Driving Sustainable Growth - a New Role for the Gatekeepers of Innovation?

A qualitative study about sustainability practices in Swedish venture capital firms

Anna Serner (50606)
Nora Johansson (50601)

Bachelor Thesis
Stockholm School of Economics
May 2021

Abstract

This thesis examines how venture capital firms define and assess sustainability in the screening process of investment objectives and in the development of portfolio companies. Further, it investigates factors affecting the extent to which venture capital firms address sustainability. This was explored through a qualitative method consisting of two phases: a pre-study and a main-study. In the first phase, 5 experts from the venture capital ecosystem were interviewed, which was followed by 10 interviews with venture capital professionals in the second phase. The findings revealed an ambiguity in what accounts as a sustainable investment and further indicated that reaching a common understanding would be useful to promote sustainability within the venture capital industry. Moreover, no standardized approach to assess the sustainability impact of investment objectives exists thus assessment methods differed among venture capital firms. In general, the firms either adopted a holistic or niche approach, and emphasized the importance of measuring activities that have material impact. Finally, factors affecting the extent to which sustainability is addressed can be divided into internal and external pressure. The former include investment thesis, human capital and brand implication whereas the latter include market demand, limited partners, government regulation, venture capital community and market history.

Keywords: Sustainable development, Sustainable investing, ESG investing, Impact investing, Sustainability impact assessment, Start-ups, Venture capital, Sustainable venture capital

Authors: Anna Serner (50606) and Nora Johansson (50601)

Supervisor: Sara Melén Hånell, Research Fellow, Department of Marketing and Strategy

Acknowledgement

We would like to extend a big thank you to everyone who participated in this study. Your answers, knowledge, questions and thoughts have been invaluable to us. We also want to thank our supervisor Sara Melén Hånell who has given us constant support and valuable feedback throughout the whole process.

Anna and Nora

Definitions

Concept	Definition
Angel investor	A high net worth individual who provides financing to a start-up, either in exchange for convertible debt or equity (Scott, 2003)
Cleantech	Cleantech refers to any product, service, or process that delivers value using limited or zero non-renewable resources and/or creates significantly less waste than conventional offerings (Cumming et al., 2016)
Dual objective	Investments made with the intention to generate positive, measurable social and environmental impact alongside a financial return (Barber, Morse & Yasuda, 2021)
Exclusionary approach	The exclusion from a fund or portfolio of certain sectors, companies or practices based on specific ESG criteria (GSIA, 2018)
Exit	The realization of an investment (DeMarzo & Berk, 2017)
General partner	Investor who is personally responsible for the debt of the company invested in (DeMarzo & Berk, 2017)
Impact VC firm	Making investments with the intention to generate a measurable social and environmental impact alongside a financial return (GIIN, 2013)
Inclusionary approach	Investment in sectors, companies or projects selected for positive ESG performance relative to industry peers (GSIA, 2018)
Institutional investor	Managers of large quantities of capital and typically consist of pension funds, insurance companies, endowments and foundations (DeMarzo & Berk, 2017)
Limited partner	Owner whose responsibility is limited to their investment and whose property cannot be seized to pay outstanding debt (DeMarzo & Berk, 2017)
Niche VC firm	Making investments in a predetermined investment area related to sustainability, typically clean energy and green technology (created by Johansson & Serner, 2021)
Private equity	Medium or long-term equity investment which is not publicly traded on a stock exchange (Cendrowski et al., 2012)
Purpose-driven approach	Investment in business that provide both financial returns and fulfilment of a broader social mission (EY, 2019)
Retail investor	Small individual investors who commit capital for their personal account rather than on behalf of another company (Scott, 2003)
Start-up	A temporary organization designed to search for a scalable business model (Blank, 2013)
Sustainable development goals	17 development goals addressing global challenges, developed to reach Agenda 2030, and adopted by United Nations Member States in 2015 (United Nations, 2020)
Sustainable investing	An investment approach that considers environmental, social and governance (ESG) factors in portfolio selection and management (GSIA, 2018)
Traditional VC firm	VC investors not willing to make any financial sacrifice to achieve social goals (created by Johansson & Serner, 2021)
Triple bottom line	Systematic management efforts by corporations to balance environmental and social considerations with economic goals (Klevitz & Hansen, 2014)
Venture capital	Professional asset management activity that invests funds raised from institutional investors, or wealthy individuals, into promising new ventures with a high growth potential (Da Rin, Hellmann and Puri, 2013)
Venture capital firm	A limited partnership that specializes in raising money to invest in equity of young companies (DeMarzo & Berk, 2017)

Abbreviations

Abbreviation	Definition
ESG	Environmental, Social, Governance
GP	General Partner
KPI	Key Performance Indicator
LP	Limited Partner
PE	Private Equity
SDG	Sustainable Development Goals
VC	Venture Capital

Table of content

1. Introduction **7**
1.1 Background 7
1.2 Prior research and research gap 8
1.3 Purpose and research questions 8
1.4 Primary focus and delimitation 9
1.5 Disposition 10

2. Literature review 10
2.1 Defining sustainability 10
2.1.1 Conceptualizing a sustainable investment 11
2.2 Start-ups and their role in sustainable development 12
2.3 Sustainability assessment of start-ups 13
2.4 Venture capital and its role in driving sustainable growth 14
2.4.1 Venture capital and sustainable investing 17
2.5 Summary of literature review 18

3. Method 18
3.1 An abductive and qualitative study 18
3.2 Research method and design 19
3.3 Research sample 19
3.4 Phase one - pre-study and literature review 21
3.5 Phase two - main study 21
3.6 Data analysis 22
3.7 Ethical considerations 23

4. Empirics 23
4.1 Findings from the pre-study 24
4.2 Findings from the main study 24
4.2.1 No universal definition of a sustainable investment 24
4.2.2 Measurability 25
4.2.2.1 Universal metrics not adapted to start-ups 25
4.2.2.2 Issues concerning data available 27
4.2.2.3 Focus on material issues 27
4.2.3 The ecosystem’s influence on sustainable investment practices 28
4.2.3.1 Investment thesis 28
4.2.3.2 Mobilization of resources 29
4.2.3.3. Market demand 29
4.2.3.4 Limited partners 29
4.2.3.5 Governmental interference and regulations 30
4.2.3.6 The VC community 30

4.2.4 Market dynamics 31
4.2.4.1 Risk and return 31
4.2.4.2 A ‘green’ bubble 31

5. Discussion 32
5.1 Towards a definition of a sustainable investment 32
5.2 Assessing sustainability impact of investment prospects and portfolio companies 34
5.3 Factors affecting the extent to which venture capital firms address sustainability 36
5.3.1 Internal pressure 36
5.3.2 External pressure 37

6. Conclusion 41
6.1 Managerial implications 40
6.2 Limitations and further research 41

Reference list 42

Appendix 49
Appendix 1. Interview participants 49
Appendix 2. Interview guide 50
Appendix 3. Consent form 52

1. Introduction

1.1 Background

“Sustainable investing will be a core component for how everyone invests” Larry Fink, Chairman & CEO of BlackRock, the largest asset manager in the world, stated in 2018 (Financial Times, 2018). At that point in time, sustainable investment assets in the five major markets (Europe, United States, Japan, Canada and Australia) reached $30.7 trillion, having increased with 34% in just two years’ time (GSIA, 2018). The key driver of this trend is market demand; an increasing number of consumers put pressure on companies to act in a responsible manner thereby pushing the agenda forward (FMO, 2020). Indeed, the field of sustainable investing has experienced an exponential growth over the past decade and the growth rate is not expected to abate anytime soon (Barber, Morse & Yasuda, 2021). Rather, the COVID-19 pandemic is expected to accelerate the interest for mission-driven companies, thus indicating that the field will grow at an even faster pace going forward, in turn presenting a business opportunity for investors taking the lead (Isomer Capital, 2021).

Given the growing importance of sustainable investing, it is surprising that there is no consensus of what the concept means to an investor (Berry & Junkus, 2013). As a result, the field has been approached in different ways and to various extent. While it is now common practice for many institutional investors to address sustainability elements in their investments, venture capital (henceforth VC) firms have been slow to integrate it into their strategies (Isomer Capital, 2021). This can partly be explained by the limited guidelines on how to address sustainability in the VC industry. At present, most existing frameworks and well-established practices are developed for larger corporations and later stages of investing and are therefore not suitable for fast growing start-ups and early-stage investing. Although several organizations have tried to build frameworks for how to measure, manage and report impacts on sustainability (e.g., GIIN, PRI, Impact Management Project, SASB), these are still too cumbersome for VC. This thesis, which is based on qualitative interviews with 15 industry participants, aims to bring clarity to the current state of the Swedish VC industry and contribute to a deeper understanding of the barriers and facilitators impacting the incorporation of sustainability dimensions into the investment analysis and development of portfolio companies.

1.2 Prior research and research gap

There is growing interest from venture capitalists to understand how sustainability can be incorporated into their practises - thus highlighting a need for research in this area. While many studies have been conducted on sustainable investing (e.g., Berry & Junkus, 2013; Friede, Busch & Bassen, 2015; Madison & Schiell, 2021), research on the investment area from a VC perspective is limited (e.g., Bocken, 2015; Antarciuc et al., 2018). Existing literature focuses predominantly on larger institutional investors, and much of it concerns the performance of socially responsible funds (e.g., Cortez et al., 2012) or socially responsible investor behavior and attitudes (e.g., Berry & Junkus, 2013; Jansson & Biel, 2011). Moreover, prior research has investigated sustainable practices and sustainability assessments in start-ups (the target objectives of VC investors) (e.g., Klewitz & Hansen, 2014; Trautwein, 2021). Yet, to our knowledge, no researcher has combined these areas. Thus, considering the increasing public interest, both practitioners and academia call for more research within the field of sustainable VC. For example, Bocken (2015) highlights that more research is required to understand how VC can support the development of sustainable business. To address this gap in current literature and contribute to the theoretical body of knowledge this thesis aims to clarify the role VC has in driving sustainable growth.

1.3 Purpose and research questions

The purpose of this study is to (1) explore how sustainability dimensions are valued and addressed by VC firms, and (2) investigate what barriers and facilitators that exist affecting the extent to which sustainability is addressed by VC firms. The growing pressure on firms to report and work with sustainability issues (Brooks & Oikonomou, 2018), together with the limited resources constraining VC firms and their portfolio companies calls for a need to find a common understanding and approach to sustainable investing. This in turn can enable VC firms to set goals as well as assess and compare performance of portfolio companies. As such, VC firms have an opportunity to show leadership in sustainable investing and drive the adoption of better firm management and investment practices. Against this background, this thesis aims to answer the following research questions:

RQ1: *How do VC firms define a sustainable investment?*

RQ2: *How do VC firms assess sustainability impact?*

RQ3: *Which factors affect if and to what extent VC firms address sustainability in the investment process and development of portfolio companies?*

1.4 Primary focus and delimitation

The thesis will focus on VC firms active on the Swedish market. This is an interesting group to target since Sweden, or Stockholm more specifically, has been recognized to have the most unicorns per capita, apart from Silicon Valley in the US, whereof many have received VC funding (Financial Times, 2021). In addition, a number of Swedish VC funds have been raised in the past years with the specific goal to invest in companies addressing sustainability issues (e.g., Norrsken Impact Fund). At the same time, Europe is in the forefront of sustainable investing, having committed assets to sustainable and responsible investment strategies to a value of - $14.1 trillion (GSIA, 2018).

The study will not include angel investments or private equity. This delimitation has been made since their investment strategies differ from VC firms and they invest in companies that have less respectively more resources, formal structures and external requirements. Further, to allow for an inclusive view of the subject and not restrict or limit the scope and application of sustainable practises by VC professionals, we have chosen to include Impact, ESG, SRI, CSR and adjacent concepts into the definition of sustainability and sustainable investments. We also allow for narrower approaches dealing with one or several selected sustainability dimensions. This is because companies often focus on, or begin with, improvements in either environmental or social dimensions (Klevitz & Hansen, 2014) and some investors focus on a certain sustainability dimension (e.g., environmental) alongside the financial aspect in their investment thesis.

1.5 Disposition

The remainder of this thesis is divided into five sections and is structured as follows: First, in section two, a literature review is conducted. Next, in section three, the method and research design used for this study is described. Following, section four presents the findings from the 15 interviews conducted. Based on these findings, section five consists of a discussion which aims to answer the stated research questions. Finally, section six offers implications for research and practice and presents the limitations of the study as well as suggestions for further research.

2. Literature review

The literature review is divided into four parts to provide a background on subjects related to the research questions. Firstly, to provide an overview of the current state of the sustainable investment field, a background of sustainable development and existing definitions of sustainable investing used in literature is presented. Secondly, start-up specific characteristics and their role in driving innovation and sustainable development is analyzed. Thirdly, the potential benefits of using metrics to reach sustainability goals and the assessment challenges sprung from the inherent characteristics of start-ups is discussed. Finally, as VC is often mentioned as a key contributor to the success of start-ups, the last section of the literature review covers VC's role in facilitating sustainable growth.

2.1 Defining sustainability

The concept of sustainable development gained global recognition when it was defined by the World Commission for Environment and Development in 1987 as the ability to "meet the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). Based on this political concept, the notion of corporate sustainability emerged to revolve around the triple bottom line (Elkington, 1997) and can be understood as systematic management efforts by corporations to balance environmental and social considerations with economic goals in order to minimize harm to and increase benefits for environments and societies (Klevitz & Hansen, 2014). This global agenda for change has gained much attention by researchers in the past decades, and consequently, a considerable amount of literature concerns corporations and their role in society.

2.1.1 Conceptualizing a sustainable investment

Evident from the literature review is the lack of consensus of what constitutes a ‘sustainable’ investment (Berry & Junkus, 2013; Brooks & Oikonomou, 2018). On the one end of the spectrum is the traditional view of capitalism building on the idea that a business contributes to society by making a profit, which supports employment, wages, purchases, investments and taxes (Porter & Kramer, 2011), and can be summarized by Kaiser’s (2020) broad definition of a sustainable investment “to be able to continue over a long period of time”. However, most existing literature believe that companies have a greater responsibility than to solely exist, and thus, that sustainable investing includes delivering additional value beyond profit. While some researchers have focused on sub-dimensions of sustainability, such as “green investing” and “ethical investing”, many scholars have adopted a holistic view of sustainability, in line with the idea of the triple bottom line.

Many researchers focus on the outcome of doing business; Antarciuc et al (2018) define sustainable investing as “investments in technologies, processes or products with positive environmental, social and economic outcome”; Bocken (2015) uses the Global Impact Investing Network’s definition of an impact investment as investments “made with the intention to generate a measurable social and environmental impact alongside a financial return” (GlIN, 2013). Other scholars focus more on the operations of the companies, for example Nofsinger and Varma (2014) argue that socially responsible investing (SRI) includes investing in “organizations that strive for financial success while accepting responsibility for their impact on society and relationships with a diverse group of stakeholders"; Berry and Junkus (2013) summarize various definitions of SRI to involve “integrating personal values and societal concerns with investment decisions”; Friede, Busch and Bassen (2015) highlight the integration of “environmental, social, and governance (ESG) criteria within investment decisions”; Madison and Shiell (2021) uses the Sustainability Accounting Standards Board’s (SASB) framework to classify ESG into six dimensions (Environment, Social, Capital, Human

Capital, Business Model and Innovation) and further argue that knowledge about financial materiality of ESG issues is critical to investors.

In summary, similarities in the definitions include incorporation of the financial dimension and societal concerns (either social, environmental or both) while differences that set them apart relate to what (which) sustainability dimension(s) is assigned the most weight and whether the focus is on the outcome of doing business or on the operations of a company. Based on this, we have chosen to conceptualize a sustainable investment as "an investment approach that considers environmental, social and governance (ESG) factors in portfolio selection and management" (GSIA, 2018).

2.2 Start-ups and their role in sustainable development

It is a widely shared view in academic research that start-ups play an important role in driving sustainable development. Several research streams recognize the role of new ventures to discover, create and exploit opportunities for sustainability through innovations leading to institutional and market transformations (e.g., Cohen & Winn, 2007; Dean & McMullen, 2007; Schaltegger & Wagner, 2011; Spender et al., 2017). In fact, many new solutions that are crucial to transform the society to a more sustainable one, e.g., renewable energy, would not have come into existence without start-ups (Hall, Daneke & Lenox, 2010; Johnson & Schaltegger, 2020). Trautwein (2021) states that there are differences in how start-ups contribute to sustainable development goals and how they create a positive sustainable impact. However, a multitude of existing literature highlight the role of innovation (which start-ups are a key driver of) to be of high importance in driving sustainable development (Schaltegger & Wagner, 2011; Spender et al., 2017). For the purpose of this study the authors will use the well-known definition of a start-up coined by Blank (2013) as "a temporary organization designed to search for a scalable business model".

The inherent characteristics of start-ups offer both opportunities and challenges. Start-ups have advantages in that they are flexible, innovative, and often characterized by an entrepreneurial style with lean organizational structures enabling them to be value-driven and react more quickly to unanticipated or short-term changes in the market (Bocken, 2015; Spender et al., 2017; Klewitz & Hansen 2014). Klewitz and Hansen (2014) adds that start-ups thus would be in a better position, than large companies, to innovate radically and compete successfully in niche markets with sustainable open innovations (i.e., integrating ecological and social aspects into products, processes, and organizational structures). However, due to their small size, start-ups are constrained by limited resources (both tangible and intangible), lack of formalized planning and difficulty to attract financing, which hinders the development of innovation processes and their ability to grow (Klewitz & Hansen, 2014; Spender et al., 2017).

How companies contribute to sustainable development differ depending on what phase they are in the business lifecycle. While start-ups play an important role in emerging and early growth phases of market development, larger established companies play a key role in the growth and mature phases of an industry (Hockerts & Wüstenhagen, 2010). Still start-ups, by its definition, are temporary and will take one of two possible routes: either they fail, or they succeed and grow into larger companies. Thus, as start-ups develop and grow, so does their impact. Bocken (2015) highlights that choices made in the early stages of a business determine an important part of its sustainability impacts as decisions regarding the business model, strategy and offering are all made in the beginning of a company's life.

2.3 Sustainability assessment of start-ups

To increase the attractiveness of companies providing sustainable solutions, Trautwein (2021) argues that actors on the market must be able to assess the sustainability impact of start-ups. Metrics and KPIs have long been recognized by literature as important management tools for reaching goals, communicating a common direction and benchmarking. Moreover, popular sayings such as "what gets measured gets done" and "if you can't measure it, you can't manage it", further highlight the role metrics can play for efficient resource allocation (Catasús et al., 2007; Marr, 2012). However, although metrics are important, they can also be problematic. In order for a metric to add value it needs to measure the most important aspects of a business and be based on adequate data (Catasús et al., 2007; Marr, 2012). Moreover, critics argue that extensive use of metrics might lead to organizations focusing on improving the numbers instead of the underlying situation (Emilian, 2000). Castús and colleagues (2007) additionally add that metrics support questions already important to the organization hence emphasizing that to incentivize change and reach desired goals, resources need to be mobilized to promote action. In line with this, Trautwein (2021) suggests that, in order to succeed with sustainability assessment of start-ups, it is necessary to have a simple approach and focus on measuring activities that have material impact.

Another lever contributing to the difficulty in measuring sustainability is the complexity it entails. Previous research reveals that the majority of methods does not give specific attention to the maturity and size of the organizations and that start-up specific characteristics oppose several challenges for reaching an accurate and valuable sustainability assessment (Trautwein, 2021). Some of the main obstacles identified include limited resources, informal organization structures and lack of historical data (Picken, 2017; Wickert, 2016; Skala; 2019). Moreover, a key challenge in sustainability assessment is the fact that it entails multidisciplinary aspects (e.g., environmental, economic and social) as well as cultural and value-based elements (e.g., core principles and beliefs of the organization) (Sala, Ciuffo, & Nijkamp, 2015). Thus, a general uncertainty about what to measure and how to do it permeates the sustainability assessment and reporting (Berry & Junkus, 2013).

Considering the many challenges with sustainability assessment of start-ups and the fact that there is no universally accepted practice, the measuring method chosen is heavily dependent on the preference and objectives of the investor (Trautwein, 2021). A common strategy for dealing with impact aspects is to either adopt an exclusionary or inclusionary screening strategy. When pursuing an exclusionary approach, the investor excludes certain companies or industries based on products or corporate behaviors (e.g weapons and gambling). Further, when adopting an inclusionary approach the VC firm instead premier companies acting in a socially responsible way. The latter approach is more difficult, since it requires the VC investor to decide on which corporate behaviors to encourage and how much importance to assign each type of activity (e.g., diversity versus reduction of CO2 gas emission) (Berry & Junkus, 2013).

2.4 Venture capital and its role in driving sustainable growth

VC is often mentioned as a key contributor to the success of start-ups, thereby increasing the speed of innovation. Research shows that VC-backed firms grow faster at every stage of the business cycle, produce more valuable patents and create more value than non VC-backed firms (Keuschnigg, 2004; Da Rin, Hellmann, & Puri, 2013). Still, critics often argue that the superior performance of VC-backed firms can be at least partially explained by the 'screening' ability of VC firms (i.e., their ability to select high quality firms that would have performed well even without VC support). As such, there are contradicting views on how much value VC firms actually add (Croce, Martí & Murtinu, 2013). Nevertheless, literature highlights VC firms' role as gatekeepers to the emergence of new companies, since their purpose is to select and support the most promising venture ideas presented to them by entrepreneurs (Marcus, Malen, & Ellis, 2013). In consequence, VC firms have an opportunity to show leadership in sustainable investing and play an important role in driving sustainable growth. An overview of VC's position in relation to other investors is illustrated in **Figure 1.**

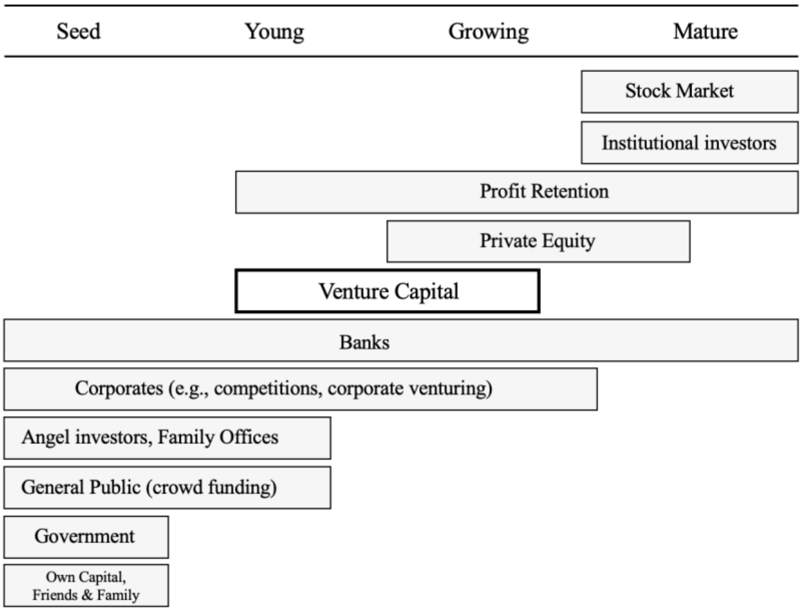

Figure 1. *The position of VC in relation to other investors supporting growing businesses (Bocken, 2015), edited by Johansson and Serner 2021.*

For the purpose of this study, VC will be defined as a "professional asset management activity that invests funds raised from institutional investors, or wealthy individuals, into promising new ventures with a high growth potential" – a widely accepted definition invented by Da Rin, Hellmann and Puri (2013). Venture investors are typically organized into smaller partnerships of individual partners (general partners, henceforth GPs), who actively manage the fund through investing and development of portfolio companies. In exchange for funding the VC firm receives a minority stake of equity. The money used for the investments is provided by institutional or retail investors (limited partners, henceforth LPs), who retain limited liability by being inactive owners and not interfering with the operations of the firm (See **Figure 2**. for illustration of VC fund structure) (Da Rin, Hellmann, & Puri, 2013). In the screening process, VC firms are guided by their investment thesis and investments are pursued with the intention to build successful enterprises which result in a higher company and shareholder value and increase the probability of a profitable exit (Bocken, 2015; Amornsiripanitch, Gompers & Xuan, 2019). Further, the main activities conducted by a VC firm is to carefully screen, contract and monitor their portfolio companies, and research shows that active VC involvement is positively related to the success of portfolio companies (Bottazzi, Da Rin & Hellmann 2008; Kaplan & Strömberg, 2001). Thus, to increase the value of the portfolio companies, VC firms usually provide a range of value adding activities (e.g. strategic, governance, network) in addition to liquidity (Proksch et al., 2016). The influence is often pursued by holding a board seat, through which VC firms impact, advise, but also to control their portfolio companies (Manigart & Sapienza, 2008).

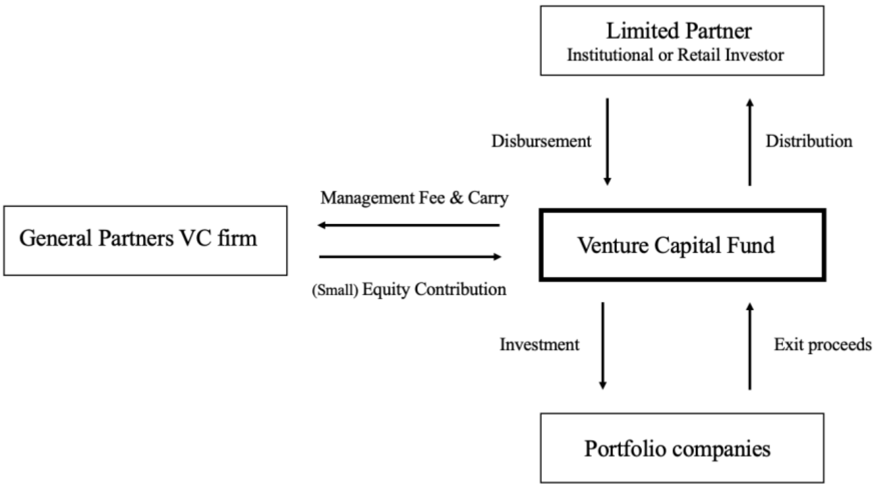

Figure 2. *A graphical model of VC (Da Rin, Hellman & Puri, 2013), edited by Johansson and Serner 2021.*

Both internal and external factors contribute to the success of VC firms. One key asset in a VC firm is the human capital of the investment managers; research has shown that the specialization and experience of the GPs affect the performance and investment strategy of the fund (Da Rin, Hellman & Puri, 2013). Gompers, Kovner and Lerner (2009) found a strong positive relationship between the degree of specialization of the fund and its success and further showed that VC firms with more experience tend to outperform those with less. In line with this, the findings by Bottazzi, Da Rin, & Hellmann (2008) illustrate that VC firms consisting of partners with prior industry experience are significantly more active in the companies they finance, further highlighting the importance of human capital. Moreover, VC firms contribute to the success of new ventures by sharing their network and acting as a quality indicator (Proksch et al., 2017). Due to the perception of VC firms only investing in companies with high growth potential, receiving a VC investment can have a significant role in signaling value which can help companies attract additional investors and work as a competitive advantage in the recruitment process of key competence (Jeong et al, 2020). Further, the performance of a VC firm is affected by the surrounding ecosystem. The collaboration with other VC firms has been found to be especially influential, partly due to the fact that VC firms often syndicate their investments together with other VC firms and research has shown that better-networked firms enjoy superior investment performance (Hochberg, Ljungqvist & Lu, 2007).

2.4.1 Venture capital and sustainable investing

In the beginning of the 21th century, the interest for sustainable investing exploded among VC investors with the majority of money being invested into cleantech companies (providing energy efficient technologies in energy, transportation, water and materials). However, as a result of large market demand and beneficial government subsidies, a bubble was created which burst in 2009 leading to a market drop of nearly 50% (Bygrave et al., 2014; Cumming, Henriques & Sadorsky, 2016; Gaddy et al., 2016). In recent years, an increasing number of investors have again started to consider sustainability dimensions in the investment analysis. This is mainly a result of a growing market demand, but also due to recent data showing a positive correlation between long-term financial performance and socially responsible investments (Losse & Geissdoerfer, 2021). When combining findings of about 2200 studies covering the topic of the relationship between ESG criteria and corporate financial performance (CFP), it was found that a majority of research shows a positive correlation between ESG on CFP. While the business case for ESG investing is empirically well founded (Friede, Busch & Bassen, 2015) there still exists contradicting views regarding the performance of impact investments. A recent study covering a sample of approximately 4600 VC funds found that VC firms investing with a dual objective (investments made with the intention to generate positive, measurable social and environmental impact alongside a financial return) earn on average 4.7

percentage points lower internal rates of return (IRRs) ex-post than traditional VC funds (Barber, Morse & Yasuda, 2021).

2.5 Summary of literature review

To conclude, the literature review reveals that sustainable investing has gained increased attention by academia in recent years. However, research on the relationship between VC and sustainability is still limited and several questions remain to be answered. It is evident that a lack of consensus in what constitutes a sustainable investment prevails and definitions differ depending on the specific research question of each study. Moreover, it is highlighted that start-ups are key contributors to innovation and choices made in early stages of a business lifecycle can determine an important part of its sustainability impact. Further, metrics and KPIs are recognized to be important management tools for reaching sustainability goals, however, assessing sustainability is complex, particularly for start-ups. Lastly, literature recognizes VC as a key contributor to the success of start-ups by providing value-adding activities apart from liquidity, and further highlights a growing interest in sustainable investing among VC investors.

3. Method

3.1 An abductive and qualitative study

This study is based on an interpretative qualitative research method. Thus, the informants' answers are not a direct mirroring of the reality, rather they explain the respondents' perception of the world and capture a subjective view of what factors that impacts the extent to which VC firms address sustainability. The approach was deemed appropriate as it provided an in-depth understanding of the research subject through examining the respondents' interpretation of the field. Moreover, given the fact that practice is far ahead of academia in the area, it was important to offer flexibility to the interviewees. Thus, to address the research questions, semi-structured interviews were conducted, which allowed the interviewees to freely structure their answers and deep dive into issues particularly relevant and important to the person in question. Additionally, the interview method allowed for follow-up and clarifying questions which enhance the reliability of the empirical findings. This would not have been possible in a fully structured interview process which requires a standardized way for how every interview subject is dealt with (Bryman & Bell, 2011).

Moreover, the research approach of this study is of abductive character, which is recommended when performing research in an unexplored field since it allows the researchers to develop the empirical scope successively and adjust theory accordingly (Flick, 2009; Taylor et al., 2002). As such, theory and empirical data have been collected in parallel and formed each other. Moreover, the data collection process of this study consisted of two phases, which was followed by a third phase of data analysis. Two rounds of interviews were conducted: a pre-study with open interviews consisting of 5 participants, followed by a main study with semi-structured interviews consisting of 10 participants. All interviews were conducted via Zoom which enabled the authors to see face expressions and better interpret the data. A similar research approach was taken by e.g., Bocken (2015) and Leete, Xu and Wheeler (2013).

3.2 Research method and design

The study was conducted according to a cross-sectional research design whereby qualitative interviews were conducted during one point in time (Bryman & Bell, 2011). This was deemed appropriate to gain an understanding about the interviewees' perceptions of how sustainability is addressed at the VC firm where they are employed. Moreover, a survey or case study was not deemed relevant as the first would not provide us with sufficiently detailed answers and the latter would not shed light on the differences between sustainability practices among VC firms, which is of interest for this study.

3.3 Research sample

Actors part of the VC ecosystem, but not pure venture capitalists, were first contacted to participate in a pre-study. Participants were chosen based on their different positions in the ecosystem (two researchers, two industry experts and one industry organization analyst), with the purpose of gaining a multidimensional perspective of the current market situation for sustainable VC and refine research themes. The pre-study consisted of 5 participants, all active in the Nordic market, and interviews were held virtually. To get in contact with the different interviewees, a snowballing technique was used, where participants recommended other relevant actors (Bryman & Bell, 2011). Such technique was deemed appropriate to identify and get in contact with experts in the field. All actors contacted agreed to participate in an interview.

For the main study, 10 VC professionals were interviewed to get a detailed understanding of how they work with sustainability in their firms. However, it was not their personal opinions that were of importance, rather they were representatives for the VC firm by which they were employed. The geographical scope was limited to VC firms operating in the Swedish market, which was chosen as Sweden is in the forefront in terms of both sustainability progress and raising unicorns through VC funding (Sustainability Development Report, 2020; Financial Times, 2021). Further, since no clear definition or demarcations between VC and other private equity investments (e.g., growth equity) exist (Da Rin, Hellman & Puri, 2013), it was decided to limit the sample by only including firms defining themselves as "venture capital" firms. As a result, 15 VC firms were asked to be part of the study - whereof 10 participated in an interview. All participants worked both with the investment process and the development of portfolio companies. An overview of the participating firms and respondents can be found in **Table 1**.

Name	**Type of VC Firm** (See definition p. 3)	**Company**	**Role**
Anna	Niche	Company A	Investment Manager
Beatrice	Traditional	Company B	CEO and Partner
Carl	Niche	Company C	Head of Greentech
Danielle	Traditional	Company D	Investment Director and Head of Sustainability
Eric	Niche	Company E	General Partner
Felicia	Traditional	Company F	Investment Associate
Gaberiella	Traditional	Company G	Principle
Henric	Niche	Company H	General Partner
Isac	Impact	Company I	General Partner and Chair of Investment Committee
Josephine	Traditional	Company J	Investment Manager

Table 1. *Overview of participating VC firms and interviewees.*

To ensure a broad sample, the interviewees held different positions, had varying levels of experience and were of different gender (See **Appendix 1.** for details about interviewees). The interviewees were contacted via email or LinkedIn; some were cold-called using contact details from the firms' official websites whereas others were connected with the authors through the latter's network. While this approach was found to be the best fit to answer the research questions, it does have disadvantages. The limited number of participants, choice of sample and subjectivity of participants may affect the findings and therefore the replicability of the study (Bryman & Bell, 2011). After eight interviews, it was discussed whether empirical saturation had been reached or not. To be certain, two additional interviews were held which confirmed that the study had indeed achieved empirical saturation, and hence, that additional interviews would not add new important information to the study (Bryman & Bell, 2011).

3.4 Phase one - pre-study and literature review

The primary goal of the pre-study was to gain a better understanding of the VC ecosystem and how sustainability questions are currently addressed by different actors in the market. This was done through a combination of open-ended interviews and a thorough review of relevant research. The pre-study consisted of 5 interviews (between 29 and 39 minutes), which were held virtually between January 22nd and March 2nd, 2021. Over the course of the interviews, certain patterns, concepts, similarities and differences could be identified in the empirical data, which guided the development of the question used for the semi-structured interviews in the main study.

3.5 Phase two - main study

The primary data collection consisted of 10 interviews with VC professionals from 10 different VC firms active on the Swedish market. Interviews were held virtually between February 25th and March 23rd, 2021 and lasted between 29 and 52 minutes. To ensure consistency, the same interview template was used as a starting point in all interviews, however, the questions were only used as a guide to ensure that all research themes were touched upon in the open discussion. When direction was needed the interviewer was careful to use an open language in order to avoid researcher bias (Flick, 2009; Saunders et al., 2000). The themes and key questions are included in **Table 2** (See **Appendix 2**. for the full interview guide).

Theme	Key Questions
Introduction	Tell us about your role. Walk us through an investment process from start to finish. What is your company's investment strategy?
Sustainability	How does your company define a sustainable investment? How do you work with sustainability in the screening of a potential investment objective and in your portfolio companies? What impact do sustainability aspects have on the investment decision?
Measurability	How do you measure sustainability aspects when analyzing investment prospects? How do you measure and control the sustainable impact of your portfolio companies? Do any global metrics to measure sustainability exist? What do you use? How do you report your portfolio companies' sustainability performance to your stakeholders?
Ecosystem	What requirements do your investors have on you? How do government decisions affect your work?

Table 2. *Themes and key questions addressed in the semi-structured interviews.*

3.6 Data analysis

To ensure validity all interviews were conducted with both authors present, one responsible for leading the interview and one focusing on taking comprehensive notes (Silverman, 2010). When permission was given the interviews were audio-recorded (14 out of 15 interviews were recorded), which allowed the researchers to actively listen and focus on non-verbal cues during the interview (Saunders et al., 2000). To create a full and accurate record the audio-recordings were transcribed in connection to when the interviews were conducted. By ensuring prompt transcriptions, concerns related to imperfect memory and mixing interviews were avoided (Leete, Xu & Wheeler, 2013). 14 out of 15 interviews were held in Swedish with quotes translated to English. To account for the linguistic and cultural differences between the two languages, a reflexive interpretative translation approach was adopted which allowed the authors to occasionally adopt a flexibility in the translation to maintain original meaning (Xian, 2008).

The analysis was performed by using a thematic method (Braun & Clarke, 2006), enabling identification of recurring patterns in data by using methods of categorization. Step one of the data analysis consisted of organizing the data and grouping similar text together in initial codes

(Rowley, 2012). When the data was organized, a regular comparison of similarities and differences between findings were conducted and four key themes emerged from the data analysis. These were: (1) no universal definition of sustainable investment, (2) measurability, (3) the ecosystem's influence on sustainable investment practice and (4) market dynamics. All key pieces of data from the primary data collection in phase two were coded according to the four themes, this was done multiple times to achieve consistency and precision. Further, another researcher was invited to check the classification and coding in order to reduce the potential of bias in interpretation (Rowely, 2012).

3.7 Ethical considerations

Prior to each interview a consent form was emailed to all participants to sign. The consent form disclosed what personal data was to be collected and informed participants about terms and conditions of the interview (See **Appendix 3.**). All signed consent forms were then sent back to the authors. In the beginning of each interview, prior to the start of the recording, the authors walked the interviewees through a list of ethical concerns and once approval was given the interview began. Moreover, to ensure accurate interpretation and citations not being taken out of context, all participants were emailed citations used in the report for approval. Additionally, the participants' names were exchanged by fictional names (in alphabetical order in which the interviews were conducted), in all documents, to ensure anonymity - thereby increasing the likelihood of receiving truthful answers from the respondents and complying with GDPR requirements.

4. Empirics

4.1 Findings from the pre-study

The pre-study provided the authors with an overall view of the VC market and key findings were summarized into three broad themes used as guidelines in the creation of interview questions for the main study. The themes identified were: (1) a lack of a common definition of what constitutes a sustainable investment, (2) issues concerning sustainability assessment and the importance of addressing material aspects, and (3) facilitators and barriers in the ecosystem affecting the extent to which VC firms address sustainability.

4.2 Findings from the main study

VC firms have adopted different strategies to address sustainability. In **Figure 3.** an illustration of the interviewed VC firms' sustainability practices is provided.

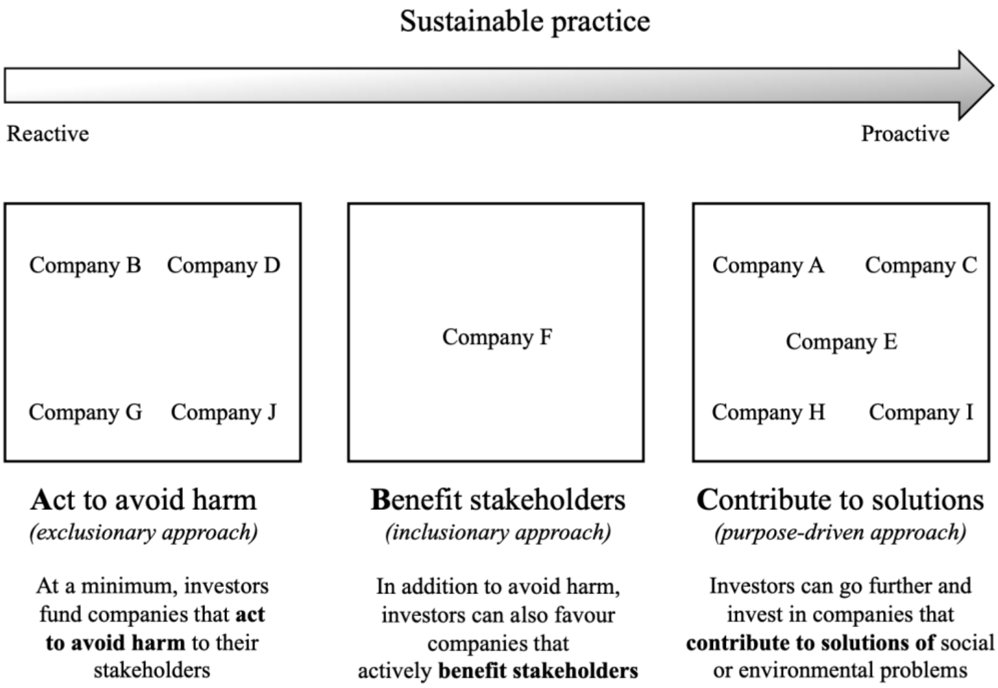

Figure 3. *Positioning of interviewed VC firms in relation to sustainable practises in VC, inspired by the Impact Management Project's ABC framework (Johansson & Serner, 2021).*

4.2.1 No universal definition of a sustainable investment

Before questions about sustainability were discussed all respondents were asked to specify what they defined as a sustainable investment. It became evident that there exists no universally accepted definition of what constitutes a sustainable investment. In general, the firms of the respondents had started to address these questions quite recently (within two years' time) and many of them were still exploring what aspects to include in the definition. Josephine, Investment Manager, explained: "The definition of a sustainable investment is something that we currently work on figuring out", and Beatrice, CEO & General Partner, further highlighted: "There is no short answer. It's the overall picture that is important".

Following the lack of a common definition all respondents had their own view and weighted sustainability dimensions differently depending on company and personal values. Among the investors adopting a holistic view, some had a clear definition: "We define impact companies as a company that automatically when they create a unit of financial return they also create a unit of impact" (Isac, General Partner & Chair of Investment Committee), and: "A sustainable investment is when a company has a business idea that over time and across stakeholders contribute to the SDGs" (Danielle, Investment Director & Head of Sustainability), whereas others primarily highlighted the importance of financial sustainability: "It means that there is an underlying profitability and that there are customers willing to pay for what the company offers. Then you have a profitable company and can create a win-win situation" (Beatrice). Moreover, some investors focused on a certain niche of sustainability: "Our niche of sustainability is mainly (1) greenhouse gas emission (2) planetary boundaries […] One should remember that this is a niche of sustainability - a consciously chosen one" (Carl, Head of Greentech). Further, several respondents acknowledged the challenges with defining a sustainable investment, Anna, Investment Manager, added: "When you talk about sustainability I believe that it's important to begin with defining what you mean with 'sustainability' or that you decide that you look at a certain perspective of sustainability".

4.2.2 Measurability

Evident from the interviews was the difficulty to measure sustainability impact of companies, both in the investment process and once part of the portfolio. Several issues were brought forward by the participants as contributors to the challenge of measurability.

4.2.2.1 Universal metrics not adapted to start-ups

One issue brought up by many was the lack of standardized metrics to use. Josephine argued: "You try not to reinvent the wheel. It's hard to standardize these measures and you want to be in line with the rest of the industry as much as possible. There is a whole VC community building around this topic, how to measure ESG or SDG across VCs and their portfolio. It's in the working but I don't think there is a final version out there". Existing universal frameworks and metrics for measuring sustainability impact are too complex and not adapted to early-stage investing. Eric, General Partner, highlighted: “There are more and more [frameworks], but they are not adapted to smaller growth companies and much revolves around reporting and governance”. At the same time, having measurement systems is viewed to be important: “There is much to improve and by only measuring it [sustainability] I believe that it’s something you start working more consciously with” (Beatrice).

As a result, many VC firms have developed their own frameworks. Felicia, Principle, explained: “We have put together everything ourselves. I have gone over most frameworks in the market and haven’t found anything adapted to early-stage investing. SASB is maybe the most useful framework, however, since we invest in seed stage I still find it too cumbersome”. As a consequence, VC firms have adopted different approaches to measure sustainability. Henric, General Partner, described their framework for assessing sustainability: “We look at it from two perspectives: climate reachable market and climate economics. When a company produces the product it has to have a positive impact on the environment [...] We want their climate effect to be in lockstep with the financial effect”. A similar approach has been adopted by Eric’s VC firm: “In our case it’s very clear that we measure CO2 equivalents and we have set up a model for it [...] We have built the model ourselves in a way that we believe is reasonable, clear and not too demanding for the companies we invest in, rather it’s quite easy to understand and connected to what we want to achieve with the companies - namely to make them grow”. Felicia described a somewhat different approach for assessing sustainability adopted by her firm: “We have divided KPIs into two groups: on the one hand we use the SDGs to measure WHAT positive impact we have on the world, on the other hand we use ESG to measure HOW well we reduce the negative impact we have on the world [...] On the ‘how’ side it is about how you operate your company and then we have generic KPIs for all companies in our portfolio to report on”. Moreover, some VC firms use existing frameworks as a basis for developing their own models to calculate impact, for example Carl highlighted: “We have created our own frameworks where we look at calculations from Mission Innovation in how you calculate greenhouse gas emissions from a technology”. While many voices the importance of implementing metrics, others argued that the lack of measurability is not an issue: “If I am a VC investor investing in early-stage funds it is no problem [the lack of universal metrics] since the company is in a very early stage and we don’t know where the company will end up” (Henric).

4.2.2.2 Issues concerning data available

Another challenge brought up is the type of data available, Josephine highlighted: “It’s not a one size fits all and that is the challenge here I think. The thing is, it’s not all quantifiable data that you have, there is a lot of qualitative data in there as well and you just want to make sure that the data you gather is comparable and meaningful and doesn’t drift off into greenwashing stuff.”. Felicia further expanded on the issue of creating comparable metrics: “I have talked to the ones who have built these frameworks for Norrsken etc and no one has the intention to make them comparable, because it’s not possible. It’s too much of an administrative burden. One should measure it [sustainability impact] based on what kind of data you have available”. Moreover, Anna emphasized the difficulty in creating relevant metrics: “It needs to be sufficiently detailed to be relevant but it cannot be too detailed so it becomes hopeless. It’s very complex and no one has a clue”.

4.2.2.3 Focus on material issues

To combat the measurement difficulties, and also the limited resources constraining both start-ups and VC firms, several respondents highlighted the importance of measuring activities that have material impact. What is considered material - and thus what is measured - differ across portfolio companies. Isac explained: “Often it is one, two or three key variables that we consider to be the most important [...] For one company it might be to reduce CO2 emissions and for another one it may be to enhance financial inclusion among vulnerable groups in eastern Europe. So it’s very different and it has to be measured on completely different parameters”. Further, Eric stated: “We use different SDGs depending on what is relevant to the company’s operations. This is a bit fluffy but it is still useful to keep track of the relevant SDGs for each company”. To focus on what is most important also motivates the choice of environmental focus by some VC firms. Henric described: “It’s very simple, if you take the American wedding cake model you can map the different SDGs into the layers of the cake and if you remove the bottom layer the entire cake will fall [...] In the bottom layer you find all the climate SDGs and the reason for this is that if the temperature of the earth increases above 2 degrees, poverty, education and inclusion will all go to hell”.

4.2.3 The ecosystem's influence on sustainable investment practices

In several interviews sustainability was mentioned as a megatrend and hence, an investment area crucial to address. Eric, General Partner, explained: "The established VC companies have moved more towards sustainability and want to brand themselves as sustainable and green [...] most of them get that this is an interesting market to be in and since you want to create growth you have to show that you are green". However, a subject addressed by all respondents was the fact that VC firms are not acting in silos and thus that sustainability practices are influenced by the ecosystem in which they operate.

4.2.3.1 Investment thesis

The investment thesis differed among the interviewed funds, thus, a difference in to what extent sustainability issues were addressed was expected and confirmed by the interviews. Most of the traditional VC firms adopted a more exclusionary approach, for example Gabriella, Investment Associate, described: "I cannot say that we do anything actively, the most important thing for us at present is to completely avoid alternatives that have something to do with tobacco and gambling". However, there were also examples of traditional VC firms applying an inclusionary selection process, Felicia explained: "We are not an impact fund, we are a traditional VC fund. However, now when we raise a second fund we will have something we call an impact-awareness mandate, where we actively go out and look for companies which we believe are the next big winners but also have a positive impact". Moreover, the funds which had a specific investment mission (e.g., lowering CO_2 emissions) or classified themselves as impact investors naturally had a stricter investment thesis, Eric highlighted: "This fund wouldn't invest in a company that doesn't have a sustainable business model and strategy for what to accomplish, first and foremost for the climate, but also for the other aspects of sustainability".

4.2.3.2 Mobilization of resources

Several respondents stressed the importance of allocating enough resources to sustainability efforts, for example Josephine highlighted: “You need to have someone that is in charge and responsible for it [sustainability efforts], it’s not something you can do on the side as a hobby, it’s not a quick fix”. Further, the importance of having a unified understanding of what the VC firm aims to achieve was emphasized by Felicia: “We try to ensure that it’s in our DNA to work in this way. This is the part that most funds underestimate and that they never really get to, then it’s one or two people who lead the work and when they quit there is no one that keeps pushing the agenda”.

4.2.3.3. Market demand

The market demand for sustainable solutions has increased substantially the last couple of years. Felicia mentioned: “Something happened after the summer and suddenly every fund started to talk about ESG”. The respondents highlighted that this trend is driven by the end-consumer, who have become more aware and demand companies to take responsibility for their impact on the world. Gabriella explained that: “Customer awareness has never been this high, which results in companies having to drive this change [..] It starts with the consumers and then it transfers to the large organisations”. Another investor further highlighted: “I think there is a general sense of urgency in the wider population, and the more people ask for it the more it will help” (Josephine).

4.2.3.4 Limited partners

Several respondents emphasized that requirements opposed by the LPs is a powerful tool to achieve change: “Pressure from LPs is working magic [...] I think it’s interesting and sad at the same time because we focus on diversity and inclusion because our LPs ask for it, but at least they ask for it so we need to act” (Josephine). However, the current level of sustainability involvement from LPs differ. Some respondents felt a strong pressure from the LPs to address these questions, for example Eric stated: “A lot of capital comes from the EU and state funds, and their requirements on VC firms to follow-up and report on sustainability impact of investments has increased. It’s almost a precondition to be quite meticulous and live by it [the sustainability agenda that you have set up]”, whereas others note that, though the interest for sustainable investing exists, the knowledge among LPs is still low. Felicia highlighted: “It is mainly us who educate them. A few of our LPs say that ‘we want you to be good at ESG and all that’ but they don’t impose any requirements on us”.

4.2.3.5 Governmental interference and regulations

Laws regulating the market are mentioned as another factor having implications on the extent to which VC firms address sustainability. However, the experienced government interference differed between respondents. Some investors answered that regulations have a large impact on their operations, Anna explained: “Decisions from the EU have a large impact, especially within ‘green’ investments”. In contrast, Josephine highlighted: “So far I don’t really feel any government interference”. Most interviewees emphasized the need for regulations and the potential benefits it could bring, for example Carl argued: “The EU taxonomy will have an industry-wide impact, which is very good” and Josephine further claimed: “I think the next bucket would also be regulations. If there are rules and regulations then you are just going to have to obey by it”. Still, some respondents expressed a concern for the negative effects of a heavily regulated market: “I rather not see a super solid taxonomy that everyone has to comply with, because it will have a large impact on innovation” (Anna).

4.2.3.6 The VC community

Collaborating and discussing with other VC firms is mentioned as an attempt to overcome the general insecurity revolving around sustainability assessments. Josephine explained that: “An investor in London has initiated a VC community which tries to coordinate ESG efforts across VCs and they have bimonthly calls where everyone shares and discusses. The community is purely focused on exchanging knowledge and best practices around sustainability which I think is incredibly helpful [...] But then again it’s like a construction site - it’s a work in progress. I don’t think anyone has really figured out how to do this”.

4.2.4 Market dynamics

Dynamics in the market affect how VC investors reason about sustainable investments. An uncertainty regarding the relationship between sustainable investing and financial returns, and the risk of a “green bubble” was discussed in many interviews as barriers to sustainable investing.

4.2.4.1 Risk and return

One barrier to sustainable investing is a general uncertainty about what consequences it has on financial returns, for example Felicia highlighted: “Capitalism will drive the market and capitalism will always strive to maximize financial returns. Impact investing from a portfolio management perspective is: when you remove a company from a portfolio you minimize the opportunity to get a return. It’s as simple as that, and then the question is: do we believe that what is sustainable will generate the best financial returns?”. Hence, LPs have been hesitant to invest in funds profiling themselves as sustainable, Isac argued: “LPs say that ‘our mission is to earn money for pensioners so we cannot waive that’, and our clear response is that they won’t have to”**.** The connection between risk and return is also highlighted by Carl: “VC is a high-risk operation which means that you are supposed to expect a higher return”. While data supports the correlation between ESG and financial returns, there is not yet sufficient high quality data confirming the correlation between impact investing and financial returns. Felicia explained: “It is clear that companies working with ESG can be positively connected to financial returns, but I haven’t seen any reliable evidence on the connection between impact investing and financial returns. There we need more data to get the majority of the investors on board”.

4.2.4.2 A ‘green’ bubble

Several interviewees mentioned that the burst of the GreenTech bubble in early 2000’s has made investors cautious in the face of a new wave of sustainable investing. Carl described: “This sector has earlier had problems with delivering value due to the fact that it has longer time horizons and larger capital requirements. Political decisions are also affecting the sector, therefore you are very cautious and want to see positive results before investing". Still, he expressed a positive belief in that the market has matured: "What I believe is different from last time when Lehman crashed in 2008 is that the industry has gained an understanding that green technologies require a longer time horizon and for the first time I see that the financiers are on board". Josephine further stated that the market has changed: "I think that the challenge historically has been that a lot of sustainability tech was very hardware related and there was a first boom and bust in clean tech already in the 2000s and now we are really starting to see the new wave".

Moreover, with many public companies being traded at a high price the risk of a "green bubble" was highlighted during the interviews. As an example Eric discussed: "I believe that we are already in a green bubble and that you should be careful to count on that the stock market will be as interesting going forward. I believe that it will be a retracement for these types of companies, since many have a very high valuation". He further added that the overheated stock market has a spillover effect on the private market: "The market climate is very hot and has attracted a lot of private savers. This has diluted the valuations, which has a spillover effect on unlisted companies". Still several respondents believe they are able to see beyond the green bubble, for example Carl argued that: "If you look at companies one by one I believe that you are able to screen out those that are less exposed to a bubble".

5. Discussion

5.1 Towards a definition of a sustainable investment

In line with the findings in the literature review (e.g., Berry & Junkus, 2013; Brooks & Oikonomou), the empirical findings confirm that no universally accepted definition of a sustainable investment exists. While the literature proposes several definitions (e.g., Bocken, 2015; Madison and Shiell, 2021), weighting the dimensions of sustainability differently, our findings suggest that few VC investors have an established definition which they use. The perceived complexity of the concept was highlighted as a contributing factor to the difficulty in defining it. Thus, the respondents raised the importance of being clear on what (which) perspective(s) of sustainability one addresses in communication and discussions on the topic. Moreover, the empirical findings revealed that VC firms have either adopted a holistic view or a niche approach to sustainable investing. Among those adopting a holistic view, many emphasized a dual objective in doing good while receiving a satisfactory return on investment. VC firms focusing on a certain niche of sustainability most commonly addressed the environmental dimension with the motivation of it being the most urgent and hence important sustainability issue to address.

Though the VC firms have adopted different approaches to sustainable investing, two different overarching avenues were identified during the interviews. In line with the findings in the literature review (e.g., Antaruciuc et al., 2018; Bocken, 2015; Friede, Busch & Bassen 2015), the discussions on sustainable investing either emphasized *what* the companies do (i.e outcome of core business), *how* the companies operate – or both. However, in contrast to literature, which often describes sustainable investments at a conceptual level (e.g., Nofsinger & Varma, 2014), the interviewees focused more on the practical implications. More specifically, in discussions around sustainable investments, several respondents brought up the SDGs when talking about assessing what impact a company has whereas they highlighted ESG parameters (e.g., diversity and regulatory compliance) in discussions on the activities and structure of companies' operations.

Overall, the findings indicate that a strict definition of a sustainable investment may not be needed, however, a common understanding of the concept would be useful. What will differ is what VC investors choose to focus on, and in the end, resources should be allocated on activities that promote action. The importance of having a common language has been highlighted by practitioners (FMO, 2020; Isomer Capital, 2021; Impact Management Project), thus, our findings imply that by creating a shared understanding of sustainable investing, VC investors may be able to overcome the uncertainty and confusion that currently pertains to the discussions and communications around the topic. In turn, this may enable VC firms to communicate about sustainable investing in a more efficient manner. To conclude, the empirical findings support existing literature in terms of the lack of a universally accepted definition of sustainable investing. It also contrasts existing literature (e.g., Berry & Junkus, 2013) since our findings suggest that a common understanding may be more important than agreeing on a universally accepted definition.

5.2 Assessing sustainability impact of investment prospects and portfolio companies

Existing literature highlights that a general uncertainty about what to measure and how to do it permeates the sustainability assessment and reporting among investors (Berry & Junkus, 2013). The empirical findings support this claim and reveal that no standardized approach to assess sustainability impact of companies for VC firms exists – neither in the investment process nor among portfolio companies. As a result, the findings reveal that VC firms have adopted different approaches and many have developed their own frameworks. In the screening process, our findings suggest that traditional VC firms often pursue an exclusionary approach whereas impact and niche VC firms have gone beyond the inclusionary screening strategy and invest in companies that contribute to sustainable solutions. Moreover, the findings suggest that when assessing sustainability impact in portfolio companies, traditional and impact VC firms have adopted a holistic approach, whereas niche VC firms rather focus on measuring a specific sustainability dimension (e.g., CO2 emission equivalents). Thus, our findings support Trautwain's (2021) claim that the measuring method chosen is heavily dependent on the preference and objectives of the investor.

A key challenge in sustainability assessments is the fact that it entails both quantitative and qualitative components (Sala, Ciuffo, & Nijkamp, 2015). In addition to this, research has shown that a majority of existing methods does not give specific attention to the maturity and size of the organization (Trautwein, 2021). Our findings support this and contribute to literature by deepening the understanding of what challenges VC firms face when it comes to sustainability assessments. To begin with, the interviews reveal that existing universal frameworks and metrics (e.g., SASB) are not adapted to smaller growth companies – being too complex and time consuming to be relevant. Given the resource constraints of both VC firms and start-ups, our findings suggest that implementing such frameworks would impose a too heavy administrative burden both on the VC firms and their portfolio companies. Furthermore, the type of data available was brought forward during the interviews as a major challenge. Not only was the lack of historical data mentioned as a challenge but also the fact that much data is qualitative, thus making it difficult for VC firms to create comparable and meaningful metrics. Another issue highlighted during the interviews was the balancing act of requiring portfolio companies to measure and report on sustainability metrics (as a form of control action) and allowing them to focus on the core business. To mitigate the difficulties connected to assessing sustainability impact in early-stage investing, both prior literature and the empirical findings highlight the importance of materiality and having a simple approach (Trautwein, 2021). In sum, these findings indicate that VC firms face several challenges when it comes to sustainability assessments; the limited resources of both VC firms and the firms they invest in constitute a major barrier in turn pointing on the need for simple metrics.

Despite these challenges, our findings support existing literature arguing for the importance of having metrics to reach goals, communicate a common direction and benchmarking (Castús et al., 2007; Marr, 2012). Several respondents further highlight a wish to have standardized metrics in the VC industry but also acknowledged the challenges it comes with. Given that VC firms are industry-agnostic, the core activities of portfolio companies will differ substantially which makes it difficult to create and implement generic sustainability metrics. Nonetheless, choices made in the early stages of a business determine an important part of its sustainability impact (Bocken, 2015), hence implementing a number of metrics to track sustainability performance early on could help companies focus their resources on key activities that have material impact. In turn, this can make it easier for companies to scale up since external requirements on sustainability reporting increases as companies grow. Thus, in contrast to literature suggesting that the use of metrics may result in focus being put on improving numbers rather than the underlying situation (e.g., Emilian, 2000), the empirical findings indicate that by implementing some sustainability metrics, VC firms and their portfolio companies may be able to improve underlying activities as it (1) sheds attention on material aspects and (2) frees up resources which can be focused on value creating activities instead.

To conclude, our contribution to research is twofold: first we add the VC perspective on sustainability assessment (prior research has focused on other types of investors), next, we deepen the understanding of the specific challenges VC firms face in sustainability assessments (limited resources, knowledge constraint and lack of historical data). Overall our findings highlight the importance of measuring activities that have material impact to combat resource constraints and further indicate a need for a simple framework that can be used across industries and companies.

5.3 Factors affecting the extent to which venture capital firms address sustainability

Evident from the empirical findings is that the extent to which VC firms address sustainability is affected by the degree of internal and external pressure. However, the importance and influence of each stakeholder differs between the VC firms depending on the investment niche and structure of the fund.

5.3.1 Internal pressure

Earlier research highlights that the specific investment thesis of each VC firm will have implications for the companies chosen as investment objectives (Bocken, 2015). Our findings support earlier research and add to the current literature by providing a deeper understanding on how the investment thesis of VC firms impacts the sustainability strategy. The interviews highlight that the extent to which VC firms address sustainability could at least partially be explained by the chosen investment thesis. Generally, the empirical findings show that niche and impact VC firms have more proactive approaches, taking into account both *how* a company operates and *what* the company does, whereas the sustainability agenda in traditional VC firms is more focused on risk-avoidance and predominantly addresses *how* the companies operate. Building on this, our findings imply that VC firms incorporating sustainability into the investment thesis are likely to have a more extensive sustainability agenda compared to those who do not. Further, the importance of financial sustainability is highlighted by all respondents, additionally indicating that to ensure long-term commitment to sustainability ambitions they should be in lockstep with financial goals. Otherwise, there is a risk that the extent to which sustainability is addressed will differ depending on financial performance fluctuations.

Literature highlights that human capital plays an important role in driving the success of a VC firm (Da Rin, Hellmann & Puri, 2013). Moreover, experience and specialization of VC investors has been shown to have a positive correlation with firm performance and affect the level of active involvement in portfolio companies (Gompers, Kovner & Lerner, 2009; Bottazzi, Da Rin, & Hellmann, 2008). Our empirical findings contribute to literature by highlighting the importance of human capital in achieving sustainability goals. Evident from the interviews was that the VC firms which presented the most well-developed sustainability agendas all had one or several employees with a strong personal interest and knowledge in sustainability questions. Thus, indicating that personal values and interest in sustainability among the employees in a VC firm have an impact on the extent to which the fund addresses sustainability. Although employees with a strong personal drive for sustainability questions are valuable assets to initiate the sustainability ambition, having one or a few persons taking the lead might impose a risk that the sustainability initiatives will be discontinued if they leave the firm. Hence, our findings indicate that in order to ensure long-term commitment, sustainability practices need to be fully incorporated into the DNA of the VC firm.

The importance of having a strong brand has long been recognized by literature (e.g., Hoeffler & Keller, 2003). Extending this argument to our context, the empirical findings suggest that addressing sustainability can have a positive impact on VC firms' brand image and in turn help them attract both investors and promising start-ups. Several respondents mentioned that operating in a socially responsible way is especially important when raising money for new funds, since LPs' requirements are generally becoming more demanding in the area of sustainability. Moreover, having a positive brand image was highlighted to be a competitive advantage and important for attracting promising start-ups. As such, our findings indicate that VC firms addressing sustainability dimensions in their operations may experience additional benefits (easier to attract talent and investors), which could potentially have a positive impact on firm performance.

To conclude this section, the empirical findings suggest that investment thesis, interest and knowledge in sustainability related questions among VC professionals and brand implications all affect the extent to which sustainability is addressed by VC firms.

5.3.2 External pressure

The findings of our study highlight that VC firms are not acting in silos, rather the operations and performance is strongly affected by the surrounding ecosystem. Our findings add to earlier research conducted by Da Rin, Hellmann and Puri (2013), which explores how VC is affected by, and contributes to, the economy at large.

The increased market demand for sustainable investment is highlighted both in the empirical findings and literature (Losse & Geissedoefer, 2021). Several respondents mention consumer demand as a strong force driving the VC market in a more sustainable direction. However, it is also highlighted that the extensive market demand can result in unrealistic company valuations, thus increasing the risk of a green bubble. As the practice of sustainable investments in VC is fairly new and the industry is in constant transformation, research exploring the interrelationship is limited. Hence, our findings contribute to deepening the understanding on what impact market demand has in driving sustainable development.

Earlier research describes LPs to be inactive owners with limited liability (Da Rin, Hellmann, & Puri, 2013). Our findings contribute to the current literature by nuancing the role LPs can play; some respondents agreed on the view of LPs being inactive owners whereas others argued that LPs impose requirements on sustainability, which have implications on the investment strategy of the VC firm. It was explained during the interviews that the difference in LP interference is dependent on whether the LP is state-funded or not, and that state-funded LPs are generally more restricted by regulations imposed by the government. Moreover, the uncertainty about the relationship between sustainable investing and return is another plausible explanation to the relatively limited LP interference discussed during the interviews. Several respondents emphasized that LPs in general are risk-averse, thus requirements on VC firms to incorporate sustainability in the investment strategy will likely not be imposed until there is strong evidence confirming a positive correlation between sustainable investing and return.

As any other market actor, VC firms are obliged to follow the laws and regulations imposed by the government, thus government requirements are discussed in both earlier research and in the interviews as an external factor having implications on the extent to which VC firms address sustainability (Rin, Hellmann & Puri, 2013). The empirical findings reveal that there currently exists no law regulating the sustainability practices of VC firms, however, the EU taxonomy, which aims to create a list of environmentally sustainable economic activity, is mentioned as a recent example of regulation which is believed to have effects on the VC industry when enforced. The lack of common guidelines are highlighted during the interviews to be a contributing factor to the uncertainty among VC firms regarding how to act and what to focus on. Following, some suggest cooperation with other VC firms to mitigate the uncertainty pertaining to sustainable practises in VC. Further, the respondents express opposing views on whether government interference plays a positive or negative role in incentivizing sustainable investing. While some respondents highlight the importance and effectiveness of regulations in driving change, others are concerned that extensive government interference might constrain the VC firms in their operations and increase market complexity.

In conclusion, our findings highlight consumers as a strong factor driving VC firms to address sustainability dimensions. Moreover, the findings indicate that LPs can influence the extent to which VC firms address sustainability. However, the level of interference differs, which could potentially be explained by the type of LP. Additionally, our findings add to existing literature (Rin, Hellmann & Puri, 2013) by highlighting that VC networks are influential also when it comes to sustainability practices. Lastly, the findings indicate that there exists no consensus regarding if government interference helps or constrains VC firms in their sustainability work.

6. Conclusion

The purpose of this study was to (1) explore how sustainability dimensions are valued and addressed by VC firms, and (2) investigate what barriers and facilitators that exist affecting the extent to which sustainability is addressed by VC firms. Three research questions were used as guidance to achieve the purpose:

RQ1*: How do VC firms define a sustainable investment?*

The findings of our study highlighted that there exists no universally accepted definition of what constitutes a sustainable investment, rather it differed depending on the investment thesis and type of VC firm. Nevertheless, we found that in order to promote sustainability within the VC industry it may be more important to reach a common understanding of how to approach sustainability than agreeing on a universally accepted definition.

RQ2: *How do VC firms assess sustainability impact?*

The literature review and empirical findings revealed that the VC industry lacks a standardized approach for assessing sustainability impact of portfolio companies and investment objectives.

As a result, many VC firms have developed their own frameworks to measure sustainability impact. In general, VC firms either adopted a holistic approach or niche approach (focusing on a specific sustainability dimension) to sustainability assessment, and the importance of measuring activities that have material impact was emphasized.

RQ3: *Which factors affect if and to what extent VC firms address sustainability in the investment process and development of portfolio companies*

Both internal and external factors were found to affect the extent to which VC firms address sustainability. The ones mentioned to be the most influential were investment thesis, human capital, brand building, market demand, LPs, VC community and market history. Nonetheless, the perceived impact of each factor on the sustainability practice differed between VC firms.

To conclude, our theoretical contribution is twofold: (1) we clarify the role VC has in driving sustainable growth and (2) we deepen the understanding of enablers and barriers in the VC ecosystem that help facilitate or hinder VC firms in their sustainability efforts.

6.1 Managerial implications

Based on our findings, we suggest that the sustainability assessment of investment objectives and portfolio companies could be divided into two parts: *what* a company does and *how* a company operates (See **Figure 4.** for a framework proposed for sustainability assessment in the VC industry). To assess *what* impact the outcome of the core business has on the world (e.g., lives saved, CO2-emission reduced, improved air quality), the portfolio company could benefit from choosing one or two metrics related to the core activities to track. As such, this dimension of sustainability will be firm-specific and thus not comparable across firms. Instead, it would allow practitioners to focus on measuring what is considered to be most material, to then be followed-up and benchmarked against historical performance. This may help start-ups mobilize its resources and prioritize actions that make the company grow in a sustainable manner. *How*, on the other hand, concerns the activities and structure of a company's operations and is related to a greater extent to the concept of ESG investing. Hence, to measure how sustainable the operations of a company are (e.g., diversity, energy use, regulatory compliance) we suggest that VC firms could implement a set of standardized metrics to track across portfolio companies. This would enable comparison both within the portfolio and across VC firms. In conclusion, having a more standardized yet simple approach to assessing sustainability in VC may contribute to reducing the uncertainty currently prevailing in sustainability practices and make it less time-consuming to address. Further, approaching sustainability assessment as proposed can potentially bring clarity for both researchers and practitioners in discussions on sustainable VC and sustainable investments while also making it easier to mobilize limited resources and measurement efforts.

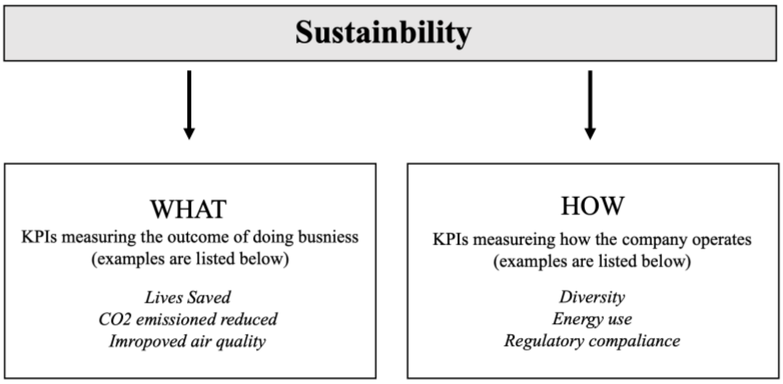

Figure 4. *A framework proposed for assessing sustainability in the VC industry (Johansson & Serner 2021)*

6.2 Limitations and further research

Some limitations can be raised with regards to the structure, content and sample of this study. Firstly, as the study is based on an interpretivist approach the presentation of the empirics is based on the ability to analyze and present the findings in a fair and unbiased way. Secondly, the empirical findings are structured and discussed according to four key themes, which covers the concepts most frequently mentioned during the interviews. However, this does not necessarily mean that these are the most decisive factors and there can potentially exist additional aspects having a large impact on the extent to which VC firms address sustainability. Lastly, the sample of our study consists of only one person from each VC firm thus it imposes a risk of answers being biased and based on personal opinions rather than representing the firm view. However, as the purpose of this study was to gain a broad understanding of how VC firms address sustainability, it was deemed to be more important to have a broad sample in terms of the number of firms being represented. Still, the sample of our study consists of a relatively limited number of VC firms in Sweden and may therefore not be representative of how VC firms in general address sustainability.

The purpose of this study was not to present generalized conclusions, rather it aimed to provide a qualitative understanding on how the VC industry addresses sustainability. To increase transferability further qualitative and quantitative research investigating the subject from the perspective of other market participants is needed. By only interviewing VC firms, the study provides a unilateral perspective on sustainability. Hence, to gain a more complete understanding about which factors that enable or hinder sustainable development similar studies instead interviewing LPs and/or portfolio companies is needed. Moreover, a quantitative study investigating the relationship between financial performance and the extent to which VC firms address sustainability aspects would further deepen the understanding and reduce uncertainty prevailing the current discussion on sustainability. However, at present it does not exist sufficient high quality data to conduct such a study.

Reference list

Amornsiripanitch, N., Gompers, P. & Xuan, Y. (2019) More than Money: Venture Capitalists on Boards. *The Journal of Law, Economics & Organization, 35*(3).

Antarciuc, E., Zhu Q, Almarri J, Zhao S, Feng Y, Agyemang M., (2018). Sustainable Venture Capital Investments: An Enabler Investigation. *Sustainability, 10*(4).

Barber, B. M., Morse, A., & Yasuda, A. (2021). Impact investing. *Journal of Financial Economics, 139*(1).

Berry, T., Junkus, J., (2013). Socially responsible investing: an investor perspective. *Journal of Business Ethics. 112*(4).

Blank, S. (2013). Why the Lean Start-Up Changes Everything. *Harvard Business Review.*

Bocken, N.M.P., (2015). Sustainable venture capital a catalyst for sustainable start-up success? *Journal of Cleaner Production, 108.*

Braun, V. & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2).

Brooks, C. & Oikonomou, I. (2018). The effects of environmental, social and governance disclosures and performance on firm value: A review of the literature in accounting and finance. *The British Accounting Review*. *50*(1).

Bryman A. & Bell, E. (2011). *Business Research Methods* (3rd ed), Oxford University Press.

Bygrave, W. D., Lange, J., Marram, E., Brown, D., & Marquis, J. (2014). No financial cleanup: A study of venture capital returns on cleantech IPOs. *Rochester.*
Bottazzi, L., Da Rin, M., & Hellmann, T. (2008). Who are the active investors?: Evidence from venture capital. *Journal of Financial Economics, 89*(3)

Catasús, B., Ersson, S., Gröjer, J. and Yang Wallentin, F. (2007). What gets measured gets … on indicating, mobilizing and acting, *Accounting, Auditing & Accountability Journal*, *20*(4).

Cendrowski, H., Martin, J.P., Petro, L.W. & Wadecki, A.A. (2012). *Private Equity: History, Governance and Operations* (2 edn). Wiley Financial.

Cohen, B., & Winn, M. (2007). Market imperfections, opportunity and sustainable entrepreneurship. *Journal of Business Venturing, 22.*

Croce, A., Martí, J., & Murtinu, S. (2013). The impact of venture capital on the productivity growth of european entrepreneurial firms: 'Screening' or 'value added' effect? *Journal of Business Venturing, 28*(4).

Cumming, D., Henriques, I., & Sadorsky, P. (2016). 'Cleantech' venture capital around the world. *International Review of Financial Analysis, 44*.

Cortez, M.C., Silva, F., Areal, N., (2012). Socially responsible investing in the global market: the performance of US and European funds. *International Journal of Finance & Economics*, *17*(3).

Da Rin, M., Hellmann, T. & Puri, M. (2013) A survey of venture capital research. *Handbook of the Economics of Finance.*

Dean, T.J. & McMullen, J.S. (2007). Toward a theory of sustainable entrepreneurship: reducing environmental degradation through entrepreneurial action. *Journal of Business Venturing, 22*.

Demarzo, P. & Berk, J. (2017). *Corporate Finance* (4 edn). Pearson Education.

Elkington, J.B., (1997). *Cannibals with Forks: the Triple Bottom Line of 21st Century Business*. Capstone Publishing.

Emiliani, M.L. (2000). The false promise of 'what gets measured gets managed, *Management Decision*, 38(9).

EY (2019). *Profit and purpose: impact investing goes mainstream.* https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/private-equity/ey-profit-and-purpose-impact-investing-goes-mainstream.pdf

Financial Times (2018). BlackRock stakes claim on 'sustainable investing' revolution. https://www.ft.com/content/f66b2a9e-d53d-11e8-a854-33d6f82e62f8. (Retrieved 08-05-2021)

Financial Times (2021). Stockholm's start-up buzz attracts global VC attention. https://www.ft.com/content/94216d1c-dde7-4246-87c7-9e5efa6c946e (Retrieved 01-05-2021)

Flick, U. (2009). *Introducing Research Methodology: A Beginner's Guide to Doing a Research Project*. SAGE Publications.

FMO (2020). *Responsible Venture Capital. Integrating environmental and social approaches in early-stage investing.* https://www.fmo.nl/responsible-venture-capital

Friede, G., Busch, T. & Bassen, A., (2015). ESG and financial performance: Aggregated evidence from more than 2000 empirical studies. *Journal of Sustainable Finance & Investment*, *5*(4).

Gaddy, B., Sivaram, V., Jones, T., & Wayman, L. (2016). Venture capital and cleantech: The wrong model for energy innovation. *Rochester.*

Global Impact Investing Network (GIIN). https://thegiin.org/impact-investing/ (Retrieved 13-05-2021)

Global Sustainable Investment Alliance (GSIA) (2018). *Global Sustainable Investment Review 2018.* http://www.gsi-alliance.org/trends-report-2018/

Gompers, P., Kovner, A. & Lerner, J. (2009). Specialization and success: evidence from venture capital. *Journal of economics and Management Strategy, 18*(3).

Hall, J., Daneke, J. & Lenox, M., (2010). Sustainable development and entrepreneurship: past contributions and future directions. *Journal of Business Venturing*, *25*.

Hochberg, Y., Ljungqvist, A. & Lu, Y. (2007). Who you know matters: venture capital networks and investment performance. *The Journal of Finance*, *62*(1).

Hockerts, K., Wüstenhagen, R., (2010). Greening Goliaths versus emerging Davids d theorizing about the role of incumbents and new entrants in sustainable entrepreneurship. *Journal of Business Venturing*, *25*.

Hoeffler, S. & Keller, L. K. (2003). The marketing advantages of strong brands. *Brand Management, 10*(6).

Isomer Capital (2021). *Sustainability in European VC. A Limited Partner's view.* https://isomercapital.com/wp-content/uploads/2021/04/Sustainability-Report.pdf

Jeong J, Kim J, Son H, Nam D-i. (2020). The Role of Venture Capital Investment in Startups' Sustainable Growth and Performance: Focusing on Absorptive Capacity and Venture Capitalists' Reputation". *Sustainability*. *12*(8).

Jansson, M. & Biel, A. (2011). Motives to engage in sustainable investment: a comparison between institutional and private investors. *Sustainable Development*, *19*(2).

Johnson, M.P. & Schaltegger S. (2020). Entrepreneurship for Sustainable Development: A Review and Multilevel Causal Mechanism Framework. *Entrepreneurship Theory and Practice*, *44*(6).

Kaiser, L. (2020). ESG Integration: Value, Growth and Momentum. *Journal of Asset Management, 21*.

Kaplan, S. & Strömberg, P. (2001). Venture Capitals As Principals: Contracting, Screening, and Monitoring. *American Economic Review, 91*(2).

Keuschnigg, C. (2004). Venture capital backed growth. *Journal of Economic Growth, 9*(2).

Klewitz, J., & Hansen, E. G. (2014). Sustainability-oriented innovation of SMEs: A systematic review. *Journal of Cleaner Production*, *65*.

Leete, S., Xu, J. & Wheeler, D. (2013). Investment barriers and incentives for marine renewable energy in the UK: An analysis of investor preferences. *Energy Policy, 60*.

Losse, M., & Geissdoerfer, M. (2021). Mapping socially responsible investing: A bibliometric and citation network analysis. *Journal of Cleaner Production, 296*.

Madison, N. & Schiehll, E. (2021). The Effect of Financial Materiality on ESG Performance Assessment. *Sustainability*, *13*(7).

Manigart, S. & Sapienza, H. (2008). Venture Capital and growth. *The Blackwell Handbook of Entrepreneurship.*

Marcus, A., Malen, J., & Ellis, S. (2013). The promise and pitfalls of venture capital as an asset class for clean energy investment: Research questions for organization and natural environment scholars. *Organization & Environment, 26*(1).

Marr, B. (2012). *Key Performance Indicators (KPI). The 75 measures every manager needs to know.* Pearson

Nofsinger J. & Varma A. (2014). Socially responsible funds and market crises. *Journal of Banking and Finance*, *48*.

Picken, J.C. (2017). From startup to scalable enterprise: laying the foundation. *Business Horizons*, *60*(5).

Porter, M., Kramer, M., (2011). The Big Idea: Creating Shared Value. How to Reinvent Capitalism – and Unleash a Wave of Innovation and Growth. *Harvard Business Review*, *89*.

Proksch, D., Stranz, W., Röhr, N., Ernst, C., Pinkwart, A., & Schefczyk, M. (2016). Value-adding activities of venture capital companies: a content analysis of investor's original documents in Germany. *Venture Capital*, *19*(3).

Rowley, J. (2012). Conducting research interviews, *Management Research Review*, *35*.

Sala, S., Ciuffo, B., & Nijkamp, P. (2015) A systemic framework for sustainability assessment. Ecological Economics, *119*.

Saunders, M. Lewis, P. & Thornhill, A. (2000) *Research Methods for Business Students* (2nd ed.), Financial Times Prentice Hall.

Schaltegger, S. & Wagner, M. (2011). Sustainable entrepreneurship and sustainability innovation: categories and interactions. *Business Strategy And the Environment, 20*.

Sustainability Development Report (2020). The sustainable development goals and Covid-19. https://s3.amazonaws.com/sustainabledevelopment.report/2020/2020_sustainable_development_report.pdf

Scott, D. (2003). *Wall Street Words: An A to Z Guide to Investment Terms for Today's Investor*. https://financial-dictionary.thefreedictionary.com/angel+investor (Retrieved 14-05-2021)

Silverman, D. (2010). *Doing Qualitative Research* (3 edn). SAGE Publications.

Skala, A. (2019). *Digital Startups in Transition Economies: Challenges for Management,* Entrepreneurship and Education Palgrave Macmillan.

Spender, J.-C., Corvello, V., Grimaldi, M. & Rippa, P. (2017). Startups and open innovation: a review of the literature, *European Journal of Innovation Management*, *20*(1).

Taylor, S.S., Fisher, D. & Dufresne, R.L. (2002). The aesthetics of management storytelling: a key to organizational learning. *Management Learning*, *33*(3).

Trautwein, C. (2020). Sustainability impact assessment of start-ups – Key insights on relevant assessment challenges and approaches based on an inclusive, systematic literature review. *Journal of Cleaner Production, 281*.

United Nations Development Programme (2019) “Corporate, investment leaders review SDG Impact plans”. https://www.undp.org/stories/corporate-investment-leaders-review-sdg-impact-plans

Wickert, C. (2016). “Political” corporate social responsibility in small- and medium-sized enterprises: a conceptual framework *Business & Society*, *55*(6).

World Commission on Environment and Development (WECD) (1987). Our Common Future. *Oxford University Press*.

Xian, H., (2008). Lost in translation? Language, culture and the roles of translator in cross-cultural management research. *Qualitative Research in Organizations and Management: An International Journal*, *3*(3).

Appendix

Appendix 1. Interview participants

Pre-study Participants

Name	Role	Gender	Date	Time	Place
Respondent 1	Researcher	Female	2021-02-21	31:00	Digital
Respondent 2	Senior Sustainability Expert	Female	2021-02-17	29:00	Digital
Respondent 3	Analyst	Male	2021-02-22	32:00	Digital
Respondent 4	Investment Manager	Male	2021-02-26	39:00	Digital
Respondent 5	Researcher	Male	2021-03-02	32:00	Digital
Average	33:00				

Main study participants

Name	Role	Company	Gender	Date	Time	Place
Anna	Investment Manager	Company A	Female	2021-02-25	52:00	Digital
Beatrice	CEO/Partner	Company B	Female	2021-02-25	35:00	Digital
Carl	Head of Greentech	Company C	Male	2021-03-01	38:00	Digital
Danielle	Investment Director & Head of Sustainability	Company D	Female	2021-03-02	40:00	Digital
Eric	General Partner	Company E	Male	2021-03-08	42:00	Digital
Felicia	Investment Associate	Company F	Female	2021-03-09	43:00	Digital
Gaberiella	Principle	Company G	Female	2021-03-09	35:00	Digital
Henric	General Partner	Company H	Male	2021-03-11	44:00	Digital
Isac	General Partner & Chair of Investment Committee	Company I	Male	2021-03-15	46:00	Digital
Josephine	Investment Manager	Company J	Female	2021-03-23	29:00	Digital
Average		40 Min				

Appendix 2. Interview guide

Ethical considerations

1. Your participation in the study is completely voluntary.
2. As a participant, you are allowed to terminate the interview at all times, without giving an explanation. Your answers until then will not be used in the study unless explicit approval is given.
3. You are completely anonymous, and we will not disclose to anyone who participated in this study.
4. Although anonymous, any citations used from this interview can be sent to you on request for approval before this thesis is published.
5. Do we have your approval to record this interview to be able to transcribe it later?
6. Do you have any questions before we start?

Introduction

- Tell us about your role.
- Walk us through an investment process from start to finish.
- What is your company's investment strategy?
    - What type of companies do you invest in?
    - How do you work with your portfolio companies?
    - What is the exit strategy (time horizon)?

Sustainability

- How does your company define a sustainable investment?
- How do you work with sustainability in the screening of a potential investment objective and in your portfolio companies?
    - Do you invest in companies that already have a sustainable business model or companies that have the potential to become sustainable?

    - You can either work to make the actual portfolio company more sustainable or work with making the company's business model more sustainable. Would you say that you work more with one part, and in that case how and why?
    - What resources within sustainability do you have?
- What impact do sustainability aspects have on the investment decision?

Measurability

- How do you measure sustainability aspects when analyzing investment prospects?
- How do you measure and control the sustainable impact of your portfolio companies?
- Do any global metrics to measure sustainability exist? What do you use?
- How do you report your portfolio companies' sustainability performance to your stakeholders?

Ecosystem

- What role does the CEO play in how you work with sustainability?
- What requirements do your investors have on you?
- How do government decisions affect your work?

Appendix 3. Consent form

Consent to participation in student's survey / interview

The student's project. As an integral part of the educational program at the Stockholm School of Economics, enrolled students complete an individual thesis. This work is sometimes based upon surveys and interviews connected to the subject. Participation is naturally entirely voluntary, and this text is intended to provide you with necessary information about that may concern your participation in the study or interview. You can at any time withdraw your consent and your data will thereafter be permanently erased.

Confidentiality. Anything you say or state in the survey or to the interviewers will be held strictly confidential and will only be made available to supervisors, tutors and the course management team.

Secured storage of data. All data will be stored and processed safely by the SSE and will be permanently deleted when the projected is completed.

No personal data will be published. The thesis written by the students will not contain any information that may identify you as participant to the survey or interview subject.

Your rights under GDPR. You are welcome to visit https://www.hhs.se/en/about-us/data-protection/ in order read more and obtain information on your rights related to personal data.

Project title Sustainability within VC	Year and semester 2021 VT6
Aim of the study How do VC-companies value sustainability aspects	
Students responsible for the study or interview Anna Serner and Nora Johansson	
Supervisors and department at SSE Sara Melén at Dep. of Marketing and Strategy	Supervisor e-mail address Sara.Melen@hhs.se
Type of personal data about you to be processed Current role and company name (will be anonymised in the thesis)	

I have taken part of the information provided above and consent to take part in this study:

Signature Name	Place and date

Stockholm School of Economics • Sveavägen 65 • P.O.Box 6501 • SE-113 83 Stockholm, Sweden • Phone +46 8 736 90 00 • www.hhs.se