to conduct sustainable business on its own.

3.3.3. Ecomate

This platform has been designed and implemented within the Italian context. The innovativeness of this tool lays in the fact that it is one of the few sustainable tools whose functioning is based on algorithms. Additionally, its mechanics are analysed and approved by an external committee, decentralising the structure of the entity through crowdsourcing. This feature makes it possible for technic-scientific experts (8 consulting companies and 50 experts in the ESG field) to offer their contribution to the development of the assessment and rating content, ensuring transparency and impartiality. The presence of an external technical committee as well as the possibility to receive feedbacks from end-users allows a continuous updating of the system making the score dynamic

The rating process is structured in three steps, namely input collection, output release and reporting.

Input collection. Before starting the self-assessment, companies are required to register on the platform by entering their unique VAT number. This action allows Ecomate to connect to official databases and to extract all the relevant information relating to the core characteristics of the business, without requesting the user to insert it manually thus automatising part of the process. Then, based on the data collected, Ecomate's algorithm is able to generate a personalised and tailor-made questionnaire, to define calculation matrices used to assess the ESG performance of the undertaking and to generate preliminary ESG risk factors by comparing the company to market peers. This feature is extremely important as it gives Ecomate

the possibility to evaluate large firms as well as SMEs by adapting the size and the breadth of the questionnaire to the company's specifics.

Output release. After receiving a first approximation on the company's ESG risks thanks to the algorithm, the user will be required to start the self-assessment. The latter will allow the entity to calculate its ESG performance through 11 impact modules. The survey's questions are articulated based on both European and Italian legislation, thus aligning to the main international standards available in sustainability matters.

Thanks to the presence of an extremely user-friendly control panel, the user will start the evaluation by answering questions on a module base. The topics analysed by the assessment are the following:

- Environment: Waste, Environment, Energy, and Mobility
- Society: Professional ethics, Health and safety, Social responsibility
- Governance: Transparency, Products, Economics, Innovation

Once answering more than 200 questions across over 70 sustainability issues, the user will be confronted to a dashboard disclosing the company's aggregate ESG rating as well as the individual rating for each pillar. The score ranges from 0 to 100 points and allows Ecomate to discriminate 9 risk clusters, 11 grades and 10 scoring scales as shown in figure 8 below. The rate together with the score provides the undertaking with possibility to compare its performance to market peers from the same industry and with the same size, and to understand the dimensions on which the undertaking is more/less competitive compared to the rest of the market.

In addition to the ESG score, the self-assessment results also in compliance indexes disclosing information about the level of compatibility of the company with official certifications as well as an in-depth analysis of the reference frameworks. Finally, the degree of compliance is evaluated by identifying the company's conformity to the rules, standards, and regulations associated with the topic considered.

Report. After the self-assessment is concluded, Ecomate’s algorithm generates a report for the resolution of the critical issues encountered as well as the implementation of achievable improvements (figure 9).

AAA	65-100	VERY LOW RISK	Being fully in line with the European Union 2030 strategy and even anticipating some 2050 targets, the company can not only be an ESG leader, but also looking ahead with very positive internal and external impacts among the entire ESG materiality and a very high transparency level towards the stakeholders.
AA			
A	55-64	LOW RISK	A resilient company capable of complying and reporting into different frameworks, understands how to deliver the right ESG strategy along with solid results.
BBB	45-54	MEDIUM/LOW RISK	The company has surely started a journey of sustainable development, which is opening the doors to new opportunities of growth. However, it needs to focus more for not being left behind.
BB	35-44	MEDIUM RISK	There is an initial awareness level towards sustainability issues, but the progress may be too slow. There is also a poor transparency towards the stakeholders.
B	25-34	MEDIUM/HIGH RISK	
CCC	15-24	HIGH RISK	While the company may comply with the minimum requirements of the national regulatory system, it is still vulnerable to one or more ESG negative events. These events can arise from an inability to meet compliance terms, achieve sustainability objectives, fulfill reporting obligations, or even face the risk of ESG litigation or ESG default.
CC	6-14		
C	0-5	VERY HIGH RISK	There is a very high risk of fraud and/or the company has several negative events.
D	ANY	JUNK	
E	00	NOT APPLICABLE	Not enough information in order to rate the company or the issuer has evaluated that there is no significance in initiating a process of review.

Figure 8 – Ecomate risk clusters, grades and scoring scales

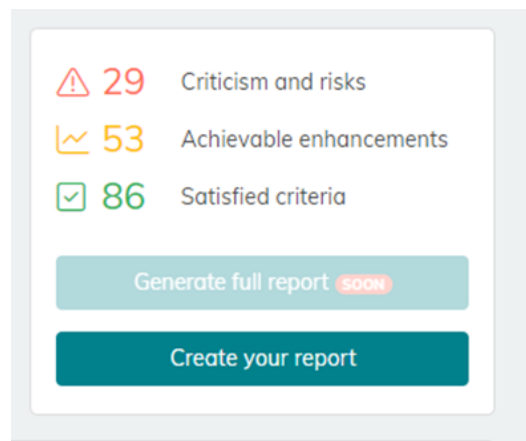


Figure 9 – Ecomate’s report overview

The final report contains about 150 solutions on different areas such as the protection from the risk of sanctions, the degree of education on the undertaking’s sustainable development of the company and the EU framework (EU Taxonomy and SFDR) as well as potential economic savings, impact of the environment and society.

Finally, based on the information contained in the report generated, the undertaking is able to identify and quantify the impact of its activities and to implement practical actions to improve the current situation.

3.3.4. ESGeo

ESGeo is an integrated cloud software based on Microsoft Azure and founded in 2019 whose objective is to support firms in framing their sustainability disclosure process, starting from the selection and verification of NFI moving through KPI valuation until the report creation. The tool has been designed so to operate along the whole value chain of the Environmental, Social and Governance metrics, providing firms with the possibility to evaluate material ESG concerns, disclose and analyse the undertaking's impacts of ESG activities. Moreover, the device allows to compare the company ESG positioning over time and among peers, to foster the management involvement in accomplishing sustainability objectives as well as enhance stakeholders' relationship (ESGeo, 2023a).

ESGeo report creation is articulated in several steps.

1. Materiality Assessment. The device guides companies in assessing and prioritising the elements which are the most relevant to both the organisation and stakeholders in order to draw the undertaking's materiality matrix.

2. Proprietary ESG scoring model. After having identified the firms' specific material topics, a survey is generated so to evaluate the Key Performance Indicators (KPIs) (table 5). The survey is fully customisable by the firm, meaning the tool is flexible and adaptable to the company's needs. These can be mapped according to their risk level, and are spread across several categories, namely: Universal, Economic, Environmental, Social, Customer and Reports (ETicaNews, 2020).

When filing the survey, by clicking on the KPI under valuation, it is possible to understand the specific metrics impacting it as well as the previous year performance. This enables to assess the current performance with respect to that of the previous year as well as identifying the undertaking's ESG performance evolution over time. Furthermore, when considering a specific KPI, the user can insert comments (e.g., to describe the risk management process) as well as attach documents and normative references to support the assessment (ETicaNews, 2020), thus fostering transparency and traceability. On this matter, the platform allows to create users with different roles and responsibilities, to assign tasks and

track their completion as well as report on the activities process with a traceable data flow.

Material KPIs		
Environmental	Social	Governance
Carbon footprint	CEO pay ratio	Incentivised pay
Energy intensity	Smart working	Data privacy
Energy mix	Employee turnover	Sustainability reporting
Water usage	Community development	Disclosure practices
Organic products	Company nests	External assurance
Recycled material use	Injury rate	Supplier code of conduct
	Social inclusion	
	Gender diversity	

Table 5 – Example ESGeo material KPIs

3. Disclosure. After completing the KPI valuation, the user is ready to initiate the disclosure process. All the outputs of the previous section can be exported as tables or pdf files and be used as support evidence for disclosure. More in detail, the device allows for a dynamic methodology, meaning that if the user decides to edit one or more metrics in the KPI valuation section, the changes will be automatically transposed in the tables or graphs existing in the report (ETicaNews, 2020). Then, thanks to the fact that all the sustainability information sits on the cloud, the user is able to produce reports instantly, improving the quality of non-financial communication to stakeholders.

To sum up, it is possible to assess that ESGeo is an intuitive platform assisting professionals in their data collection, reporting and monitoring activities (ESGeo, 2023b). It gathers information from multiple sources (including corporate documents and reports, official data, online data centres and sector specific information related to ESG risk and exposure) to provide support in identifying ESG risks and opportunities as well as evaluating the impact of these activities.

Moreover, it integrates information transparency with analytical power as well as compliance with standards such as the GRI and SASB, and regulations such as the EU Taxonomy. Finally, ESGeo is an auditable tool of data collection and workflow which can be directly accessible by suppliers and auditors (ETicaNews, 2020).

3.3.5. EcoVadis

EcoVadis is a sustainability rating device founded in 2007 in Paris (EcoVadis, 2023a). The rating process follows a predefined path, described below.

1. Risk identification. Risk identification is made possible thanks to the implementation of IQ Plus, a tool able to leverage information from sustainability databases, clients' data and a selection of sector-specific risk factors to highlight material issues (EcoVadis, 2023b). Additionally, it allows to obtain a rapid and solid audit to guide due diligence and risk mitigation (EcoVadis, 2023c).

2. Performance assessment. IQ Plus determines whether the stakeholders of a client need to be evaluated. To this purpose, those selected will fill in a questionnaire and provide evidence to support it. The questionnaire, which will be determined based on the undertakings' size, considers material ESG topics taking into account also the country-specific issues and is available in several languages. Later, the answers, as well as the documents attached, will be scrutinised by a team of analysts, fostering the reliability of the assessment. The survey will result in a score ranging from 0 to 100 point across four sustainability themes, namely Environment, Labour & Human Rights, Ethics and Sustainable procurement (EcoVadis, 2023d).

Finally, a scorecard will be made available to the client to review its own evaluation, to compare its performance to industry peers thanks to a standardized scoring and subsequently to establish the following activities (EcoVadis, 2023c).

3. Drive improvement. The scorecards mentioned in step 2 aim at guiding the business in pursuing learning opportunities enhancing resilience to ESG risks through customised "*Corrective Action Plans*" (CAP) defining priorities and timelines as well as coordinating the relationship with stakeholders (EcoVadis, 2023c). Additionally, EcoVadis enables the user to compare the undertaking's

performance over time thanks to the implementation of a quantitative metrics module, enriched with data exports (EcoVadis, 2023d).

4. Comprehensive reporting. EcoVadis presents itself with the pre-defined reports based on global standards as well as local legislations such as UNGC or the German Supply Chain Act, to provide some examples. Nonetheless, the software still allows to personalise the disclosure with tailored dashboards and independent reports for each ESG dimension (EcoVadis, 2023c).

To summarise, EcoVadis evaluates firm performance across four main sustainability themes. The assessment is elaborated considering the company's size, location and its own specific ESG risks as well as national and international standards and regulations. Nonetheless, EcoVadis distinctive feature lays in the customer support, represented by both the international analysts team reviewing the questionnaire results and the EcoVadis technical team supporting firms all along the process. Finally, the business performance is defined based on its policies, activities and results, as well as the contribution rising from external stakeholders.

3.3.6. Greenomy

Greenomy is a cloud based ESG disclosure tool founded in Belgium, supporting firms in evaluating, reporting and fostering their sustainability performance in compliance with the existing European regulatory frameworks such as the EU Taxonomy, the CSRD, and the most recent SFDR (Greenomy, 2023a).

Although the legislative compliance remains the main characteristics of Greenomy, the tool proposes also an ESG Assessment function. The assessment consists in a voluntary scheme for KPIs disclosure that can be undertaken by companies of any size regardless of them falling within the scope of the NFRD.

Greenomy's ESG Assessment starts with the identification of the undertaking's NACE classification code in order to identify whether the sector-specific activities fall within the scope of the EU Taxonomy. Then, the questionnaire is ready to take place: the user will be asked to provide qualitative and quantitative information as well as attaching supporting documents in relation to eight different areas of interest. The themes considered are emissions, energy, biodiversity, water, waste, social employee matters,

human rights, and anti-corruption and bribery. By moving across the questionnaire, the user will be confronted to the reference regulation and will understand the impact of each KPI analysed with respect to the relevant framework, for example the amount of CO2 emissions is required to assess the undertaking's compliance level to the Paris Agreement as well as the EU Taxonomy.

At the end of the survey, a report will be generated by the tool. The disclosure can be downloaded by the user in two formats, Microsoft Excel and PDF so to provide stakeholders with an easy to read and investigate file, tailored to on their needs (Greenomy, 2023b).

The portal represents a sector-specific tool based on the latest European regulation with the objective of portraying the undertaking's commitment to sustainability through compliance to regulation. In addition, Greenomy provides advisory services aimed at guiding companies towards their sustainability reporting journey, from data collection to disclosure (Greenomy, 2023a).

CHAPTER 4

4.1. Understanding the needs of Start-Ups

Before diving into the analysis of the characteristics an ESG evaluation tool tailored to SUs should possess, it is necessary to study the specific elements these undertakings search in a sustainability assessment tool, figure 10.

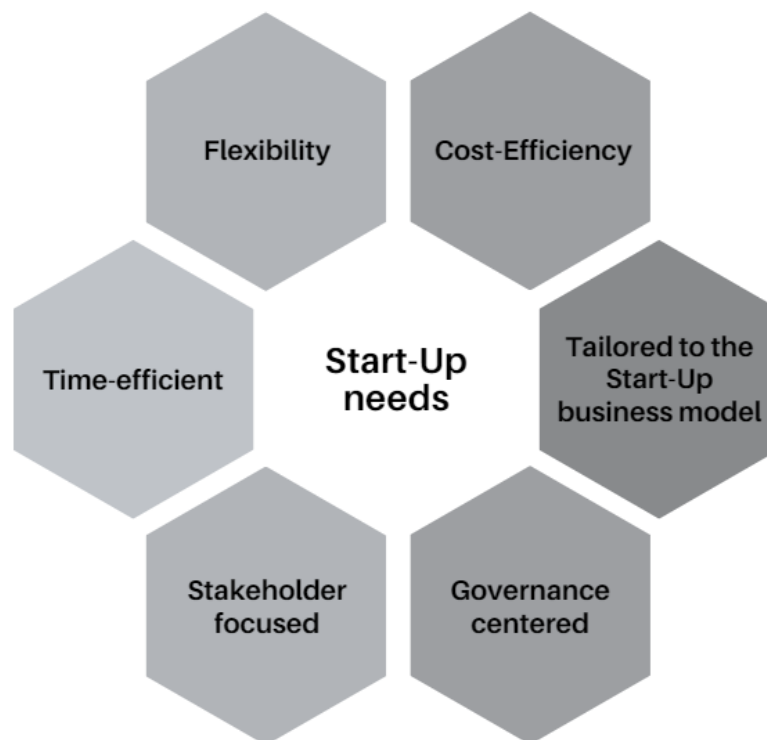


Figure 10 – Start-Up needs

First of all, as previously discussed, SUs face relevant challenges in different realms, with financing being among the most significant. The constant hunt for funding forces founders to be extremely scrupulous in terms of resource allocation as the funds will have to be invested in the business model development as well as the MVP modelling.

Another threat to the survival of SUs is represented by time. This is easily explained by the harsh competition that exists in the SU environment as many SU with similar characteristics are contemporarily trying to commercialise the next innovative product. Moreover, SUs might receive pressures to perform from their investors thus making time essential to survival. Additionally, as SUs are usually composed by a few members allocated to many jobs, time allocation can drastically impact the profitability of the

venture. For these reasons, the ideal ESG valuation tool should be available in the market at a reasonable price as well as being time saving, making it a valuable option for SUs.

Further, the analysis of the context in which SUs operate is crucial. The SU environment is characterised by a high degree of unpredictability and instability, as described earlier. Moreover, as SUs are still unaware of whether their business model is viable, and if taking into account also the meagre resources, it is understandable for SUs founders to save to the penny.

These are just few of the elements differentiating SUs from SMEs. From this, it is possible to acknowledge the strong need for an ESG evaluation tool tailored to SUs able to incorporate the specific elements of these undertakings. To achieve this objective, the whole concept of sustainability has to be re-formulated, because most of the modern SUs already embed sustainability as defined by the literature since this can strongly affect their chances of survival in the long-term.

SUs are interested in targeting and satisfying the customers' needs by tackling a problem to be solved as well as addressing social and/or environmental matters through their own value proposition. Thus, the main concern of modern SUs lays in addressing the customers' needs "in a sustainable way". On this specific point, SUs find themselves in a strongly privileged position if compared to established businesses as they have the possibility to embed sustainability within their core since their inception, thus setting the company for long-term success.

It is clear that the existing tools tailored to SMEs, addressing mostly the undertaking's level of compliance to national and international regulatory standards, do not serve SUs as the role of sustainability in the SU context is completely different from the one in the SMEs environment. More in detail, both the disclosure and reporting paradigms are not within the focus area of SUs as their interest resides in acquiring a sound understanding of their value proposition, internal processes and the level of engagement for each stakeholder category.

ESG assessment tools for SMEs have been designed so to prevalently focus on evaluating the firm's level of compliance to both national and international legislative frameworks, as previously analysed in chapter 3. This highlights the need to create a new ESG evaluation tool specific to SUs as, from their perspective, sustainability disclosure serves

as a strategic tool guiding internal investments and actions, helping the venture in identifying and addressing potential threats as well as contributing to convey their storytelling to external stakeholders.

For these reasons, by considering the specific internal organisation of SUs, the focal point for SUs' evaluation should lay in the founders' ability to manage the business in its unstable context. In these circumstances it is straight-forward to identify the core elements contributing to the effective venture management. These are namely, stakeholder engagement, the structuring of a sustainable value proposition, risk management, and environmental and social awareness.

Stakeholder engagement. Within the SUs domain, stakeholders are recognised as being one of the key elements determining the prosperity of the undertaking. How a founder manages the relationship with investors, clients, employees and business partners across all the life cycle of the SU can make the difference in defining their success.

Sustainable value proposition. After considering the human capital, the second crucial element for SUs is their value proposition. The ultimate goal of the venture is to make a positive impact on people, profit and planet through the solution offered. Therefore, it is necessary to deeply analyse the undertaking's value proposition under both the strategic and the impact perspectives so to confirm the company is built on solid foundations.

Risk management. As extensively discussed in the previous sections, SUs operate in unpredictable circumstances. Under this perspective, risk management unveils as a fundamental SUs' component as it addresses the venture's ability to react to both internal and external threats. The most common threats SU tend to face are namely, financial risk, operational risk, talent risk, reputational risk, strategic risk, and legal risk (Upfoundr, 2023).

Financial risk. It occurs when the SU is unable to effectively manage the scarce resources in its possession. Financial risk mostly rises because of inadequate cash flow management.

Operational risk. It materialises when loss of proprietary data or human errors in executing transaction procedures take place. The operational risk

is at its peak in the absence of sound internal controls, hindering the venture's daily activities.

Talent risk. As mentioned earlier, human capital can be defined as the SU's most important asset. Therefore, onboarding the right pool of human resources is vital for SUs especially during the early stage as the SU is fully dependent on the few core resources available.

Reputational risk. By considering the tight relationship that exists between the SU and its stakeholders it is possible to notice that reputation plays a key role all along the SU's lifecycle. This because, reputation can be exploited to draw investors and other market players as well as contributing to retaining and attracting employees.

Strategic risk. The SU context is delineated by the high degree of competition as well as the constant presence of market peers working to commercialise products representing a potential threat to the SU. Therefore, in order to be able to face and overcome the constant changes, SUs should implement a flexible structure and protect their disruptive innovations through the use of patents, trademarks and copyrights.

Legal risk. Failure to comply to regulations can result in fines and/or lawsuits which can erode the tight budget of SUs. Additionally, lawsuits might negatively impact the venture's reputation, thus reducing the attractiveness of the SU to potential investors.

Environmental and social awareness. From acknowledging that SUs operate in an unstable environment, it is possible to realise the importance of identifying the position of the business in this regard. More specifically, by understanding the impacts of both environmental and social changes on the business, the latter will be better equipped to face this typology of challenges.

All these elements contribute to the idea that even if SUs technically belong to the wider group of SMEs, their peculiar structure and organisation requires specific tools for their sustainability assessment. The ESG assessment tools currently available in the market present features that are suited to SMEs and completely out of scope in the SU

environment. To provide an example, it is possible to consider some of the questions belonging to one of the valuation tools discussed in the previous section.

To provide a comprehensive understanding of the questions asked to undertakings, a question from each of the E, S, and G dimensions is selected.

Question 1. *Does your company have any management certifications (process and/or quality), updated, verified by third parties and valid?*

Issue: Although most SUs embed quality, safety and environmental management actions since their inception, acquiring third-party certified attestations could present several challenges such as the cost of funding the obtention of such certificates or the time needed to fulfil all the requirements.

Question 2. *Do you possess the ISO 5001 certification relating to energy consumption management?*

Issue: Most often SUs do not possess any proprietary building or production site. Therefore, assessing their sustainability performance based on this type of environmental certification is totally worthless.

Question 3. *Do you perform any volunteering activity, donate money or other assets to non-profit organizations?*

Issue: Philanthropic activities do not constitute part of the core SU business as, at any stage of their lifecycle, SUs are characterised by the consistent lack of resources.

From the study conducted so far, it is clear that this typology of questions can hardly be answered by SUs as these reveal themselves as completely out of scope for this typology of ventures. Therefore, the need for a tailored ESG assessment tool becomes necessary to allow these undertaking to correctly focus on their non-financial performance by taking into account their defined features.

4.2 Pros and cons of current ESG evaluation tools

The tools presented in the previous chapter are characterised by a mix of features that could benefit SUs under several points of view. First of all, the information released discloses the firm's ranking with respect to its own ESG risk to unexpected disruptions

on the Environmental, Social and/or Governance dimensions. The output data allows the founder to have an in-depth analysis of the undertaking's ESG performance across time as well as with respect to market peers. This information could then be exploited by the venture to plan for future investments, aiming at reducing the firm's ESG exposure while enhancing its competitive advantage due to operational cost savings.

Additionally, SUs could exploit the rating provided by the ESG valuation tool as a strategic resource, able to attract new investors and clients. This opportunity lies in the fact that ESG ratings are provided from a third-party facility which is fully independent from the undertaking assessed. Therefore, the final rating is an objective scoring based on the interpretation of both quantitative and qualitative information which is generally evaluated by either a group of highly specialised analysts or by the cutting-edge technology implemented within the software.

From the user's perspective, companies providing ESG evaluation services represent an important business partner as they allow to quickly adopt and implement their proprietary technology which is specifically designed to be understood and used by unexperienced users. Moreover, from being digital, these tools give the possibility to their customers to assess their performance autonomously and at any time, thus enhancing accessibility. Finally, the fact of relying on an established company for its ESG assessment enables the undertaking to count on the availability of the right skills, competencies and credibility as well as a properly researched and designed tool for their specific evaluation and disclosure.

Although they present many positive aspects, some improvement points need to be discussed. To start, as anticipated earlier, modern ESG assessment tool for SMEs follow a normative-based approach implemented so to evaluate the undertaking's level of compliance to regulation and, as of today, SUs are not required to meet these disclosure obligations.

Moreover, the questions used to evaluate the firm's sustainability performance do not focus on the intrinsic specificities of SUs (e.g., organisational instability, importance of founders' characteristics, scarce resources, etc.). Additionally, even if most of the tools available grant a high degree of personalisation, allowing to fit to the company's features,

the latter can result as costly and inefficient, requiring the undertaking to opt for a trade-off between cost-efficiency and accuracy.

Furthermore, users, and especially first-time users, may find themselves in an unpleasant situation as for most data might be difficult to provide depending on the KPI considered.

Also, the study conducted emphasises how the existing ESG evaluation tools do not focus on the core business of the undertakings assessed. They have been designed to predominantly assess SMEs business activities as well as their normative compliance and do not consider the business value propositions and the socially and/or environmentally friendly solution offered to costumers.

Finally, as any reporting tool, ESG evaluation tools are characterised by their backward-looking approach as they assess the business performance with respect to activities taking place in the past and not the undertaking’s mission and vision guiding strategic decision-making.

Using ESG evaluation tools in Start-Ups	
Pros	Cons
ESG risk exposure disclosure	Compliance-based approach
Guide future investments	Not suited to SUs
ESG performance analysis over-time	Personalisation can be ineffective
Comparison of sustainability performance among market peers	Difficulty in collecting accurate data
Foster competitive advantage	Weak focus on core business
Objective scoring	Backward-looking

Table 6 – Using ESG evaluation tools: Pros & Cons

4.3. Different tools for different needs: the purpose of ESG assessment tools for SMEs and Start-Ups

After having considerably analysed the sustainability disclosure realm and the vast challenges faced by SUs, this thesis will discuss the core characteristics an ESG evaluation tool should possess in order for it to be adopted by SUs.

As this study extensively assesses, modern ESG evaluation tool tailored to SMEs are not suitable for SUs under different perspectives. Additionally, the ESG report serves different purposes in SMEs and SUs. If on one side the assessment is needed to disclose the firm's level of compliance to the legislation in force and alignment with respect to recognised national and international standards; on the other the ESG report is considered as a tool guiding the venture in identifying and defining its path to success. This because, SUs are interested in evaluating their ESG performance based on their core elements (stakeholder management, sustainable value proposition, risk management and environmental and social awareness) based on which both strategic and investment decisions will be taken. To this extent, an ESG assessment tool for SUs should operate as a guide enabling the venture to identify and exploit market opportunities as well as effectively manage both internal and external risks, allowing the latter to scale.

4.3.1. Building an ESG guide software for Start-Ups

For all the reasons stated in the previous section, the need for a revolutionary tool for ESG evaluation specifically designed to be used by SU becomes inevitable. From the analysis of the tools tailored to SMEs conducted in the previous paragraphs and by understanding the core needs and challenges SUs face in reporting on their ESG performance, it is possible to conceptualise the features of an ESG evaluation tool for SUs.

In order to describe the features an ESG assessment tool for SUs should possess a description of the "ideal tool" is performed to help the reader in visualising the tool.

The tool will be designed as a cloud-based software to allow stakeholders to access the company's NFI information at any time and from any device, fostering data accessibility and transparency. Moreover, the questionnaire that will be provided to the user to evaluate the venture's ESG performance will be modelled by algorithms generating surveys tailored to the undertakings' features.

A system of mechanised data selection will be implemented to ease the initial user's data input process. The basic information about the venture assessed (e.g., location, size, number of employees, industry, etc.) will be retrieved from existing official databases. This function will be beneficial under two different perspectives. If on one side it will foster the reliability of the assessment thanks to the support of trustworthy information, on the other it allows the user to diminish the overall assessment completion time due to the automatic input of data.

Later, the algorithm will generate the questionnaire. The final evaluation will be defined by assessing the four most relevant areas relating to corporate sustainability. These are stakeholder engagement, a sustainable value proposition, risk management and environmental and social awareness.

Stakeholder engagement. At this stage, the relationship with stakeholder such as employees, suppliers, customers, investors and business partners is considered. This section of the questionnaire will be characterised by the presence of a two-way questionnaire. If on one side the venture will be asked to assess the relationship with its key stakeholders, on the other the latter will receive a survey in which they will be required to define their level of engagement towards the business. In this way, the venture will obtain information about its business' impact as well as suggestions on how to address vital ESG issues from the stakeholder's perspective.

Sustainable value proposition. To evaluate the sustainability of the venture's value proposition, the user will be required to provide a brief description of the problem solved by the business as well as a picture of the solution offered. Moreover, the user will need to define the market opportunity behind the venture, disclose its business models and offer information about its scalability prospects. Finally, evidence with respect to the business social and/or environmental impacts produced by the undertaking's activities will be evaluated.

Risk management. The questions in this section will aim at assessing both the venture structure and governance. This because, given their specific features, SUs are exposed to many risks that may hinder their survival. Therefore, by evaluating the venture's risk management policies it will be possible to obtain relevant

information with respect to its capability to overcome unstable environments and scale in the long-term.

Environmental and social awareness. SUs, as any other business, live within a vibrant environment characterised by a tight network of players. For this reason, the venture's performance strongly depends on the existing dynamics as any change in the external environment could have an impact on the firm's operations. Thus, by evaluating the venture's social awareness the user will have an in-depth analysis regarding the firm's resilience to external changes.

The survey's questions will be weighted based on both the undertakings' business and sector materiality. In order to answer the questions, both quantitative and qualitative information will be required and a section in which to upload pertinent documentation will be introduced for each question asked. At the end of the summary a depositary folder containing all the documents uploaded, divided by reporting year, will be automatically created in a separate unit of the tool. This function will reveal itself as crucial when the regulation will require SUs to mandatorily disclose their audited sustainability performance information. More in detail, the newly created folder and the core cloud-based structure of the tool will allow for a simplified access to the documentation verification from external auditors conducting tests to verify the accuracy of the venture's sustainability report.

After receiving all stakeholders' feedbacks and having answered all the survey's questions, a team of experts in ESG matters will review the assessment to ensure consistency all across the answers and official documents attached, thus increasing the reliability of the data.

At the end of the evaluation, a report will be originated by the software in several languages. The report will be a dynamic document, able to adjust after any change in the questionnaire. Moreover, an editable version of the report will be made available to provide the user with the possibility to foster disclosure by adding text explaining the company's long-term strategy in sustainability matters, to provide an example. In addition, all the graphs and tables created by the tool will be presented in an easily exportable file, so to be made available for use in companies' presentations pitches or for integration in business' reports other than the sustainability disclosure.

Further, all the assessment process will be backed by a system of assistants available via chat at all times so to provide guidance to first-time users on how to perform the evaluation.

Finally, all the information will be summarised and presented in scorecards. The venture will then take advantage of this feature under two different perspectives. On one side, this feature will facilitate the readability as well as the understandability of the assessment result to less experienced stakeholders. On the other, it will enable the founder to quickly compare performance over years, as the scorecards will contain all the key information about the venture's ESG performance.

4.3.2. Uses of sustainability performance assessment in the Start-Up context

The designed ESG tool has been conceived to support SUs in creating, delivering and capturing value. Thanks to the information retrieved through the assessment, the venture will be able to monitor the core aspects of its business as well as have a clearer view on its development path. Externally, this data can be used to convey the storytelling of the company to stakeholders and to generate sustainability reports.

The tool described represents only an example of what can be done to support SUs in assessing their sustainability performance. The crucial element for the creation of an effective tool tailored to SUs is its ability to align to the SU approach. Therefore, it is acceptable for a tool to use the same structure and functioning for evaluating the sustainability performance of both SMEs and SUs. However, for all the reasons stated in this chapter, the content, the requirements as well as the purpose of the assessment itself should follow separate directions for SMEs and SUs.

More specifically, sustainability assessment tools for SUs should be designed so to be useful for the SU itself, to guide the venture in its decision-making and as an internal control tool able to detect changes in any of the core dimensions of the business.

Conclusions

Environmental, social and governance disclosure is a crucial component of corporate reporting as an increasing number of parties are interested in non-financial information (NFI). Academics conducted extensive research on the benefits of NFI disclosure in large enterprises. However, the same subject remains poorly explored among small and medium enterprises (SMEs), and almost non-existent for Start-Ups.

This thesis studies the state of work in relation to ESG assessment tools for SMEs. By analysing the existing tools for SMEs ESG assessment and studying the specific needs of SUs in sustainability evaluation, the study highlights the ineffectiveness of having the same tool for evaluating both SMEs and SUs. The main explanation behind this statement is that the report generated at the end of the assessment has different purposes depending on the typology of the undertaking assessed. This because, if SMEs require a non-financial reporting disclosure for compliance purposes, SUs will mostly use the results of the evaluation both as a guide to decision-making and as an internal control tool since, as of today, no normative obligation to report on NFI is in force for SUs.

After deeply studying the existing tools tailored to SMEs and analysing the specific needs of SUs, we propose a software modelled to enable SUs to quantify their level of sustainability. The study reveals that in order to be designed to fit the SU context, the tool should emphasise the governance dimension as well as its core structure, composed of stakeholder engagement, sustainable value proposition, risk management, environmental and social awareness. Therefore, although the desired tool should concentrate on all ESG dimensions, the emphasis should be given to governance matters as the long-term survival of the venture depends to a great extent on the founders' ability to lead the business in its unpredictable environment.

Moreover, the desired tool should meet specific requirements such as cost and time efficiency so to accommodate the resource scarcity typical of SUs. In addition, the latter should function as a tool guiding the venture in identifying market opportunities as well as managing risks while it scales.

Given the absence within the market of a sustainability evaluation tool specifically tailored to SUs, this thesis contributes to the academic research in providing clarification

on the differences existing between sustainability reporting for SMEs and SUs as well as identifying the key characteristics a tool designed for SUs should possess.

Finally, based on these conclusions, business practitioners should try to design and implement tools such as the one described above, while scholars should consider deepening the academic knowledge to assess the impact deriving from the implementation of sustainability assessment tools in SUs.

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