Survival Challenges of Environmental Entrepreneurs

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Abstract

Environmental entrepreneurs are considered to be important drivers for an environmentally sustainable development. As other entrepreneurs, they face survival challenges while operating their businesses. Due to the increased importance of environmental entrepreneurs in counteracting environmental issues we argue that it is necessary to gain an understanding of their specific challenges of survival.

In this thesis, we build theory based on environmental venture cases located in Sweden. We provide an extensive overview of the current literature and contribute by identifying an institutional dimension being of high relevance in this field.

Our findings are of particular interest for policy makers, public institutions, environmental entrepreneurs and their advisors. Additionally, we provide further necessary access to this relatively new research field and suggest future research directions.
Acknowledgements

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1. Introduction

This chapter provides an overall introduction to our research topic. By giving background information we aim to create a context for this thesis. Further, we discuss the problem in this research field that we have identified as well as the need for conducting a study in this area. At last, the overall purpose of this thesis is outlined.

1.1 Background

In August 2017, the humanity’s resource consumption officially exceeded the earth’s natural resource production capabilities. As a result, mankind is utilizing an amount of resources which cannot be reproduced by one planet alone. This is accompanied by a long list of problems as e.g. the highest level of carbon dioxide in our atmosphere in 800,000 years or oceans being 26% more acid than before the industrial revolution (Perrigo, 2017; Plummer, McGoogan, 2017). At least since the World Commission on Environment and Development (WCED) defined the term of sustainable development and put emphasis on its high relevance, it has become an unavoidable topic in today’s business context. Nowadays, it is human mankind which is considered to be the main driver of global environmental changes resulting in a variety of environmental problems as e.g. a growing resource scarcity and global warming (Steffen, Richardson, Rockström et al., 2015). This development is expected to continue due to an excessive deforestation, the destruction and loss of biodiversity, air pollution, over-consumption of fresh water and various other forms of human caused activities negatively impacting the environment (Cohen, Winn, 2007). Dean & McMullen (2007) hereby greatly hold the era of industrialization and its business and manufacturing practices responsible which, until today, diminish the sustainability of our planet’s economic systems.

According to Sumathi, Akash & Anuradha (2014) there is a greater interest by consumers in greener products and services as well as an increased commitment by producers to offer these. In this context, it is not only the established firms which are expected to take the lead in innovating and providing more sustainable products and solutions. To a greater extent the role of entrepreneurship has received a growing attention as well as its potential to contribute innovative solutions to environmental problems (Hall, Daneke, Lenox, 2010; Hörisch, Kollat, Brieger, 2017). Moreover, advocates of environmental entrepreneurship as the World Wide Fund for Nature (formally World Wildlife Fund) (Ghani-Eneland, Renner, 2009) argue that environmental entrepreneurs not only create positive environmental impacts with their businesses but simultaneously drive economic growth and create jobs, further supporting its relevance. Consequently, an increased awareness and interest as well as the overall need of a greater focus on environmentally-focused sustainability has attracted the attention of various scholars and practitioners. Additionally, authors as Allen & Malin (2008) and Gast et al.
(2017) emphasize the need for more environmental entrepreneurs to address and counteract environmental challenges of today’s and future generations.

As a result, it becomes evident that the role of environmental entrepreneurship is experiencing an increasing importance and a call for its positive development as well as its resulting positive outcomes for the environment are getting louder.

1.2 Problem Discussion

Environmental issues and global sustainability disputes have led to an increasing awareness of environmental entrepreneurship as phenomenon, research area and an important driver in finding solutions to environmental issues (Cohen, Winn, 2007). Further, entrepreneurs are generally more confronted with social and environmental challenges while meeting stakeholders’ expectations to create environmental, economic and social values simultaneously (Urban, Nikolov, 2013). As a consequence, there is an increasing political debate for environmental entrepreneurial initiatives in order to tackle today’s environmental problems (Dyllick, Hockerts, 2002; Fellnhofer, Kraus, Bouncken, 2014).

In 2010, Hall et al. pointed out the need for further research regarding the differences between traditional and environmentally-oriented entrepreneurs, especially in terms of challenges and constraints that entrepreneurs face due to their environmental focus. Until today, little research exists on the challenges which are specific for environmental entrepreneurs (Gast et al, 2017). Various authors as Huang & Brown (1999), Yalcin & Kapu (2008) and Lussier & Pfeifer (2000) have highlighted the necessity to understand the problems of environmental ventures and their owners as these crucially affect their survival. Despite this highlighted importance of studying the challenges of survival of environmental entrepreneurs, the existing literature focusing on these specifically is still in its very infancy. Indeed, our literature review revealed that no single article exists which focuses exclusively on the challenges specific to environmental entrepreneurs. We believe it is necessary to close these knowledge gaps in order to identify where environmental entrepreneurs require support to increase the survival rate of businesses that follow a greater environmental purpose. With a rising number of environmentally-focused ventures all around the world in response to severe environmental problems, it has become inevitable to ensure a support for a success and survival of these ventures, especially when considering that 90 percent of all startups would fail (Forbes, 2015). By investigating the survival challenges of environmental entrepreneurs, we hope to provide the necessary insights for policy makers as well as public institutions to enable a support and positive development of environmental entrepreneurship.

In order to contribute to this debate and for policy-makers to be able to create the most effective initiatives and policies we argue that it is essential to obtain further knowledge in this field. By reviewing the current state of literature on environmental entrepreneurship as well as the challenges of entrepreneurs, specifically environmental entrepreneurs, we aim to provide an overview on the status quo on research in this field and to create a theoretical
framework for this thesis. In addition to this, we apply a qualitative research method by adopting an explorative research approach on the challenges of survival of environmental entrepreneurs, aspiring to contribute valuable insights to this field.

1.3 Purpose

Many authors highlight the relevance of environmental entrepreneurship and its role in counteracting environmental issues the world is facing today and within the future. Further, they call for an expansion of literature in this field, the merging of a currently fragmented terminology as well as the provision of insights based on qualitative research. We would like to respond to this call and thereby answer the following research question:

| What specific challenges of survival do environmental entrepreneurs experience while operating their businesses? |

In course of answering this, we aim to close these research field gaps and provide insights for policy makers and public institutions regarding which challenges of survival environmental entrepreneurs face and to spot the starting points for creating counteracting measures to achieve an increase of the survival rate of environmentally-focused ventures. Due to the relative newness and fragmentation of the research on environmental entrepreneurship, this exploratory thesis aims to provide a foundation for future research, a point of departure for new strands of research into the field of environmental entrepreneurship.
2. Theoretical Framework

This chapter provides a contextualization and outlines the theoretical framework which emerged during the process of data analysis. After defining relevant key terms for this study and localizing the concept of environmental entrepreneurship within the research field of sustainable entrepreneurship, we summarize our findings regarding the challenges of environmental entrepreneurs. Finally, we link the challenges issue to the role of institutions and policies in positively influencing the development of environmental entrepreneurship in order to create the theoretical perspective for examining our research subject.

2.1 Environmental Entrepreneurship

Environmental entrepreneurship represents a special kind of entrepreneurship. In the following section, we define key terms and point out a terminology issue that we have come across while reviewing the literature. Further, we localize environmental entrepreneurship as a sub-theme of sustainable entrepreneurship and provide a definition which will be applied throughout the thesis.

2.1.1 Entrepreneurship Definition

In today’s understanding, entrepreneurship is perceived as the process of discovering, creating and exploiting opportunities, assigning entrepreneurial opportunities a fundamental role within the entrepreneurship research field (Venkataraman, 1997; Carsrud, Brännback, 2007). This is based on Schumpeter’s definition who introduced the innovation aspect to its concept and defined entrepreneurs as innovators who use a process of changing the status quo of existing products and services in order to establish new ones (Schumpeter, 1934; Sharma et al., 2013). In order to achieve this, it is argued that a proactivity, an innovation as well as a risk-taking approach are required (Runyan et al., 2008; Moroz, Hindle, 2012). Hereby it needs to be highlighted that an entrepreneurial approach is not limited to the establishment of new ventures but can also be applied to already established ventures (Habbershon et al., 2010). As a result, entrepreneurship is considered to be able to lead to different outcomes as an enhanced performance, the creation of new products or services, strategic renewals, the establishment of more efficient and effective processes, and even the construction of new rules and the development of new markets and beliefs (Chiasson, Saunders, 2005).

2.1.2 Sustainable Development Definition

Various authors put emphasis on a common ground between entrepreneurship and sustainability since both would require innovation as well as the combination of existing resources. Consequently, they consider entrepreneurship as an essential driver for sustainable development (Harms et al, 2009; Grece, De Jong, 2014). For several decades, there has been
a rising awareness for sustainable development, mainly due to concerns about environmental risks which have emerged to a public call for preventing and counteracting measures. Several authors as e.g. Chick (2008) see business activities as one of the main reasons for environmental discontinuities as air pollution and climate change. The term sustainability relates to the interplay of individuals and how they should enact towards nature and society in order to show a responsible behavior for other present individuals and future generations (Baumgartner, Quaas, 2009; Portney, 2015). The Brundtland Commission, formerly known as the World Commission on Environment and Development, has defined sustainable development as “the development that meets the needs of the present without compromising the ability of the future generations to meet their own needs” (UN Brundtland Report, 1987, p. 43) which is generally accepted until today. This definition is based on the assumption that natural systems and its resources are limited, making it necessary to prioritize the utilization of renewable resources as well as the reduction and recycling of resources which are non-renewable. Further, its foundation rests on the three different pillars of society, economy and ecology, making it an overarching topic affecting multiple areas.

Hall, Daneke & Lenox (2010) strike out the issue of the earth’s current resource base being insufficient to enable developing countries to evolve as the first world used to do. Assuming that the current need of an additional planet earth would be required and the current rate of economic growth needs to be reduced dramatically, the topic of sustainable development has gathered an increased attention by academics and practitioners.

2.1.3 Terminology Issue

Before defining the term of environmental entrepreneurship and discussing our findings from the literature, we would like to point out an issue we have come across and which has also been criticized by different authors. The literature on entrepreneurship in connection with ecological sustainability is considered relatively young. However, reflecting on the emergence and attention towards this topic, it is seen as an issue that there is no term for this concept which is generally agreed on (Schalteger, Wagner, 2011; Rodgers, 2010; Nacu, Avasilcăi, 2014, Gast, Gundolf, Cesinger, 2017). Hereby, Holt (2010) lists terms as “ecopreneurship” (Schaper, 2002; Schaltegger, 2002), “green entrepreneurship” (Berle, 1991; Schaper, 2002), “sustainable entrepreneurship” (Masurel, 2007), “eco-entrepreneurship” (Randjelovic et al, 2003) and “enviropreneurship” (Menon, Menon, 1997). Reviewing these articles, it is striking that some authors (e.g. Schaper, 2002) use different terms as “green entrepreneurship”, “ecopreneurship” and “environmental entrepreneurship” synonymously which underlines the problematic of a missing common terminology in this field. The following table portrays a selection of terminologies and their definitions used by researchers in this field.
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecopreneurship</td>
<td>“The term ‘ecopreneurship’ is a combination of two words, ‘ecological’ (‘eco’) and ‘entrepreneurship’. […] Ecopreneurship is characterised by some fundamental aspects of entrepreneurial activities that are oriented less towards management systems or technical procedures and focused more on the personal initiative and skills of the entrepreneurial person or team to realise market success with environmental innovations.” (Schaltegger, 2002, p. 47)</td>
</tr>
<tr>
<td>Green Entrepreneurship</td>
<td>“The adoption of environmentally responsible business practices can, conceivably, open up an additional range of opportunities for entrepreneurs. The move to a sustainable business framework provides numerous niches that enterprising individuals and firms can successfully identify and service. […] green entrepreneurship […] has the potential to be a major force in the overall transition to a more sustainable business paradigm.” (Schaper, 2002, p. 27) “Green entrepreneurs exploit the opportunities that are inherent in environmentally relevant market failures.” (Demirel, Cher Li, Rentocchini, Tamvada, 2017, p. 2).</td>
</tr>
<tr>
<td>Eco-Entrepreneurship</td>
<td>“[Eco-entrepreneurs are] entrepreneurs who are keen to commercialize their eco-innovative product or service.” (Ranjelovic et al., 2003, p. 242)</td>
</tr>
<tr>
<td>Enviropreneurship</td>
<td>“Thus, the themes differentiating [enviropreneurship] […] are that (I) it adopts the perspective of an innovation and technology solution rather than one of a legal or public pressure solution, (2) it adopts an entrepreneurial philosophy or orientation, and (3) it represents a confluence of social performance, environmental, and economic objectives.” (Menon, Menon, 1997, p. 54)</td>
</tr>
<tr>
<td>Environmental Entrepreneurship</td>
<td>“[…] a theory of environmental entrepreneurship moves beyond the business/environment dichotomy and re-casts market forces as a solution to environmental degradation. The entrepreneurial process is uniquely suited to address sustainability concerns because it can address the root issues of environmental issues in a manner other solutions cannot.” (Lenox, York, 2011, p. 8)</td>
</tr>
</tbody>
</table>

Table 1: Selection of environmentally-focused entrepreneurship definitions

It becomes evident that all of these terms describe entrepreneurs as well as business practices which follow sustainable and environmental goals being deeply rooted in their business approach and aspired outcome. In regards with the terminology we see two problems at this stage. Firstly, a missing agreement on a common term for this concept leads to the different
terms being used synonymously and is likely to create an increased confusion. A larger part of the reviewed articles within this thesis used the term of “sustainable entrepreneurship”. However, as also outlined at a later stage of this study, sustainable entrepreneurship entails the social, economic as well as environmental aspect. As we focus on the environmental orientation of entrepreneurship, we utilize the term “environmental entrepreneurship” for the purpose of clarity in the further course of this thesis. At the same time, in line with many other authors (e.g. Demirel et al., 2017), we call for a unification of the terminology usage in order to erase this issue for a more efficient future development of this research field.

Secondly, reviewing the different definitions, it appears that some authors (e.g. Menon, Menon, 1997) set the focus not only on environmental but also social and economic objectives while other definitions only mention environmental goals. However, the focus on all three of these objectives appears to be rather in line with the concept of sustainable entrepreneurship. In order to provide the definition of environmental entrepreneurship which we use in the course of this thesis, we first position the concept of environmental entrepreneurship in relation to sustainable entrepreneurship.

### 2.1.4 A Sub-Theme of Sustainable Entrepreneurship

Similar to the definition of traditional entrepreneurship the process of discovering, evaluating and exploiting opportunities represents a fundamental element for the definition of sustainable entrepreneurship (Dean, McMullen, 2007). This is enhanced by the fact that sustainable entrepreneurship contributes to sustainability by generating social as well as environmental benefits for the greater society (Hockerts, Wüstenhagen, 2010; Pacheco et al., 2010; Schaper, 2016). Consequently, sustainable entrepreneurs focus on and pursue opportunities which balance social, economic and environmental effects of their business activities (Perrini, Russo, Tencati, 2007). Sustainable entrepreneurship can therefore be located operating within an economic, social, ecological and cultural environment simultaneously (Crals, Vereek, 2005). Further, “by developing new technologies and business models, sustainable entrepreneurs contribute to resolving environmental degradation and increasing the quality of life to the benefit of consumers, communities, and the natural environment” (Pinkse, Groot, 2015, p. 634) while limiting and minimizing social and environmental impacts (Choi, Gray, 2008b).

Joseph Schumpeter introduced the concept of creative destruction which describes the "process of industrial mutation [...] that incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one" (1942, p. 82). Adapting this concept to sustainable entrepreneurship several authors have argued that a sustainability pressure results in different market failures which represent new opportunities for entrepreneurs (Cohen, Winn, 2007; Hart, Milstein, 1999; Schaltegger, Wagner, 2011). Hereby, Dean & McMullen (2007) directly connect sustainable entrepreneurship to five dimensions of market failure (public goods, externalities, monopoly power, inappropriate government intervention, imperfect information). Moreover, York & Venkataraman (2010) suggest that these market failures represent sources of opportunities available to be pursued
by sustainable entrepreneurs. As a consequence, sustainable entrepreneurs would pursue those opportunities which have emerged due to unsustainable entrepreneurial, business activities and overall market failures. Regarding the individual outcome of pursuing the opportunity Hockerts & Wüstenhagen (2010) highlight that in sustainable entrepreneurship it can be linked to both, product and process innovation. In general, Iyigün (2015) highlights sustainable entrepreneurs’ role in enacting as a catalyst and transitioning the current state of the economy to a more sustainable one. Hereby, she strikes out their ability to fill those gaps which businesses and governmental agencies left behind trying to provide social and environmental goods and services.

The following graph portrays how sustainable entrepreneurship addresses three different types of sustainability simultaneously: economic, social and ecological.

![Figure 1: Environmental entrepreneurship as a sub-theme of sustainable entrepreneurship (adapted based on Taragola, Marchand, Dessein, Lauwers, 2010)](image)

For defining environmental entrepreneurship in the next section, we argue that, in contrast to sustainable entrepreneurship, environmental entrepreneurship does not necessarily tackle all these objectives but rather focuses on the ecological sustainability. This shall not imply that a focus on an ecological goal cannot have a positive effect on e.g. societal issues as well. However, the ecological aspect would mainly be the core. Consequently, as proposed by Dean & McMullen (2007), Gibbs (2009) and Levinsohn (2013) we locate environmental entrepreneurship as a sub-theme under the general concept of sustainable entrepreneurship focusing on the environmental aspect of this concept.
2.1.5 Definition of Environmental Entrepreneurship

In regards with environmental entrepreneurship, Lenox & York (2011) suggest that the role of the entrepreneur taking action by fostering environmental goods was more in the focus of sustainability researchers rather than in the management and entrepreneurship research field. In this context, based on the generally accepted entrepreneurship notion, Dean & McMullen (2007, p. 58) define environmental entrepreneurship as “the process of discovering, evaluating, and exploiting economic opportunities that are present in environmentally relevant market failures” which enacts as an enhancement of the traditional entrepreneurship definition.

Gast et al. (2017, p. 4) suggest that “environmentally-oriented [entrepreneurship] follows the motivation to earn financial benefits by helping to decrease environmental problems and ecological degradation”. This is in line with Thompson, Kiefer & York (2011) who highlight that environmental entrepreneurship aims at building up eco-friendly businesses by combining a profit orientation with the goal to decrease environmental market failures. This reflects on the overall motivation of environmental entrepreneurs which we have identified as a common theme in the literature in this field. E.g. Nacu & Avasilcă (2014) put emphasis on the environmental entrepreneurs’ motivation which is not determined only by a profit-orientation but also by the willingness to solve environmental issues. In regards with the environmental entrepreneur’s motivation, it is suggested that rather than being opportunity-driven, the desire to create new ventures would be mainly based on a motivation for environmental sustainability (Gast et al., 2017). Further, York and Venkatatraman (2010) hereby strike out that environmental entrepreneurs focus on finding solutions to environmental degradation rather than being the actual cause of it, while pointing out that environmental issues represent opportunities with which entrepreneurs are particularly well oriented. This is enhanced by Hall et al. (2010, p. 444) who mention that environmental ventures may be considered as a “supplement to regulation, corporate social responsibility, and activism in resolving environmental problems” assigning an important role to environmental entrepreneurship in counteracting environmental issues. Reflecting on the contributions of the different researchers in this field, it becomes evident that the aspired outcome to counteract environmental issues by identifying and exploiting opportunities plays a fundamental role in environmental entrepreneurship and is supported by a motivation to decreasing environmental problems and earning financial benefits simultaneously.

Additionally, based on the notion that entrepreneurs have the ability to create new markets rather than only capitalizing on existing ones (Sarasvathy, 2005), various authors have pointed out that environmental entrepreneurs can also create new markets by offering their products and services (Cohen, Winn, 2007; York, Venkatatraman, 2010; Hockerts, Wüstenhagen, 2010). This again highlights its role as an active potential driver for counteracting environmental issues and underlines its relevance.

So far, we have identified environmental entrepreneurship as a relevant sub-theme of the concept of sustainable entrepreneurship. Although lacking a consent terminology, various
authors use different terms synonymously and draw attention to an increasing relevance of the environmentally-focused sustainable research field for the future (e.g. Hall et al, 2010; Gast et al. 2017). Referring back to our background of this paper, we have underlined its increasing relevance for today’s and future development. Different authors as e.g. Gast et al. (2017) have underlined a research gap regarding the specific challenges of environmental entrepreneurs. In the following, we review the current literature status on challenges which have the potential to limit environmental entrepreneurship in its activities and development. Based on this we will argue for the need for closing this gap and why it represents the central theme of this thesis.

2.2 Challenges of Environmental Entrepreneurs

In this section, we present the current state of the literature on challenges of environmental entrepreneurs. We start by providing an overview of the literature on challenges faced by entrepreneurs in general. In the second part, we focus on the literature of challenges specific to environmental entrepreneurs, presenting the current state of the research field, and discussing the gaps identified within it.

2.2.1 General Challenges of Entrepreneurs

Research on challenges, problems and issues faced by entrepreneurs has received considerable attention from scholars. Huang and Brown (1999) conceptualize problems as an individual’s perceived difference between a current situation and a desired state of reality. The perception of a situation as a problem depends on internal factors – such as an individual’s knowledge, motivation, education, background and experience – as well as external factors, such as geographical location, industry, and growth stage (Huang, Brown, 1999). While the field has been extensively researched, inconsistent terminology can lead to complications in reviewing the existing literature. Words such as “barrier”, “obstacle” or “problem” – although always referring to negative entrepreneurial conditions – are used interchangeably (Kouriloff, 2000). For the benefit of clarity, we will use the word “challenge” as well as “problem” to refer to negative entrepreneurial conditions in the following paragraphs.

Yalcin and Kapu (2008) describe problems faced by entrepreneurs as one of the three important dimensions of the entrepreneurial process, alongside motivations and opportunities. They play an important part in entrepreneurship, as they have crucial effects on the establishment, the growth, and the survival of a new venture (Yalcin, Kapu, 2008; Krasniqi, 2007; Zimmerman, Chu, 2013). Insights from research in the field are therefore often particularly interesting for many actors within the sphere of entrepreneurship (Huang, Brown, 1999). Moreover, understanding why firms fail is crucial for the stability and health of the
economy and therefore of great interest to policy makers concerned with economic development (Lussier, Pfeifer, 2000).

There are many different challenges faced by entrepreneurs in general. Scholars have identified problems such as obtaining financing (Huang & Brown, 1999; Alpander et al., 1990), the liability of newness (Zimmerman, Zeitz, 2002), challenges of obtaining information (Hoogendoorn et al., 2011), and a lack of business training (Benzing et al., 2009).

Due to the vastness of problems identified, some scholars have grouped problems into different categories. However, grouping methodologies differ from scholar to scholar and no single accepted way of categorizing problems exists. Heilbrunn (2004) identified five different groups of problems faced by entrepreneurs at various stages of the venturing process: (1) difficulties associated with the external economic environment; (2) difficulties associated with the life-cycle of the venture; (3) difficulties associated with the product and its industry; (4) management problems; (5) difficulties associated with the entrepreneur’s personality. Wu and Young (2002) group problems by functional areas of the business they are associated with, such as “Strategic Planning Problems”, “Operational Problems”, or “Marketing and Sales Problems”. While numerous different approaches of grouping challenges and problems faced by entrepreneurs have been used, the method of categorizing problems based on the functional area they are generally associated with seems to be the most common one (e.g. Huang and Brown, 1999; Alpander et al., 1990).

Besides research on and classification of challenges faced by entrepreneurs in general (Terpstra, Olson 1993; Huang, Brown, 1999), challenges faced by specific types of entrepreneurs or problems of entrepreneurs within a certain environment have been in the focus of scholars. One of such specific topics is the role of gender in connection with problems faced. Heilbrunn (2004) researched the impact of gender on the difficulties faced by entrepreneurs. Applying a resource based view, she found that female entrepreneurs often perceive a lack of managerial and financial skills as major problems (Heilbrunn, 2004). Benzing et al. (2009) found that challenges faced by female entrepreneurs in Turkey are mostly derived from the community’s view of a woman’s role in society.

Another stream within the topic of entrepreneurial challenges that has received considerable attention is the investigation of the role the entrepreneurial environment plays and which effect it has on the problems faced by entrepreneurs (Heilbrunn, 2004). Specifically, the differences between challenges of entrepreneurs in developed economies versus the challenges of entrepreneurs in developing or transition economies have been at the centre of attention for several scholars (Yalcin, Kapu, 2008; Benzing et al., 2009; Zimmerman, Chu, 2013; Lussier, Pfeifer, 2000; Singh et al., 2011). According to Zimmerman and Chu (2013), entrepreneurs in developing economies face a unique set of challenges. This is attributed to relatively unstable political, economic and business environments (Benzing et al., 2009), as well as to a lacking entrepreneurial culture, attitudes and values (Yalcin, Kapu, 2008). Amongst the problems identified are infrastructure problems (Benzing et al., 2009), a weak economy (Zimmerman, Chu, 2013), and high labour turnover rates (Yalcin, Kapu, 2008).
In addition to the type of entrepreneur (e.g., gender) and the entrepreneurial environment (e.g., transitional versus developed economy), entrepreneurial challenges have been intensely researched in connection with lifecycle stages of ventures (Kazanjian, 1988; Alpander et al., 1990; Keskin et al., 2013). Kazanjian (1988) found that different types of problems generally tend to arise in different growth stages of a firm. Alpander et al. (1990) investigated entrepreneurial challenges met in the formative years and found that “finding customers”, “obtaining financing”, “recruitment” and “dealing with existing employees” are the predominant problems in a venture’s first year, while problems such as “product pricing”, “maintaining product quality”, “legal obstacles” and “administrative issues” are more prevalent in the second and third year in the life of a venture.

2.2.2 Challenges Specific to Environmental Entrepreneurs

Due to the relative newness of the research on environmental entrepreneurship and sustainable entrepreneurship (Gast et al., 2017), relatively little literature exists on the challenges specific to environmental entrepreneurs. In their review of the literature on “ecologically sustainable entrepreneurship”, Gast et al. (2017) found a total of 22 articles mentioning factors that inhibit environmental entrepreneurship. To better differentiate between these challenges, they propose the categories “financial challenges” and “market challenges”, with 13 of the 22 articles mentioning financial challenges and 9 mentioning market challenges.

Regarding financial challenges, Gast et al. (2017) argue that like any entrepreneur, environmental entrepreneurs face financial challenges, such as obtaining sufficient financial funding. However, due to certain characteristics, motivations, and strategies, environmental entrepreneurs additionally face a variety of particular challenges (Gast et al., 2017; Bergset, 2015). Finding investors willing to invest in an environmental venture can be complicated by the investors inability to comprehend the relevance of a certain solution (Bergset, 2015). Furthermore, finding investors who share the vision and the goals of the environmental entrepreneur constitutes a major challenge (Linnanen, 2002). These difficulties of obtaining finance from private investors (Gast et al., 2017) means that funding for environmental ventures is mainly obtained through the following methods: private funding (i.e. financing from entrepreneur’s or his or her family’s personal wealth) (Choi, Gray, 2008b), boot strapping (Choi, Gray, 2008b), governmental funding (Gliedt, Parker, 2007) or angel investors (Choi, Gray, 2008a). These financing difficulties constitute a major obstacle to survival of environmental ventures, often limiting environmental entrepreneurs to serve niche markets (Gast et al., 2017). Additionally, these resource constraints may force environmental ventures to stay entrepreneurial for a longer period of time, compared to more traditional entrepreneurs (Gast et al., 2017).

Market challenges of environmental entrepreneurs are both connected with the entry to a market, as well as to success in the market (Gast et al., 2017). These challenges mainly concern the entrepreneurs’ relations and interactions with the various stakeholders in their
environment, such as customers, governments and potential clients (Gast et al., 2017). Linnanen (2002) argues that sustainable entrepreneurs in general may face challenges when convincing customers to buy their products, as sustainable and environmental business practices are still discredited by the public. As a result, it may be necessary for environmental entrepreneurs to educate their customers about the benefits of their solutions (Linnanen, 2002; Sumanthi et al, 2014). Further, challenges mentioned in the literature include human resource problems – i.e. the difficulty of environmental ventures to attract technical expertise and top management teams (Rao, 2008) – as well as challenges related to environmental entrepreneurs’ access to policy makers (Pinkse, Groot, 2015).

Gast et al.’s (2017) literature review on environmental entrepreneurship –especially regarding the challenges of environmental entrepreneurs – can be described as the most comprehensive, and certainly most recent one. They provide a body of references of published literature on the topic of environmental entrepreneurship and group this literature into six different clusters (Gast et al., 2017). Amongst these is one cluster of literature that mentions challenges of environmental entrepreneurs. By investigating this body of literature, one gets a picture of a fragmented field of research with major inconsistencies and shortcomings. We elaborate on these in the following paragraphs.

While Yalcin and Kapu (2008) describe problems faced by entrepreneurs as one of three major dimensions of entrepreneurship, there exists – to our knowledge – not a single published work of literature that focuses entirely on the specific survival challenges faced by environmental entrepreneurs. Although Gast et al. (2017) provide 22 references of articles mentioning challenges of environmental entrepreneurs, a closer look at these references reveals that in most of them, challenges of environmental entrepreneurs are only a subtopic or merely noted in passing.

Furthermore, incongruent findings can be observed within the literature. One example for this is the relationship between environmental entrepreneurs and their customers. On the one hand, Linnanen (2002) argues that sustainable development and environmental management are discredited concepts within the public which may negatively affect market creation. On the other hand, Choi and Gray (2008b) reveal in their research how sustainable entrepreneurs were successful in the creation of differentiable brands through promotion of their sustainable business practices. Another example regards challenges related to human resource management. On the one hand, Rao (2008) argues that environmental entrepreneurs’ difficulties regarding to recruiting and retaining skilled managers is exacerbated compared to traditional entrepreneurs, due to not being able to provide the same incentives as them. Choi and Gray (2008b), on the other hand, found that most sustainable entrepreneurs in their study showed genuine concern for the well-being of their employees and offered benefits that far exceeded the standard in the industry.

One explanation for these inconsistencies identified in the literature could be the dynamic and fast developing nature of the field. Linnanen (2002), for example, greatly relied in his research on personal experiences made before 2002. The environment underlying his findings
regarding the challenges of market creation for environmental entrepreneurs may have changed significantly in recent years. Another potential reason for inconsistencies in the field could be the negligence of country differences by some scholars. The human resource challenges of environmental entrepreneurs identified by Rao (2008) were studied in the setting of Malaysia, while contrary findings were made by Choi and Gray (2008b) in their study, which was set in the United States.

Based on these observations within the current literature on challenges of environmental entrepreneurs, we identify the need for further comprehensive exploratory research. Due to the current lack of insights provided by existing literature, we argue that it is necessary to build new theory that can provide researchers with a better understanding of the survival challenges specific to environmental entrepreneurs.

2.3 Institutions and Policies as Support Measures for Entrepreneurship

While the specific challenges for environmental entrepreneurs have not been researched explicitly, the impact of institutional support and policies on entrepreneurs has received attention from academics. We draw the connection between the challenges and institutional theory and policies as the latter can be aimed at supporting a positive development of environmental entrepreneurs by creating incentives and policies which counteract potential survival challenges.

Nowadays, institutional theory is considered to be a popular theoretical foundation used for the exploration of different topics in various domains as in institutional economics, political sciences and organization theory (DiMaggio, Powell, 1991; Bruton, Ahlstrom, Li, 2010). Whereas the main focus often lies on a sufficient resource base, other factors as culture, legal environment, tradition and economic incentives have been recognized as being influential, directly impacting entrepreneurial success or failure (Baumol, Litan, Schramm, 2007). Roy (1997) suggests that institutional theory focuses on regulatory, social and cultural influences promoting an organization’s survival and legitimacy instead of on resources and maximum efficiency. Bruton & Ahlstrom (2003) and Scott (2008) highlight that entrepreneurs can be enabled but also constrained by institutions in the environment they are operating in. Consequently, institutions can have a direct impact on factors as their business performance, venture size, development in the market and founding rates (Bruton et al., 2010). Within this theory, Suchman (1995) introduced the legitimacy factor being defined as “a generalized perception or assumption that the actions of an entity are desirable” (p. 74). Other authors as Rao et al. (2008) highlighted this factor as a central asset of a venture as it signals the value of a venture to important stakeholders as e.g. investors. As a result, Hörisch et al. (2017) and Tolber, David & Sine (2011) point out that institutional theory has gained an enhanced attention being of high relevance within the entrepreneurship research field.
Meek, Pacheco & York (2010) argue that influential factors as e.g. government incentives contribute to an economic growth and therefore to an economic development while the resulting effect would be dependent on the overall social environment in this field. Obaji & Olugu (2014) highlight the potential effectiveness of government policies on an entrepreneurship uplift provided that there is no inconsistency of policies as these would result in inefficiency instead of the aspired outcome. In addition to this, they call for a more specific targeting of policies in order to subsidize the establishment of businesses with a high growth potential rather than generic ventures which are likely to fail or have relatively low positive outcomes.

In the field of environmentally-oriented entrepreneurship, different research authors have highlighted the important role of governance in supporting a positive development of these businesses. Dean & McMullen (2007) found out that the government can resolve environmental issues by establishing appropriate institutions rewarding entrepreneurial behavior while dissuading environmentally degrading ones. This would include the elimination of subsidies for business practices which are considered to be environmentally damaging. However, government policies in the form of economically restrictive regulations represent the least effective intervention. Cohen & Winn (2007) and Dean & McMullen (2007) support the view that intelligent public policy serves as effective guidance and supporting measure for environmentally-oriented entrepreneurship and requires an increased attention of researchers and practitioners. In this context, Hörisch et al. (2017) strike out the need for policy measures to be adapted to domestic economic circumstances in order to be most effective.

Several studies have been conducted on the relationship between environmentally-oriented entrepreneurship and institutional forces, especially concerning factors as the rate of entrepreneurial entry. Hereby, it has been claimed that government bureaucracy would inhibit environmentally-oriented entrepreneurship (Isaak, 1997) while government programs, tax structures and a supportive culture would encourage these (Lenox, York, 2011). Studies in different fields as the renewable energy sector for solar or wind projects have shown the emergence of environmental entrepreneurship due to government forces (Russo, 2001; Meek et al., 2010).

By highlighting the overall relevance of government policies in supporting and commercializing sustainable and environmental innovation, the need for a further understanding and knowledge in this field becomes evident. Based on this, there is a call for further research into this area (Fellnhofer, Kraus, Bouncken, 2014) in order to provide insights for practitioners and policy makers. Consequently, while exploring the challenges of survival of environmental entrepreneurs we simultaneously collect insights considering whether and which role institutions and policies play for environmental entrepreneurs while facing and overcoming survival challenges.
3. Methodology

In the following section, we will present the processes of how our research is designed and conducted. We firstly introduce our applied research philosophy followed by a description of our research design. Based on that we explain or procedure in gathering and analyzing the empirical data. We conclude this by highlighting our applied research ethics as well as arguing for our overall research quality.

Based on Saunder’s, Lewis’ & Tornhill’s (2016) concept of the research onion, the following image shall provide an overview on the different layers covering the different levels of our applied research process. The different layers will be described and discussed individually.

![Research Onion Diagram](image)

**Figure 2: The different layers of our research process**
*(based on Saunder, Lewis, Tornhill, 2016)*

3.1 Research Philosophy

The quality of a research is deeply defined and influenced by an awareness of philosophical assumptions while conducting the research for various reasons (Easterby-Smith, Thorpe, Jackson, 2015). The researcher is obliged to understand his/her own epistemological beliefs in order to be aware of his/her reflective role within the applied research methods. Further, it helps to clarify research designs being utilized. Moreover, it supports the author in identifying and creating designs that are outside the frame of their past experience. As a
result, a clear awareness and understanding of philosophical assumptions is supposed to increase the research quality and contribute to the researcher’s creativity while conducting it.

### 3.1.1 Ontology

Ontology entails the philosophical assumptions about the nature of reality and represents the core of research (Easterby-Smith et al., 2015). It describes how a reality or truth is viewed and portrays a starting point for most discussions among philosophers. This study follows a relativist ontology assuming that there are many truths with facts being dependent on the perspective of the individual observer. We interviewed different groups of interviewees aspiring to gather different insights on the same issue. On the one side, we review the experiences of environmental entrepreneurs who have directly experienced the problems and challenges they have faced while operating their own businesses. On the other side, we interviewed business developers hoping to benefit from their vast experiences of consulting different environmentally-focused businesses and to gather they external insights on these challenges. We assume to gather data on different truths and realities depending on the viewpoint of the individual case and interview partner. According to Easterby-Smith et al. (2015). the anticipated outcome of a relativist research approach is a generation of theory which we aim to achieve within this thesis by identifying patterns and common themes from the different insights of the different entrepreneurs and business developers.

### 3.1.2 Epistemology

Epistemology is dedicated to assumptions about knowledge and to ways of questioning into the physical and social worlds (Easterby-Smith et al., 2015). Further, it deals with the question of how knowledge can be communicated to others and represents the bridge for a researcher into a vast pool of knowledge based on different methods and techniques. Hereby it is guided by the ontological belief.

This study applies a social constructionist epistemology which implies that reality is created and that conventions are reality (Easterby-Smith et al., 2015). We expect that each of our interviewee have constructed their own reality by having made their own experience with survival challenges and having their own individual opinions on this. This is in line with the viewpoint that reality is not “objective and exterior” and focuses on the ways that people make sense of the world, e.g. by sharing experiences. By conducting interviews with different individuals, we will look into different societal realities and aspire to collect insights into their different realities. Thereby it is our aim to understand an overall reality on the survival challenges of environmental entrepreneurs by identifying patterns in our data based on individual observations and perspectives. This follows the overall purpose of the generation of theory.
3.2 Research approach

The field of environmental entrepreneurship is still a relatively young and underdeveloped area of research. So far, little research has been conducted on the survival challenges faced by environmental entrepreneurs that are specific to the nature of their business (i.e. focused on environmental goals in addition to economic goals). Considering the shortage of literature within the field of environmental entrepreneurship, we employ an inductive research approach in our study. In the inductive approach, the focus lies on generating and building theory based on the data, opposed to the deductive approach, which focuses on theory falsification or verification (Saunders et al., 2016).

The goal of our research is to expand the comparatively little literature that exists on environmental entrepreneurship. In particular, we want to investigate the relatively understudied topic of survival challenges that are specific to environmental entrepreneurs. Since fairly little research has been conducted on the topic so far, we argue that it is necessary to build new theory that is based on collected data, i.e. “generalizing from the specific to the general” (Saunders et al., 2016, p.145). This is in line with Saunders et al. (2016), who believe that a topic that is new and on which there is little literature, an inductive research approach may be preferred over a deductive one. Considering the lack of literature and the newness of the research field of environmental entrepreneurship, we believe it is most appropriate to employ an inductive approach in our research. This approach will be particularly reflected in the way in which theory is built: rather than testing existing theory based on the collected data, we try to build new theory guided by suggestions from, sense-making of and reflection upon the data.

3.3 Methodological Choice

To study the topic of environmental entrepreneurship and build new theory within the research area, especially, what survival challenges are specific to environmental entrepreneurs, we adopt a qualitative methodology. Considering the relative newness of the field under investigation in this study, we believe that adopting a qualitative methodology is best suited to conduct this research, due to its explorative nature. At present, the field of environmental entrepreneurship lacks clarity and – in its current state – major gaps need to be filled within the area. As a result, we argue that it is important to build new theory through studies of an explorative and qualitative nature. Qualitative research is characterized by its use of qualitative data, i.e. information gathered in a non-numerical form, such as interview transcripts or observation notes (Easterby-Smith et al., 2015).
3.4 Research Strategy

The conduction and procedures of this thesis have been divided into three different parts. At first, we conducted a systematic literature review in order to analyze existing publications in this field, to provide an overview on the relevant literature in this field as well as contextualize the problem in focus. Based on this review, we identified a research and knowledge gap which has become the main focus of this thesis. During the second part, we conducted interviews to collect primary data which we later analyzed to find patterns and provide insights in order to extend the existing theory. At last, while interpreting our data, we identified the need to refer back to additional literature in order to discuss our findings effectively. In the following our applied strategy and procedures are described individually.

3.4.1 Literature Review

When initially researching the topic, it became evident that no explicit research had been done on the challenges of survival specific to environmental entrepreneurs. Consequently, we conducted a literature review which would confirm our assumption regarding this lack within the research field. After mainly focusing on entrepreneurship and business management journals at the beginning, we had to extend our review to articles in the area of sustainability research as most papers had been published in this field. Further, we encountered a terminology issue which is inherent in the topic of environmental entrepreneurship. As a result, we reviewed articles which not only were dealing with the term of “environmental entrepreneurship” but were rather utilizing synonyms as e.g. “ecopreneurship”, “green entrepreneurship” or “enviropreneurship”. As data sources we used Web of Science, the Jönköping University online database (Primo) as well as Google Scholar. After excluding articles due to their focus on different kinds of sustainability as a social or economic one rather than environmental sustainability, we identified 34 articles which we utilized for our initial literature review. After reviewing these articles, we also traced citations in relevant publications adding a snowballing citation technique to our literature review approach (Easterby-Smith, 2015). We specifically applied this technique for referring back to older but often cited publications after initially limiting our initial search to more recent articles which had been published after 2010.

After sorting and reviewing the literature and our findings, we grouped our literature review into two interconnected areas: the first one dealing with environmental entrepreneurship more in general as well as its common themes and the second one being dedicated to the challenges of environmental entrepreneurs that had been mentioned so far. These areas have been linked in order to provide an appropriate theoretical framework as basis for this study. Hereby, this framework was supposed to serve as a guiding principle for our research approach. Nevertheless, due to the inductive nature of our research and analysis within this study our initial theoretical background serves as a guiding framework and was later on expanded based on our empirical findings (e.g. categorization of challenges in financial and market
challenges). For this, we added some theoretical lenses to our framework (e.g. institutional theory) in order to be able to analyze and discuss our empirical findings effectively and contextualize them.

3.4.2 Multiple Case Studies

Due to the lack of existing literature on survival challenges of environmental entrepreneurs and the inductive nature of this study, the aim of our research strategy is to gain a broad insight into the business environment of environmental entrepreneurs. In order to investigate the survival challenges faced by environmental entrepreneurs, compare these insights and find patterns and relationships amongst them, we will use multiple case studies. According to Eisenhardt and Graebner (2007), case studies are rich, empirical descriptions of particular instances of a phenomenon. They are particularly well suited to inductively build theory that is situated in and developed through the recognition of patterns and relationships within and across cases.

The cases selected for this study are individual persons - environmental entrepreneurs and their ventures as well as business consultants. Semi-structured interviews are conducted, based on an interview guide developed through a pilot interview. Through simultaneous data collection and data analysis, this interview guide develops across the process of interviewing individuals, as patterns and relationships become visible and a framework emerges. The final version of this interview guide can be found in the appendix (see Appendix 1 & 2).

3.4.3 Sampling and Method of Access

Within this thesis we have applied a non-probability sampling, utilizing a purposive sampling as overall sampling technique. According to Easterby-Smith et al. (2015) the principle of bias can be considered to be the greatest potential flaw of a non-probability sampling as in our case. This applies especially to qualitative research due to a richness of data from smaller samples. However, so far no explicit research on the survival challenges of environmental entrepreneurs has been conducted and our main goal is to provide first insights in this fields and identify potential patterns which can be used as the base for further research at a later stage. Therefore, we argue that it represents the appropriate way of sampling for this study.

Easterby-Smith et al. (2015) suggest that the researcher approaches potential sample members based on a defined idea of which sample units are required in order to conduct the research. Hereby, theory represents a guiding principle for selecting and eventually sampling the units which will be analyzed within a study (Saunders, Lewis, Thornhill, 2016). Based on the identification of key concepts and characteristics while doing our literature review we applied a theoretical sampling and searched for ventures within Sweden which have set a positive environmental impact through their products or services as one of their primary goals. Therefore, our desired sample consisted of stakeholders within the company who had
been involved in the process of running the environmentally-focused business. As we aim to provide first explicit insights into the overall survival challenges of environmental entrepreneurs we decided not to limit our sample units by characteristics as the size or age of the business and focused on the attribute that it offers a product or service which intends to provide a positive impact on the environment counteracting climate issues. Hereby, we focused on companies which showed this environmental orientation from an early stage on.

In terms of geographic location, we have limited our sample to Sweden for various reasons. One of our primary goal was to provide insights and extend the theory in the field of survival challenges of environmental entrepreneurs. For this, we aimed to gather insights from entrepreneurs who are located in the same geographical setting as the findings might differ based on a different national context and the individual characteristics of the location and external factors being present in the country. Especially, as we also analyzed the role of institutional support for the entrepreneurs we argue that it makes more sense at this stage of research to focus on one country only. Further, we chose Sweden for its geographical proximity as we were located in Sweden and were given a limited time frame for this study. We identified these companies and the entrepreneurs through different sources. Hereby we utilized online indices of companies within Sweden and filtered for those who are operating in green segments. Further, we reviewed web pages of organizations which award entrepreneurs and ventures, environmental as well as traditional ones. At last we searched for green initiatives which are connected to environmentally-focused ventures in Sweden in different ways in order to get a broader overview on environmental ventures and entrepreneurs located in Sweden.

Besides approaching environmentally-focused companies we also tried to get in contact with business developers and consultants in the field of Corporate Social Responsibility (CSR) who have consultancy expertise in the area of environmental business ideas. Although they might not have run their own company in this field we believe that, due to their consultancy experience, they have collected valuable insights into the various processes of environmental ventures and are able to provide insights from a more external perspective.

3.4.4 Data Collection

For our research, we collected primary data through qualitative interviews. These are guided conversations aiming at questions and answers regarding a specific topic (Lofland, Lofland, 1984) and follow a particular purpose. According to Kvale and Brinkmann (2009) it is the aim to collect information regarding the meaning, assumption and interpretation of a topic relating to the perspective and worldview of the interviewee. Regarding the level of structure, we decided to use a semi-structured interview approach. Based on a topic guide which we prepared in advance different topic areas should be covered during the interview. Applying this, the interviewee should have the opportunity to talk about his/her experiences and perceptions regarding our topics of interest following an explorative approach. By being clear about our exact areas of interest for the interviews, we aimed to achieve an increased success
of our research which has also been suggested by Easterby-Smith (2015). The interviewees were openly asked about running their businesses. At a later stage of the interview, we particularly asked for challenges they have encountered (the utilized topic guide and questions can be found in the appendix). All the interviews were audio recorded. Apart from that we took notes during the interview to ask in-depth questions regarding aspects the interviewees mentioned while answering our questions.

We decided to approach potential interview partners via email. For our potential interview partners we targeted two different groups. On the one side, we reached out to entrepreneurs whose businesses clearly generate a positive environmental impact and set this as one of their primary goals. On the other side, we contacted business developers who show an expertise in consulting environmentally-focused and CSR related ventures.

In total, we sent out emails to 44 companies and five business developers. Nine of the approached companies and two of the business developers agreed to do the interview with us. The topic guide was sent out to the interviewees beforehand. Ten of the interviews were conducted face-to-face in order to allow a more in-depth data collection and comprehensive understanding of the data. Due to a limited time schedule of one of our interviewees we conducted one of the interviews via Skype video call. In the next section we provide a short overview on the backgrounds of the companies followed by an overview on the individual interview partners and interview details. The companies and respondents were anonymized to ensure confidentiality. All of the interviews were conducted in English.

**Company A**
After discussing their idea for more than five years, Entrepreneur A and his former colleague founded Company A which offers a solution for producing electricity using low grade heat which usually is unused in industrial processes. Based on this, the company intends to offer clean electricity through the utilization of wasted resources.

**Company B**
Company B enacts as an incubator for new business ideas but also as an accelerator for new ventures. Hereby, they offer consultancy to entrepreneurs aiming to make their businesses a success. While providing support to entrepreneurs from various segments, Company B is also particularly targeting CSR related business ideas.

**Company C**
Company C aims to develop an urban environmentally friendly transport behavior by offering a bike-sharing solution which shall be set up in different cities throughout Sweden.

**Company D**
Company D is operating in the clean technology segment offering waste liquid treatment systems to enhance the recycling of waste liquid.
Company E
Company E provides an environmentally friendly heating solution for residential and public buildings by recovering heat energy in the form of gas. The aim is to provide a renewable energy source and reduce the overall carbon footprint.

Company F
Company F considers itself as an economic association and is aiming to provide a positive impact on the environment by implementing various ecological initiatives, e.g. in the recycling segment.

Company G
Company G develops and provides sustainable small-scale CHP plants which gasify residue biomass and hereby provide sustainable power and heat production at a relatively high profitability.

Company H
Company H offers a vertical-axis wind turbine technology which shows lower service and maintenance costs compared to traditional horizontal axis wind turbines. It is the company’s goal to offer a sustainable power generation solution for the future.

Company I
Company I consults and supports small and large companies, organizations as well as individuals. It is offering skills in the field of economics, law and also environmental issues.

Company J
Company J cultivates algae by converting potentially harmful particles as carbon dioxide, nitrogen and phosphorus emissions into valuable products. It is the company’s aim to prevent the harmful emission of these particles and provide clean water as well as enhance the efficiency of solar panels with its products and to contribute to a more sustainable industry.

Company K
Company K is capturing nutrients from fluids such as human urine as well as rejected water from biogas plants in order to recycle those into valuable resources and thereby minimize the impact of hormone residues, pharmaceuticals and heavy metals into lakes, rivers or the sea.

<table>
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<th>Name</th>
<th>Position</th>
<th>Date</th>
<th>Length</th>
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<td>CEO</td>
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<td>Entrepreneur K</td>
<td>Co-owner</td>
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<td>1:54h</td>
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</table>

Table 2: Interviewee overview and interview details

3.5 Data analysis and procedure

Through an iterative process of familiarization with the data, coding of the transcripts, comparing with earlier interviews and grouping codes together to find topics and themes, we aim to gain a better understanding of the business environment of environmental entrepreneurs and the survival challenges they face within this environment. Rather than being guided by a scarcely developed theory, we are guided by the qualitative data collected through the interviews. With the increasing amount of data collected, our insights become more focused and trends emerge, guiding the selection of new interviewees as well as the development of our interview guide. Through a process of alternating data collection and data analysis, ideas are developed and relationships identified. These patterns and ideas are then in turn further developed, supporting the emergence of new theory.

The coding of the qualitative data was first conducted on an individual basis. Afterwards, we compared our individually developed codes with one another and discussed our ideas and the patterns and relationships we saw emerging. This process was repeated for each interview.
transcript. Based on the analysis conventions by Gioia et al. (2013) which we applied, we utilized 40 codes which represent the first-order concepts. These concepts reflect the interviewees' perspectives which are presented through representative quotes within the empirical findings section. Afterwards we connected the identified codes (first-order concepts) into categories, the second-order themes. These themes hereby represent our analysis of the individual codes and their interconnections. At last, the individual categories were summarized into aggregate dimensions. An exemplary structure of this process is displayed in the following image.

![Figure 3: Data analysis process based on Gioia et al. (2013)](image)

The codes and categories that finally emerged can be viewed in figure 4 in the empirical findings section.

### 3.6 Ethical Consideration

In the past, there has been a growing pressure from different academic disciplines to apply ethical codes and practices in social sciences (Easterby-Smith et al., 2015). As a consequence, Bell and Bryman (2007 in Easterby-Smith, 2015, p. 122) introduced ten principles of ethical practice which will serve as guidelines for our thesis. We will thereby apply their key principles. The first six of these principles are dedicated to the protection of interests of the research subjects. The remaining four principles aim at protecting the integrity of the research community by ensuring accuracy and avoiding bias in the results (Easterby-Smith, 2015).

As also outlined by other authors as Miles & Huberman (1994) and Saunders, Lewis & Thornhill (2009) we follow these principles throughout the whole research process. Based on these principles we ensured that all participants are fully informed about our research intention and purpose as well as the role they are playing within the research process. Further, we collected the agreement for the interview beforehand and ensured that the interviewees’ participation was voluntarily. This also provided them with the right to reject questions in case they would be unwilling to answer them. For this, the topic guide was sent to the interviewees before the actual interview so they would have sufficient time to express their potential discomfort. Apart from that, we asked the interviewees for their permission to
record the interview and whether they wanted to stay anonymous. At last, each interviewee was informed that their statements will be used in the course of this thesis. By applying all these measures, we aimed to achieve the highest ethical standard for this thesis which was possible.

3.7 Research Quality

In this section, we present the measures taken to ensure the quality of our research and the credibility of our results. According to Saunders et al. (2016), the use of the concepts of reliability and validity in qualitative research may be philosophically and technically inappropriate. Instead, they suggest researchers who take a social constructionist view to use the criteria of dependability, credibility and transferability to prove the quality of their research.

Dependability in qualitative research means recording all the changes to the developing research focus and produce a reliable and dependable account of the emerging focus that may be understood by fellow researchers (Saunders et al. 2016). We aim to achieve dependability through a clear and detailed documentation of the way our research focus develops during the continued collection and analysis of data.

Credibility is the parallel criterion to internal validity in positivistic studies (Saunders et al., 2016). Emphasis lies on ensuring that the representations of the research participants’ socially constructed realities match what the participant intended (Saunders et al., 2016). One way of achieving this, according to Saunders et al. (2016), is through checking data, analysis and interpretation with the participant. To achieve credibility, we send the transcripts of recorded interviews to the participants and discuss the content, as well as our interpretation and analysis with the participant. Additionally, the analysis of each interview will be conducted by us separately, before discussing and merging our findings.

Transferability, the parallel criterion to external validity, can be ensured through providing a detailed description of the research question, design, context, findings and interpretations (Saunders et al., 2016). We aim to achieve transferability through utmost transparency and detailed accounts on our whole research process. For example, in our literature review we give a detailed description of how we define environmental entrepreneurs, ensuring that fellow researchers can conduct similar studies with the same type of participants. We also provide a clear description of our research design, including the sampling method, our interview guide, as well as our analysis method.
4. Empirical Findings

In this section we present the empirical findings which we have gathered during our research. Based on our data analysis our findings are presented in a summarized matter. The transcription of the interviewees as well as the coded versions are available on request.

The following image provides an overview on the main empirical findings (1st order concepts) which are summarized in categories (2nd order themes). Out of these categories the overall aggregate dimensions have emerged which shape the different challenge areas being identified.
4.1 Public Institutions and Government

Public institutions and the influence of the Swedish government have played a significant role for all environmental entrepreneurs within this study. After providing a short overview on its positive influence, the challenges that have been identified will be depicted.

Public support

“There are a lot of different public support measures. [...] There are [...] a lot of public competitions, different initiatives.” – Business Developer B

“We have a cooperation with the university also, [...]. That has been increasing our product development tremendously [...]. [Public institutions] have a network of other companies, that we can actually meet.” – Entrepreneur A
All environmental entrepreneurs have received public support in different forms as e.g. financing, business development support, legal advice or networks which provided them with the opportunity to achieve a growth of their businesses.

"And the consultancy from Almi for example. They were no help at all. Because they have never been in the water treatment business at all. They had no further experience on that business segment. And they didn’t know anything. So we had a consultant that we ended up paying 15,000 SEK and we just educated him. It’s very hard to find people that know about our business segment anyhow. And if there is someone that is very professional and very good at what they are doing, we cannot afford them. That’s the bitter truth. [...] And you have to understand the technology also because you have to see the market value. And this very scarce in this country. [...] For us it’s very important that the business person that we need to have in our company should have deep knowledge in this segment“ – Entrepreneur D

"From a competence point of view, [public institutions] have not been supplying us so much yet.” – Entrepreneur A

"People who leave university and want to work in the environmental area, a lot of them end up in the environmental protection agency or the energy agency or all of these consultancies. But they know too little about how it works, they have too little knowledge. They have a lot of knowledge in environmental issues, but too little knowledge in the technical issues. [...] And I think that is a problem. You need people with more technical knowledge on what you are trying to regulate [...] There I think I see a lot of others having that problem“ – Entrepreneur E

Several of the environmental entrepreneurs have noted that most of the support measures related to knowledge and consultancy would be inadequate and do not meet their requirements which are mostly technology-related. Especially as most of them operate within the technological segment they have highlighted the issue of finding consultancy support with an appropriate knowledge of their business segment at an affordable price. Therefore, there would be a need for knowledge and competence support which is insufficient at the moment from a public and government support side.

"We are certain that floating wind power is a future business. I guess the Swedish Energy Agency as well but they look a little bit too much at the Swedish market. They should be focusing on exporting technologies as well. And the negative part of that is, one is that we are trying to get funding from there” – Entrepreneur H

Regarding the available public support, e.g. Entrepreneur H has found it rather difficult to acquire some of it due to it being focused on the Swedish market only. As their solution
cannot be operated in Sweden due to missing natural conditions, they have been facing issues by trying to receive adequate public support for their business. Consequently, it appears that environmental entrepreneurs who seek to operate on other markets than the Swedish one tend to have difficulties in receiving the public support that they require which has also been expressed by other entrepreneurs as e.g. Entrepreneur E.

Bureaucracy

“But I mean, you have to fill in a lot of, all of these different [forms], or at least for Vinnova, you really need to fill in so many different facts and stuff and your budget and everything. I had never done it before and I got help from my colleague but I would never have been able [to do it], if I was an entrepreneur. To write in the way that they wanted me to write because they want you to write in a specific way and it’s pretty excluding for people maybe with sustainable ideas that are not used to how they would like you to report or to send in your idea to them and it’s very administrative work to get this money.” – Business Developer B

“We spent so many hours filling in so many forms, it all ended up in nothing. [...] So, we are also experienced in applying for money from the EU, Horizon 2020, that was a catastrophe. [...] We made another try, not with the same effort, maybe 200 hours from myself, just to support writing our application. So, it is extremely risky.” – Entrepreneur K

“We put a lot of time in applications but we don’t get that. So we had a negative experience.” – Entrepreneur H

Regardless of whether the entrepreneurs have received funding from public institutions or not, the environmental entrepreneurs as well business developers have described the application process for public financial support as difficult and especially time-consuming. Hereby it was noted that the entrepreneurs could have used their time resources more efficiently, especially during the early stages of starting up their businesses instead of spending it on bureaucracy.

Regulations

“So any new environmental law that is written is good for us. So that strengthens us actually.” – Entrepreneur D

“[...] Many companies fell forced to be greener and that they have targets in their company like for example when we talked to this larger skin care actors and their plans for 2020; they are quite aggressive. All of their resources or all of their ingredients should be made from renewable sources. Then, okay, that’s something that they said because they feel like they need to be proactive because of these regulations. [...] This has come from a policy side.” – Entrepreneur J
The interviewees have stated that regulations and policies can have a positive impact on their businesses. Hereby, they would especially support them if legislation forces companies and their potential customers to include more environmental solutions for their needs. Regarding this aspect, the positive outcomes of these regulations would not only be limited to the Swedish legislation but also to laws and regulations on a European Union (EU) level.

"Right now, we see that EU regulation – when it comes to pollution – is something we can use when communicating our value." – Entrepreneur G

"Suddenly you have a change in regulations or [...] so all the time you need to try understanding where to fit actually fit in with your business." – Entrepreneur D

However, some entrepreneurs also expressed that regulations can have a negative impact on them and their business, e.g. through sudden legislation changes which can have a tremendous impact on businesses operating in the environmental segment. Hereby, legislation changes would occur comparatively often due to a global pressure to preserve the environment and focus on environmental sustainability.

" [...] We need to get some approval from the EU so we are working together with two customers quite a lot now in order to get this approval as fast as possible because it can be a quite exhausting process. [...] It’s difficult to get a permit to build something more environmentally friendly." – Entrepreneur J

For their operations, some environmental entrepreneurs require permits, sometimes directly from the EU, due to the fact that they operate with or provide renewable resources. Receiving these permits would require a time-consuming application process, especially when environmental requirements are involved which again requires effort and time resources from the entrepreneurs.

"They only look at the how much of fossil CO2 you save. I think CO2 – no matter where it comes from – is bad. There, definitively, regulations are hurting us. I also think that with the new eco design directive – it is only valid for new installations, but we could also install this on old ones as well, but they are not covering the old systems, probably because they don’t want people changing their wood pellet burners back to oil. They are not touching the old things. There are so many people wanting a different thing, in the end you often cannot do anything because they are so strict.” – Entrepreneur E

One of the environmental entrepreneurs highlighted the issue that regulations and requirements would be relatively strict and cannot be adapted to an individual case. Here, certain requirements need to be fulfilled. However, it is mentioned that although the outcome of the business and operations would have a positive impact on the environment, it would be difficult to meet all the requirements and be in line with legislation which prevents the entrepreneurs from business operations.
“Someone is strict about the air, someone is strict about the water and someone is strict about the traffic, etc. Nobody looks at the total... I think that is for everybody working in the environmental area. You want to be good, but then you have all these different rules that don’t work together. [...] We have so many tough requirements that in the end we buy natural gas from Denmark instead rather than using our own environmentally friendly sources.” – Entrepreneur E

Some of the environmental entrepreneurs have remarked that many regulations would not interact with each other. A perspective which reflects on the total interconnections of regulations would be missing which would lead to a complex regulation system and result in an ineffectiveness, doing more harm than good.

“More or less all countries have different support system. [...] You need to get an understanding of the different countries.” – Entrepreneur G

“But since it is very much based on incentives and regulations, it is difficult when you come to other countries. How do we approach them, because their incentives are totally different or regulations are totally different? How do we sell it and how do we know what countries have the necessary incentives? That is actually a challenge when we want to grow, because it is not obvious. I thought that Europe had the same kind of regulations, but then I learned that Germany has incentives that go beyond the regulations. There might be other things – Norway are now banning fossil fueled heating from 2020, also on the old systems, they have to take away the old systems.” – Entrepreneur E

Those entrepreneurs that aim to operate internationally highlighted that, despite being part of the European Union, regulation and incentive systems would differ remarkably in individual European countries which would further increase the complexity for environmental entrepreneurs. This would require a high degree of adaptability of these businesses to each individual country, creating a broad challenge for environmental entrepreneurs.

“So, [environmental entrepreneurs] have a problem there that something is environmentally friendly in one country isn’t in another. What do we mean with environmental? That is a problem that everybody faces. It depends on in which country you are. We have cheap electricity in Sweden, we have cheap water. That makes our market special. When we go to other countries, you might see it doesn’t work, maybe you shouldn’t have started it because our market is too small. The people that I talk to about the different kinds of electro filters, hardly anybody is selling in Sweden, because we have different regulations, they have problems selling here in the same way we have problems selling somewhere else, because there are differences in regulations.” – Entrepreneur E

The international regulation complexity is underlined by Entrepreneur E who underlines that different countries would have a different understanding regarding what is perceived as environmental-friendly and what is not. This, on the one hand, would enable their business
operations in some countries but, on the other hand, limit them in other countries due to different regulations and their complexity.

“Everybody just says: “you have to be clean”. But what is the number? Because when you know the number you can say whether you can meet it. Once again, we depend on the legislation people to come up with something that is actually clear to understand.” – Entrepreneur E

Also, it has been outlined that the majority of regulations would be rather complex and not clearly define its requirements which the environmental entrepreneurs have to meet. Consequently, it would be rather difficult for environmental entrepreneurs to plan ahead and set certain criteria that they need to meet.

Dependency on legislation

“If you don’t have trees, you do not think they are renewable. But we have so many trees in Sweden – and for wood pellets you usually use the saw dust from doing planks – we think it is definitively renewable. But the regulation people in the EU though that it is not. But now, we won. In a few years, we might lose again and not have a business at all. So, what is environmentally friendly and what is not? That is a problem for us being in the environmental business. You can be out of business, just because somebody put another number on a paper, not because the product is bad but because they decided: “we want the blue thing instead of the green thing”. I think that is a problem.” – Entrepreneur E

Some of the environmental entrepreneurs have underlined the danger being entailed within regulations. As a change of legislation could entail a redefinition of environmental characteristics for a product or service, environmental ventures could be forced out of business as they do not match new requirements. This would represent a greater risk for environmental entrepreneurs.

“Generally, [green is] not [enough]. If you don’t have a law or some kind of regulation that says you have to go for the technology. Or also in public procurement, when it says it has to have this environmental aspect. Then you could get a benefit. Otherwise it’s hard.“ – Entrepreneur G

“That is what we are focusing on now, to find our way into the flue gas cleaning area. What we know is that in 2020 the eco design directive, that is valid for a lot of different things, will be updated to cover solid fuel boilers. They will have tough requirements on particles and different other exhaust fumes and energy efficiency. […] At the moment, we do not have these incentives. What is happening is, the eco design directive will make a legislation for making it harder. […] You don’t need our product to meet the legislation right now. […] You either need the incentives or the legislation. So far, […] I read in a report that is about 10 years old.
about “Flue gas condensation being very effective but it will never work unless it is required, unless the requirements for the particles is there, nobody will actually pay for it.” That is what we are actually waiting for, saying that they actually need it. Because then we have a cost-effective solution. There are very few people who are willing to pay for something just because it is good. Sometimes – or always- it comes down to the money.” – Entrepreneur E

In the particular case of Company E, the company will be strongly dependent on a legislation which will be enforced by 2020 in Sweden. Until then, potential customers do not have the incentive and motivation to switch to the company’s product which creates a strong dependency and therefore challenge due to regulations. This dependency has also been experienced by other environmental entrepreneurs stating that presenting the environmental factor would usually not be attractive enough and that the enforcing power through legislation is required.

4.2 Financial Challenges

“What do I see as the biggest challenge to environmental entrepreneurs (...)? Money.”
– Entrepreneur K

“I think for us and for everyone else in this industry, it (the biggest challenge) is financing – finding money. 90 percent of the challenges are around money” – Entrepreneur H

Challenges connected to financing – attracting private investors, obtaining funds for product development, receiving public grants, etc. – can be observed amongst all the environmental entrepreneurs interviewed. While the persons interviewed by us are active in a variety of different industries, find themselves in different stages of development and come from diverse backgrounds, financial challenges are known to all of them. The interviews revealed a number of different challenges connected to private as well as public funding and investment, the importance of competitions as possibilities to obtain financing and the importance of business networks to gain access to funding opportunities.

Private Investment

Most of the environmental entrepreneurs interviewed for this study are – or have been – experiencing difficulties with regards to finding private investors willing to invest into their environmental ventures. However, not all the experiences regarding private investors shared within the interviews have been negative. Indeed, some positive trends in private investment in environmental ventures seem to be emerging.

“I think it’s still quite heavily focused on fast return on investment, but I guess that’s the business model of venture capitalists.” – Entrepreneur J
One negative impression that was shared by several of the entrepreneurs is the apparent short-term focus of many private investors, especially venture capitalists. One of the entrepreneurs shared the experience of another environmental entrepreneur within her network:

“(Investors) wanted to invest there but they knew that the profits were like ten years away and that was a too long timespan for many. (...) They ended up not being able to continue.” – Entrepreneur J

Another entrepreneur, Entrepreneur K, has made a similar experience, being turned down by investors after telling them that profits were expected in four to five years.

Despite these negative experiences, most of the interviewees see positive developments regarding the willingness of private investors to invest in environmentally sustainable ventures:

“I think they (investors) are looking for sustainable or environmental solutions. They want to do something good.” – Entrepreneur E

An impression shared by most of the interviewees is that the willingness of private investors to back environmental ventures and sustainable solutions has been increasing in recent years. The view that more and more investors are looking for opportunities to use their money in order to “do something good” has been expressed multiple times within separate interviews, such as in the interview with Entrepreneur J:

“The trend is in the right direction (…), there are a lot people that have earned money on IT related start-ups and now they want to do something good for the world.” – Entrepreneur J

Indeed – although the general opinion voiced during interviews was that not enough private investment is being made in environmental businesses – awareness for the need for environmentally sustainable solutions is perceived as being on the rise amongst private investors. This is reflected by the following statement by Entrepreneur A:

“I think they (private investors) are starting to ask for this type of thing, you know, they feel good about doing something in this area.” – Entrepreneur A

Increasing awareness appears to be not only limited to private individuals. Large companies are perceived as increasing their investment efforts in environmental solutions:

“I would say it is getting easier (for environmental ventures to obtain private funding). IKEA and other big companies that want to re-invest, they are looking for this type of investment.” – Entrepreneur A
This opinion is shared by Entrepreneur C, who believes large companies increasingly add a sustainability focus to their way of doing business and invest into environmental ventures:

“(…) it is easy for them to motivate why they should help sustainability projects in some way. (…) In a lot of companies, they have money dedicated to these kinds of projects. (…) I think there is a benefit to have a sustainability focus I think.” – Entrepreneur C

This increasing awareness amongst private investors and large corporations, as well as an increased willingness to invest into environmentally sustainable solutions appear to shape an improving environment in which environmental entrepreneurs are looking for private investment. Indeed, some of our interviewees even expressed the opinion that it is easier to attract private investment for environmental entrepreneurs than for traditional entrepreneurs:

“I am not saying it is easy to find money, but it is easier to find money if you can say that you are environmentally friendly.” – Entrepreneur E

Nevertheless, our interviewees generally believed that the ability to attract investment is still closely tied to the ability of the environmental venture to create returns for the investors:

“(…) it is all about showing the return on investment. Even though you have an environmental idea, you need to show that you can generate profits.” – Entrepreneur J

A similar view was expressed by Entrepreneur G, who believes that environmentally friendly solutions need to be able to return profits in order to receive private investment:

“(…) everyone wants to make a good thing with their investment and still make money out of it.” – Entrepreneur G

Besides individual investors and large corporations looking to invest into environmentally sustainable solutions, there are other sources of private funding that environmental entrepreneurs can potentially attract. One such source are philanthropic investors:

“(…) the Bill Gates foundation. One of their bigger investments is “re-inventing the toilet”, it is a challenge to environmental entrepreneurs. Many have tried, but as far as we know no one has succeeded yet.” – Entrepreneur K

Nevertheless, this type of investor seems to play a minor role and none of the entrepreneurs interviewed here have received investment of such sort.

Besides an increasing awareness and willingness to invest in environmental ventures in order to “do something good”, Entrepreneur I is of the opinion that investment in environmental technologies – specifically in renewable energy – are made because of increasing maturity of the technologies:
“Ten years ago, we had a green-tech hype. Now, ten years later, it’s more of a necessity hype or more a necessity-based investment. Ten years ago, batteries were still trendy, hip, it was new technology. Now, we see that it’s a strategic business.” – Entrepreneur I

Public Financial Support

“(…) in the beginning, I think for (the company), they needed to get funding for it to work. And it is quite easy in the Swedish system to get support to pay for institutes.” – Entrepreneur G

All of the environmental entrepreneurs we interviewed have received public financial support in one way or another – through grants, public procurement, funding, seed money, competitions, etc. The sources of this financial support vary greatly between ventures. There is a number of different public institutions that provide such support for environmental ventures. One institution that has been supporting several of the entrepreneurs interviewed is Almi, a Swedish state-owned investment group. Other bodies include the Swedish Energy Agency, university owned investment groups like Gothenburg University’s GU Ventures, as well as regional governments.

Financial support for the environmental entrepreneurs interviewed is especially important in the early stages of development. This is reflected by statements made by several interviewees, such as Entrepreneur J:

“In general, we actually survived on prizes and grants until May 2017, when we took on our first seed round.” – Entrepreneur J

Public financial support seems to be especially important for environmental entrepreneurs during product development and the verification of their solutions:

“We get access to some kind of funding through them (Vinnova). They have something called “verifying money” – around 200,000 SEK. So, they have some solutions for you to get early funding.” – Entrepreneur C

“We got money from the Energy Agency to test with biogas plants, quite recently. (…). We have then started to work with a technical consulting company and we got money for that, “verification money”, from Vinnova.” – Entrepreneur K

This early monetary support was often used to employ the services of research institutes or technical consultancy groups, who helped with research on the solutions or technical aspects of it:
“You can get money to pay an institute to do tests or verifications, or pay a consultant (...).”
– Entrepreneur G

Another important use of early financial support is the development of prototypes:

“One funding party at the moment is the department of energy, they are financing half the development we are doing at the moment.” – Entrepreneur A

Besides the most obvious benefits of public funding, Entrepreneur G believes that an additional benefit public support can have is the credit or credibility the environmental venture gets through this funding:

“(…) we got investment from InnoEnergy (...). And this has given us also good credit (...).” – Entrepreneur G

In addition to the direct support through investment, grants or loans, public institutions also play an important role in supporting environmental entrepreneurs through public procurement. On the one side, public procurement can help to create new markets:

“(…) in California, a lot of public institutions bought electric cars and made the market so big that the investors became interested. That is a market, even if it is only the public (buying the solution).” – Entrepreneur K

On the other side, public procurement can help environmental entrepreneurs to show their viability and can help “lower the barrier” for future clients:

“Public procurement, it is getting more and more popular to invest into environmental technologies. I think that is one thing that helps a lot of environmental companies. If we can show – like in our case – that we have a customer, (...) that is a really strong thing. That is really lowering the barrier for our next clients.” – Entrepreneur G

But it is not just public procurement increasingly focusing on supporting environmental entrepreneurs. According to the interviewees, public institutions are increasingly looking to provide financial support specifically for environmental ventures. Indeed, for some institutions it may even be a condition for the venture to focus on sustainability or have an environmental focus in order to obtain the support:

“I think there are some public grants that demand that you have to think about the sustainability of your idea. (...) in case of one EU grant, we would not have received that if we did not have this environmental aspect in our business.” – Entrepreneur J

Furthermore, Entrepreneur C believes that public institutions prefer to fund sustainable solutions:
"I guess they (public institutions) can easily motivate why it is [our company] in this incubator. They say, “He is an environmental entrepreneur and they are doing a lot of good stuff.” And I guess it’s easier for them to motivate for anyone that I should be part of it.” – Entrepreneur C

This is further underlined by Entrepreneur E’s belief, highlighting that investment in environmentally sustainable solutions is getting more and more popular in general:

“Both private and public (funding parties), they want to be environmentally friendly.” – Entrepreneur E

Nevertheless, despite the importance of public financial support – especially in the early stages of the venture development – there exists some criticism of some of the current support systems. One such criticism was aimed at a type of financial support where the entrepreneur was required to make a major purchase himself, receiving the grant only after the purchase would have been made:

“A lot of money is closely linked with having to pay someone, showing an invoice that you paid someone or bought some kind of equipment. That is quite problematic for a small company that doesn’t have any income. It is like lifting yourself by pulling your own hair.” – Entrepreneur K

Getting Financing through Competitions and Networks

In order to obtain both private investment as well as financial support from public institutions, many of the entrepreneurs we interviewed have relied on competitions as well as business networks.

“(…) we entered a competition last year and we received 100,000 SEK and there were a lot of these smaller competitions that gave us some initial funds.” – Entrepreneur J

Competitions are another source where some of the environmental entrepreneurs we interviewed have looked for financing opportunities. These competitions can be hosted both by public institutions as well as private companies or philanthropic investors, such as the Bill & Linda Gates foundation. According to one of the business developers we interviewed, there are a number of competitions environmental entrepreneurs can take advantage of:

“There are a lot of them (competitions). You can find many if you just google.” – Business Developer B
Despite this ease of finding competitions perceived by the business developer, some of the entrepreneurs experience the opposite, finding it difficult finding these competitions:

“It is all about finding them (competitions). That is a problem of course. In the beginning, I didn’t know which competitions there were.” – Entrepreneur F

To gain support in this matter, environmental entrepreneurs may rely on their business network:

“I think it was InnoEnergy who suggested we apply for this (competition).” – Entrepreneur G

Several of the environmental entrepreneurs we interviewed are part of some sort of business network – an organization supporting environmental entrepreneurs financially or through their expertise and contacts. From a financial point of view, these organizations can help the companies under their umbrella get access to funding opportunities from investors within their network:

“We are part of the incubator here and that means that I can sit in here. (...). And of course, also their network of both funding and their people around Science Park (name of the network).” – Entrepreneur C

In addition, some of these organizations may even invest themselves in environmental ventures or supply them with funding and support the entrepreneurs in developing the business:

“We are part of their (InnoEnergy) highway programme. With that we have got grants for doing some of the development work. We got some grants when I got employed they could pay some of my salary initially.” – Entrepreneur E

### 4.3 Market Challenges

The role of external market factors has turned out to be an important topic in course of conducting the interviews with the different environmental entrepreneurs and business developers. One aspect of this is the awareness of environmental issues from sides of customers as well as investors.

“[…] we can also see that a lot of customers are trying to rethink and they base their decisions on values now. [...] I mean customers are more conscious now of what they are buying and much more value-driven and thankful and I mean now we can get information all over online and we see what is happening to our world and we need to be more cautious
“about what we buy and I think a lot of customers want to see more sustainable options out there.” – Business Developer B

“It’s only positive [to be environmentally-friendly] I would say. It has not been I would say high but more and more people have understood that the climate threat is a big threat so it’s only good to be in this environmental area.” – Entrepreneur C

The majority of the interviewees of this study recognized the trend of environmental issues becoming a more public topic of higher relevance and observed a rising awareness as well as interest from sides of the market.

“[…] but also from the fact that many companies are realizing that it’s something that will attract more customers. Because companies become more and more aware that we need to do something about sustainability because otherwise they will lose customers so I think it’s more about that.“ – Entrepreneur J

Hereby, this rising awareness would not only apply to consumers but also to companies which are trying to serve these consumers who are more aware of environmental issues. Nevertheless, despite of a positive trend, the majority of the interviewees still described the current awareness from consumers as well as corporations as a major challenge for their business operations.

“When we look at surveys done on 90s kids or young adults we see that environmental awareness and sustainability awareness is much, much more higher compared to youngsters born in the 70s, 60s or 40s. Way higher. But when it comes to who actually drives with purchase the environmental awareness today it’s mainly those from the 60s, 70s and 80s. There’s a discrepancy between what you actually think and what you do. Which tells me that we have been good at educating people born in the 90s […] but it’s not those who are currently making the important decisions and I see that as an issue.” – Entrepreneur I

In spite of a general rising awareness of environmental issues and the motivation for change it has been considered a major issue that this rising awareness can be mainly found within younger generations. However, as it is the older generations who are currently in charge of making important (business) decisions, this rising awareness would not translate into action yet.

“But now [companies] are actually really starting to talk about changing the business model from the ground in order to be sustainable and to be relevant in the future... So I think something is really happening but it’s still in transition. I think there are a lot of companies which are still a bit confused about how and what they should do. Because the technology they have different ones to choose and they do not really know what is the best one and some of them are waiting for the holy grail that will solve everything for them from the research side but that’s just weird.” – Entrepreneur J
“Because I think we as consumers have become more open to actually pay a little extra to buy organic goods or organic labels and so on. It is coming a little bit more into business, but it has been a lot slower there” – Entrepreneur G

Other interviewees experience a change and transition of attitude happening from the business side. However, this would happen at a much slower pace than e.g. from the consumer side. Consequently, this has led to a challenge to environmental entrepreneurs who target companies as their potential customers.

“[…] if you look at the business plans of most bigger companies, everyone has written that down about sustainability and including that in the business plan, but not enough measures are being taken to actually achieve the goals that have been abstractly set out right now, because mostly everything is very abstract. They haven’t put it so concrete right now.” – Entrepreneur F

This is enhanced by Entrepreneur F who also pointed out the changing attitude of companies and businesses which, however, so far mostly would have failed to be put into action. As a consequence, they would be a lot more action which is required to be taken by these businesses as e.g. setting a higher focus on new environmental solutions by these environmental entrepreneurs.

Need to Educate Customers

“[…] I guess we see, with a lot of these environmental aspects and new ideas we will that we need to educate people in some way […] I feel we really need to work on how we put the information out to the end-users. Because the end-user is the main goal. […] What we are trying to do is to change the behavior of people. And that’s always difficult to do that. It always takes time to change the behaviors of people. Of course with the sustainability aspect it’s pretty, not everybody is on board yet that we need to do more, we have definitely seen from end-users that it is difficult to understand for them to see why they should use it.” – Entrepreneur C

Based on this issue, e.g. Entrepreneur C underlines the necessity and challenge for environmental entrepreneurs to educate their customers and make them aware of not only their product or service itself, but also why it is important in regard to its environmental value.

Environmental Aspect Alone is Insufficient

“Of course, the environmental friendliness as well but if we only had the environmental friendliness then ‘Yeah it would be great and so’ but it would not be enough. It is other aspects that is really driving interest in that one.” – Entrepreneur J
“That is kind of trying to work with value pricing and to use the extra benefit of being environmentally friendly. What we realize is that generally that is not enough. I mean, they want to be environmentally friendly, but not per se. It is not worth the risk to get a higher cost investing in something environmental, if there is no law that they breach if they don’t change. Then it is better to stay the way it is until the technology is better […]. It is generally not enough with the environmental aspect. […] if we come down to the same price, it is not like “okay, let’s shift”, because they still have the big risk of stopping their production. That means that either they have to see an even higher value than just the environmental aspect, or the environmental aspect giving them the opportunity to market, we actually should be a bit lower.” – Entrepreneur G

The majority of the interviewees have stated that having the environmental-friendly factor alone would be usually not enough in order to attract a customer’s interest. It would mainly be other factors that drive the main interest which, in many cases, was reflected in having an economical and profitable solution. Entrepreneur G has enhanced this by stating that combining financial and practical benefits of a product or service together with an environmental-friendly factor would represent an optimal combination.

Competing on Same Terms as Non-Sustainable Enterprises

“And what is hard with the environmental ideas sometimes is that they have to compete on the same terms a lot of the times as non-sustainable enterprises which can be very difficult. And to be able to compete on prices, depending on what the customer actually are looking for. A lot of customers are still thinking a lot about price and “see okay I’m going to take this product because it’s cheaper. […] So it’s always a question of price in the end.” – Business Developer B

“Still since we as customers are primarily focused on price, then environmental products or sustainable products are more or less premium-products in every segment of business. […] So is there room for a premium product in this segment? Are there any customers for it? […] So what we can do with the products that we have and start developing those and in the meantime work a lot with our supply chain to get them to make the most sustainable alternative cheaper than the unsustainable one? I would say a mature company will still be focused on making profit but a part of how they do business is being a good company, socially and also environmentally aware. Those are the mature companies. The vast majority will always be focused on making money.” – Entrepreneur I

“Because you need to have something that is not only sustainable I think in order to be able to generate, you need to have another buzz word to generate the money in a good way.” – Entrepreneur J
Another issue that business developers as well as entrepreneurs have pointed out is the need for environmental entrepreneurs to be able to compete with non-sustainable enterprises on the same terms. Consequently, their products and solutions need to have an environmental value as well as result in cost savings or would otherwise be perceived as premium products which have a smaller market. Therefore, solutions of environmental entrepreneurs often need to combine elements of being more efficient and cheaper with their environmental factor in order to be more attractive to customers compared to a cheaper non-sustainable solution.

**Defining and Communicating the Environmental Value**

“*What’s best? If we reduce or CO2 footprint by 10 tons or reduce the use of toxic chemicals by 250 kilos per year? What’s best for the environment? Quantify that. It’s not possible.*” – Entrepreneur I

“It is always hard to quantify green value. You tend to focus mainly on the technical side and technical aspects and so on. [...] And then it is not always easy to communicate the environmental value.” – Entrepreneur G

Several interviewees have expressed the difficulty of defining the actual environmental value their product or service would result in. As a consequence, they would have felt limited in being able to effectively communicate their environmental value to the client and to make it attractive.

“*So, what is environmentally friendly and what is not? That is a problem for us being in the environmental business.*” – Entrepreneur E

Based on this, Entrepreneur E expressed the difficulty in stating what can be considered as environmental-friendly and what not as there would be a danger of communicating a false environmental product or service characteristic to the market.

**Danger of Being Perceived as “Greenwashing”**

“*Sometimes I can see ideas that are definitely aimed towards earning profit. They play this environmental card. But you can see that it’s not really environmentally friendly. That it’s not really an environmentally friendly idea. I think that also contributes that a lot of customers are very cautious also because you’re so afraid of greenwashing with companies and it’s such a hard world for customers now to be able to make the right decisions because you never know if it is. It says it’s sustainable but it’s really not. It’s hard with all the choices that you make as a customer*” – Business Developer B

“One thing would be that everybody is talking about environmental aspects. Then it is always hard for the clients to understand, is it real or is it just green washing? Green washing would be an issue. [...] I see a risk for that.” – Entrepreneur G
The high degree of greenwashing and companies claiming to offer environmental-friendly products or services which are in fact not has made the customer more cautious according to interviewees in this study. Further, this would have made it more difficult for environmental entrepreneurs today to communicate the environmental value of their solution to the market.

“It is a creepy situation. Environmental technology, cleantech technology can support bad business. Green washing. There is a big problem.” – Entrepreneur D

Another concern one company has raised in this regard is not related to being considered as greenwashing themselves but rather by being accused of supporting other companies with their solutions to green wash. This would create a conflict of moral and complicate the process of how to select its customers.

Location-related Challenges

“Sweden is too small.” – Entrepreneur E

“Today, energy in Sweden is very cheap. So it is really tough to get a new product on the market to compete with nuclear power prices, for example.” – Entrepreneur A

“In Sweden we have a lot of clean water around us all the time. So Sweden is not really our target country. We are in the wrong country. Because Sweden is just selling other water cleaning technology. Sweden is not really forward in getting their own water cleaning technologies because we have a lot of water already. You know we have drinking water when we flush the toilet. It’s quite an exclusive club considering there are so many people in the world without water. [...] But we are certain that we are not going to be in Sweden even if we wanted to.” – Entrepreneur D

“So we in Sweden, that’s enough for Sweden we don’t need those wind turbines which is, we don’t really agree with that but our technology needs deep waters so Sweden is not really our first market. We have other areas in the world that are more interesting for us.” – Entrepreneur H

Several concerns regarding Sweden as country to operate in have been expressed by the interviewees of this study. Due to its relatively small population number it would represent a small market, especially for consumer products. Further, the country is already comparatively advanced in regards with clean technologies which would make it rather difficult for new ones. Apart from that there would be a high focus on selling already existing technologies on the market rather than innovations. Another more specific issue has been expressed by Company H as the company is dependent on specific natural conditions, in this case water conditions, which are not sufficient in Sweden and therefore force the company to internationalize.
Internationalization

“I assume that we could have business in Germany. But to go abroad you need to have a basis, where you can say: “this is what we did at home.”” - Entrepreneur E

The difficulty of internationalizing without having achieved successful results in the home country Sweden yet has represented a challenge for some of the environmental entrepreneurs. There would be a dilemma that Sweden is not the appropriate country for them to do business in while they see the need to have a functioning business in their home country in order to be successful abroad.

“More or less all countries have different support systems. [...] A little bit, because you need to get an understanding of the different countries. In the UK they have something called “renewable heat incentives” where you actually get paid if we have one kitchen manufacturer there that wants to replace their old boiler with our system. If they instead put in renewable energy to produce heat in their facilities, they get funding from the government for every kilowatt they utilize in the facilities. That’s another type of system that you need to understand.” – Entrepreneur G

Apart from that, most of the environmental entrepreneurs would be directly affected by regulations and incentives which would differ tremendously in each country and increase the complexity of internationalizing. Therefore, the international regulation complexity and even discrepancies would directly affect their business operations when going abroad.
5. Discussion

In the following section we interpret and discuss our empirical findings. Hereby, we refer back to our provided theoretical framework and compare these findings with existing literature to identify similarities, differences as well as contributing results to theory.

5.1 Public Institutions and Government

Our research as well as studies by other authors identified a high influence and an important role of public institutions and the government in regards with the development of environmental entrepreneurship within a country. In the following we discuss the ambivalent role of institutions in this context and the entrepreneurs’ survival challenges connected to legislation.

Ambivalent Role of Institutional and Government Support

In course of reviewing literature on institutional theory and its influence on entrepreneurs, it has become evident that it can have a direct impact on entrepreneurial success or failure. This has been confirmed by our empirical findings which implied both, positive as well as negative influences through the interaction with public institutions and government. This has also been supported by authors as Bruton & Ahlstrom (2003) and Scott (2008) who highlight that entrepreneurs can be enabled as well as constrained by institutions in the environment they operate in. Most of the interviewed entrepreneurs received public support in different forms as financing or consultancy which represented a positive influence on their business operations and chances of survival and enabled them in running their businesses. However, based on our empirical findings it also has become evident that most institutional support measures would be mainly focused on businesses operating in Sweden. This creates a challenge for those environmental entrepreneurs who are forced to operate internationally due to various factors as market size, technology market or natural conditions in Sweden which has aggravated their business operations. Furthermore, most of our interviewees described the current institutional support in form of consultancy as insufficient as these would be mostly lacking adequate knowledge of their business segments which is crucial in order to operate effectively. Consequently, their need for public support in form of consultancy is insufficiently met at the moment when operating in Sweden or when trying to operate internationally which creates an issue for them.

Proposition 1: Those environmental entrepreneurs in Sweden who intend to operate in other countries face difficulties in obtaining institutional support from Sweden.

Proposition 2: Institutional support in form of consultancy is currently lacking adequate knowledge of the environmental entrepreneurs’ business segments and is insufficient.
As outlined by e.g. Baumol, Litan & Schramm (2007) our findings showed that economic incentives played a relevant role for some of the entrepreneurs’ businesses if these incentives were focused on their potential customers rather than on the entrepreneurs and their business itself. Nevertheless, we also identified constraining effects on the environmental entrepreneurs in terms of legislation. Sudden changes of regulations within Sweden but also on a EU level were considered a continuous risk for entrepreneurs in the environmental segment endangering them to be forced out of business due to changes in legislation. This finding implies a strong dependency of environmental entrepreneurs on legislation and regulations. Hereby, it needs to be pointed out that this can strongly vary from the industry the environmental entrepreneur's individual business is located in as e.g. our interviewees operating in the clean-tech segment were more dependent on it as entrepreneurs in other fields.

**Proposition 3: Depending on the business segment, environmental entrepreneurs are at risk to be forced out of business due to sudden changes of regulations in environmental segments.**

Previous research has also implied that governmental force can have the ability to resolve environmental issues by rewarding and supporting entrepreneurial behavior through institutions while discouraging an environmentally degrading one (Dean & McMullen, 2007). While most entrepreneurs appreciated the opportunity of institutional support it was usually their own motivation to have a positive impact on the environment rather than the perspective of a reward incentive to start up their businesses which has been evident with all of our interviewed entrepreneurs. Further, some of our findings implied the dependency factor again, in this case in terms of the government creating the business for the environmental entrepreneurs. E.g. as outlined in the empirical findings, one of the interviewed environmental entrepreneurs will not have a business opportunity until the government enforces a new law in 2020 which forces potential customers to switch to this entrepreneur’s solution. Otherwise these potential customers would not see the necessity or are not willing to make the effort nor the investment to switch to their more environmental-friendly solution. Although this necessity does not apply to every environmental entrepreneur, this strongly underlines the dependency challenge of some of them on the government and assigns a greater role to it for their business success. Moreover, this confirms the institutional impact on business performance and development in the market mentioned by Bruton et al. (2010). Apart from that, this puts emphasis on the necessity of the government to discourage environmentally degrading behavior by forcing potential customers through legislation to switch to more environmental-friendly solutions and hereby create a business for environmental entrepreneurs. This identified dependency exceeds previous literature as it not only highlights the presence of supporting and constraining effects of institutional influence but also its necessity for various environmental entrepreneurs to be able to start their businesses in the first place.
Proposition 4: Environmental entrepreneurs are at risk of not having business opportunities until legislation enforces or incentivizes the switch to their solution. They are therefore highly dependent on legislation.

Complex and Time-Consuming Bureaucracy

Applying for institutional support has required applications with different requirements from all our interviewed environmental entrepreneurs. Previous literature (Isaak, 1997) has outlined that bureaucracy can entail an inhibiting role on environmentally-oriented entrepreneurship. Our findings have shown that in regards with the application process for institutional support, bureaucracy was perceived as a rather complex and especially time-consuming process. This has been stated by both, environmental entrepreneurs as well as business developers. Here it was expressed that a large amount of time resources was necessary to deal with bureaucracy in this context which could have been utilized more efficiently in other ways. Moreover, several entrepreneurs and the business developers would mostly have difficulties with dealing with this sort of bureaucratic tasks which underlines its challenge due to a complexity and time-consuming characteristic.

Proposition 5: Bureaucracy in terms of applications for institutional support represent a complex and time-consuming issue for environmental entrepreneurs.

Complex and Inconsistent Regulations

Our findings have shown that regulations can have a positive influence on environmental entrepreneurship. Previous literature has highlighted a potential uplifting effect of government policies and regulations on traditional entrepreneurship, provided that there is no inconsistency among these policies and regulations (Obaji & Olugu, 2014). Our empirical findings have revealed that not only an inconsistency provides a challenge for environmental entrepreneurs but also an overall complexity of regulation which would be difficult to understand and therefore to follow. Moreover, some of the environmental entrepreneurs have experienced inconsistencies among different policies which again increase its difficulty. Hereby, this would occur on both levels, in Sweden but also on a European Union level. This, being accompanied by a highly perceived strictness and sudden changes of policies in the environmental segment, represents an even greater challenge for environmental entrepreneurs when considering their identified dependency on these regulations and policies for their businesses.

Proposition 6: A greater regulation complexity and inconsistency on a Swedish as well as on a European Union level represent a challenge for environmental entrepreneurs.

As a result, it becomes evident that institutional support has supportive and encouraging effects while negative influences were also confirmed and stood out. Some of the support
measures targeted at environmental entrepreneurs are currently insufficient and cause more effort rather than result in actual benefits. Further, a strong dependency on the intervention from the government side became visible creating issues for environmental entrepreneurs.

5.2 Financial Challenges

Challenges related to financing entrepreneurial ventures have been revealed by environmental entrepreneurs within all development stages and industries. These challenges are an omnipresent challenge of survival for most environmental entrepreneurs. In the following subsections, we discuss environmental entrepreneurs’ difficulties in attracting private investment, the role of governmental institutions in financially supporting environmental entrepreneurs in their quest for survival and how environmental entrepreneurs can manage to access relatively informal sources of funding to finance the early developmental stages.

Private Investment

Obtaining private investment from private investors is generally relatively more difficult for environmental entrepreneurs than for traditional entrepreneurs (Gast et al., 2017; Linnanen, 2002). Of those nine entrepreneurs interviewed by us, only three have actively pursued and succeeded in getting private investment in their ventures. The literature on environmental entrepreneurship suggests a link between a perceived lack of financial and business knowledge of environmental entrepreneurs and a reluctance by investors to invest into these entrepreneurs’ companies (Linnanen, 2002; Bergset, 2015). And indeed, the environmental entrepreneurs within our sample who have obtained private investment or who are confident of obtaining private investment once they actively start pursuing it all – with one exception – have considerable experience in starting or running a business or have received university education in relevant business fields (such as entrepreneurship).

Proposition 7: Obtaining private investment is more challenging for environmental entrepreneurs lacking business experience or business education.

Nevertheless, despite the difficulty of obtaining private investment as environmental entrepreneur, there seems to be a trend of growing awareness and an increasing interest in environmental ventures by private investors. While Linnanen (2002) believes that environmental entrepreneurs find it difficult to find investors who share their objectives and ideals, the interviews revealed a “sufficient” base of private investors who “think this is important”. Furthermore, the willingness of private investors to invest – or at least having an interest in the investment opportunities – in environmental ventures was perceived to be increasing by the interviewees. One potential explanation for this general trend might be given by Bergset (2015), who believes that herd behavior by private investors could be an explanation why investment into clean tech has become increasingly popular.
Proposition 8: Awareness for environmental solutions and willingness to invest in these solutions is increasing amongst investors.

According to the literature, one of the reasons why obtaining private investment is generally more difficult for environmental entrepreneurs are the typically longer development times for their solutions (Linnanen 2002; Bergset, 2015, Randjelovic et al., 2003). According to Bergset (2015), the time-delay trap avoiding investors from placing equal importance on the future as on the present (represented by discount rates) may provide an explanation why investors may be dissuaded from investing into solutions that tackle complex, long-term challenges such as climate change. This observation is congruent with our findings, with many of our interviewees bemoaning a perceived short-term focus and unrealistic return expectations by private investors.

Proposition 9: Typically, longer investment horizons and relatively large up-front capital requirements make it generally more difficult for environmental entrepreneurs to attract private investment.

Public Financial Support

Much of the literature on financing of environmental entrepreneurs is focusing on private investment, especially the role of venture capital (e.g. Bocken, 2015). This theoretical focus on private investment as financing sources of environmental entrepreneurs appears to be at odds with the financing practices of environmental entrepreneurs in reality. For example, none of the entrepreneurs interviewed by us have received financing in the form of venture capital. And while private investment generally only plays a minor role for most of the environmental entrepreneurs in our sample, all of them have received some form of governmental or institutional financial support. According to Bergset (2015) the early stages of startups in general – especially in Europe - can be characterised by the usage of public funding (Bergset, 2015). The collected data gives clear evidence on the important role of funding through governmental institutions for environmental entrepreneurs. Many of the entrepreneurs in our sample expressed that they survived the early development stages due to these funds, or stated that they believe the early development process would have been much harder, if not impossible to survive without these funds. Despite this apparently vital role of public financial support for environmental entrepreneurs, little research exists on it, neither within the environmental or sustainable entrepreneurship sphere, nor within the field of entrepreneurship in general. While Dees (2007) highlights the importance of creating supportive governmental institutions and frameworks supporting “social entrepreneurship” (including what we define here as environmental entrepreneurship), little attention is given by the author on the role of direct funding of social entrepreneurs by public institutions. Similarly, Meek et al. (2010) focus their research on the importance of an institutional framework for fostering environmental entrepreneurship. The relevance of studying the role of public financial support and its benefits in fostering environmental entrepreneurship are also highlighted by Preuss (2007), who argues that focusing only on the framework-setting
powers of government overlooks other significant ways how governments can impact on sustainable development.

**Proposition 10: Direct financial support by public institutions is of major importance to the survival of environmental entrepreneurs during the early stages of the venture.**

In the early development stages, entrepreneurs generally rely on more informal sources of finance, such as business angels, family and friends and their own funds (Bergset, 2015), as during these stages obtaining private investment is relatively difficult. This further underlines the importance of the public funds environmental entrepreneurs receive. These funds – awarded through different institutions - are especially targeted at helping the environmental entrepreneurs in developing their solutions, conducting research and hiring consultants. Indeed, our interviews revealed that these kinds of funds are generally more easily available to environmental entrepreneurs than to traditional entrepreneurs, or are sometimes even limited to environmental entrepreneurs only. As such, they constitute an important source of finance for the development and improvement of environmental solutions, which characterize the early development stages of an environmental venture.

Besides direct public financial support, the importance of public procurement in environmental entrepreneurship was highlighted by two of the entrepreneurs within our sample. This perceived importance is supported by the findings of Preuss (2007), who highlights the important role of local governments in fostering sustainable development through public procurement. Nevertheless, those entrepreneurs who highlighted the importance of public procurement also agreed that not enough is being done yet by governments and that public procurement should play an even bigger role in supporting environmental entrepreneurs. To support governments in developing their public procurement strategies towards better fostering environmental entrepreneurship, further research is needed. Preuss (2007), for example, calls for future researchers to investigate the potential benefits of increased cooperation between governments of municipal, regional and national levels, private companies and other public institutions.

**Proposition 11: Public procurement is a potential source of financing that is relatively easier to access for environmental entrepreneurs than for traditional entrepreneurs.**

**Accessing Finance through Competitions and Business Networks**

Most of the entrepreneurs in our sample used multiple sources for obtaining the funds necessary to launch and operate their businesses. Besides private investment and public financial support, e.g. through grants or public procurement, entrepreneurial competitions and business networks were mentioned as important sources of initial funding by several of our interviewees.
Start-up competitions can play an important role for environmental entrepreneurs, especially during the early stages of their business development. Besides the positive impact these competitions can have for the testing of hypothesis and the planned strategy of environmental entrepreneurs (e.g. through feedback from a knowledgeable jury), the financing opportunities (e.g. prize money, direct investment from jury) through such competitions can also provide environmental entrepreneurs with important early-stage funding. Indeed, one of the entrepreneurs within our sample “survived” the early years on prize money from competitions and public funding, another obtained financing for his venture ideas exclusively through competitions. Moreover, the importance of competitions in gaining access to funding for environmental entrepreneurs is further underlined by the number of different competitions focused exclusively at environmental or sustainable start-ups. Although our insights highlight the important role of start-up competitions in early-stage funding for environmental entrepreneurs, little is known about the significance of these competitions from an environmental entrepreneurship literature perspective. While the potential benefit of entrepreneurial competitions in attracting venture capital for environmental entrepreneurs (Bocken, 2015) or the role of local governments in hosting competitions for environmental entrepreneurs (Isaak, 2002) are mentioned in extant literature, little concrete knowledge exists on the specific role entrepreneurial competitions play in financing - especially during the early developmental stages - for environmental entrepreneurs.

Proposition 12: Entrepreneurial competitions provide an important source of early-stage funding for environmental entrepreneurs.

Besides participating in competitions, several of the entrepreneurs we interviewed had gained access to funding through organized business networks. Here, we use the term “network” not in the traditional sense of the sum of contacts of the entrepreneur, but rather as actual organizations that facilitate the operations of its members. This includes organizations operating incubators or accelerators, university investment groups that provide the venture both with financial resources as well as competences or organizations that try to facilitate the communication and exchange of experiences and ideas between its members. The importance of such organized networks was highlighted by the fact that most of our interviewed entrepreneurs are being or have been supported by at least one organized network. This matches with Bocken’s (2015) view, who sees such organizations as important actors supporting young firms. For environmental entrepreneurs, these organized networks seems to hold special importance, specifically for accessing funding. While some of the entrepreneurs we interviewed had received direct funding from these organizations, an important financial benefit of being part of these networks for most of these entrepreneurs was the network’s ability to help connect the environmental ventures with potential investors. As such, these organized business network can form an important link between environmental entrepreneurs and investors looking to invest in environmental ventures.

Proposition 13: Organized networks play an important role in connecting environmental entrepreneurs with potential investors.
Proposition 14: Organized networks are potentially an important early-stage source of direct investment for environmental entrepreneurs.

5.3 Market Challenges

Our findings have shown that environmental entrepreneurs face various market challenges in terms of their customers, of how to communicate the environmental value of their solutions and how to differentiate themselves from the competition. Furthermore, challenges have become evident which occur while operating on the Swedish market or internationalizing within the European Union. The findings will be discussed in the following.

Customer Awareness

Previous literature has outlined the relevance of an environmental awareness as supporting factor for creating markets for environmental solutions and technologies (Linannen, 2002). However, a positive change of this awareness would have proven to occur rather slowly. The perception of the interviewed environmental entrepreneurs and business developers has implied similar insights. While there would be a changing awareness of environmental issues and trends, only a minor part of it would translate into action by switching to more environmentally-friendly solutions as offered by these environmental entrepreneurs. This is in line with other research on the consumer awareness and its effect on the consumers’ buying behavior in terms of environmental solutions (e.g. Savita, Kumar, 2010). The positively changing awareness and behavior today reflects a promising trend for environmental entrepreneurs and their solutions, however, it still represents a major challenge for them as there occurs to be a dependency on this awareness and a resulting need for environmental entrepreneurs to educate their potential customers. Further, the changing awareness would occur at a slower pace from a business customer side than from a consumer side which is likely to create more difficulties for those environmental entrepreneurs targeting business clients with their solutions. Higher switching costs and necessary process changes in order to integrate these new solutions are likely to be the main causes for this reluctance creating a major challenge for marketing environmental products and services.

Proposition 15: Environmental entrepreneurs are dependent on the awareness for environmental issues from their customers.

Proposition 16: Environmental entrepreneurs need to educate their customers about environmental issues.

Proposition 17: The awareness increase occurs at a slower pace for business customers than for consumers. This creates a challenge when operating in a business-to-business segment.
Challenge of Communicating an Environmental Value

In order to communicate and market an environmental solution it is highly relevant to define the value of the environmental solution and to let it stand out as a distinguishing factor as e.g. by using a certification system (Vogtländer, Bijma, Brezel, 2002). Hereby, there are different approaches of how environmental ventures communicate their environmental value e.g. by using certifications, environmental policy statements or a focus on carbon footprint or energy usage data. In relation to this, our research has shown that the interviewed environmental entrepreneurs have been struggling to quantify the environmental value of their solution and to define what is environmentally-friendly and what is not. Further, our findings have shown that being environmentally-friendly is usually not enough to attract a customer’s interest and that the combination with practical and financial benefits is required. This is in line with previous research which states that, despite the environmental factor, a reliable financial indicator is the higher interest-driving aspect (Vogtländer, Bijma, Brezel, 2002). Although there is a customer base which is particularly looking for environmental solutions, for the broader customer base it would not be sufficient to use only the environmental factor as basis for a strategic differentiation (Räty, Toppinen, Roos et al., 2016). Consequently, in order to differentiate themselves from non-sustainable solutions on the market, environmental entrepreneurs do not only have to offer an environmentally-friendly solution but also a more profitable and cost-effective one which has created a major challenge for various of the interviewed environmental entrepreneurs.

Proposition 18: Environmental entrepreneurs struggle to quantify the environmental value of their product or service as well as to define what is in fact environmentally friendly and what is not.

Proposition 19: Being environmentally friendly is likely to be insufficient as a base for strategic differentiation. The environmental factor needs to be combined with other financial and practical benefits to ensure a competitiveness on the market.

When communicating an environmental value another challenge which has become evident is the risk of being perceived as a greenwashing company or organization. Previous literature has outlined the increasing number of greenwashing incidents having negative effects on consumer as well as investor confidence for environmental products and services (Delmas, Burbano, 2011). An increased skepticism of consumers and customers therefore requires high transparency and the communication of a reliable indicator for the positive environmental impact of the product or service, adding further difficulties for environmental entrepreneurs.

Proposition 20: Environmental entrepreneurs face the risk of being perceived as “greenwashers”.
Challenges on Swedish and International Markets

As outlined within this study and in previous literature, externalities and forms of market failures can result in an environmental degradation which creates opportunities for environmental entrepreneurs in specific geographic markets (e.g. Dean, McMullen, 2007). However, our findings have shown that certain geographic markets can also provide challenges. Those environmental entrepreneurs operating in the clean-tech segment are facing the challenge that Sweden is already relatively advanced in various clean-tech segments in comparison to other countries. As a result, it becomes certainly difficult for environmental entrepreneurs trying to target those clean-tech industries. Moreover, this implies that these entrepreneurs might face an even greater competition or higher resistance to change which aggravates the performance on an advanced market. However, based on our findings we cannot state whether all environmental entrepreneurs struggle to operate in Sweden as operating country for their business. Nevertheless, speaking for those interviewees who face difficulties while operating in Sweden as a market, they are or will be forced to internationalize and take their businesses to other countries which results in internationalization challenges for them. A specific challenge for environmental entrepreneurs in this context, which we have also outlined before, is the complexity of regulations and dependency of several environmental entrepreneurs on these. This challenge is then being increased by international regulations and policies not interacting or even juxtaposing each other despite being enforced on a European Union level.

Proposition 21: Those environmental entrepreneurs who are forced to internationalize face internationalization challenges due regulation complexities and a dependency on legislation.
6. Limitations

Like is the case with any research, this study is characterized by certain limitations.

Firstly, there are certain limitations regarding the sample of interviewees. Our study is set in an environment that not only concerns environmental entrepreneurs themselves, but also the various stakeholders within the sphere surrounding their venture. Nevertheless, our sample of interviewees only includes environmental entrepreneurs or persons directly involved in the decision-making of environmental ventures as well as CSR business consultants. While further insights might have been generated through interviewing additional stakeholders - such as policy makers, limitations on time and the availability of suitable interview candidates meant that we preferred to interview persons with first-hand experiences with the challenges of venture survival. Further, the sampled environmental entrepreneurs differ in terms of industry and development stage of their ventures, past experience and background, which makes a clear comparison more difficult. However, this diversity in selection was sought on purpose, as we aimed to gain a broad insight into environmental entrepreneurs in general and build the foundation for future research into the field. In addition - as the focus of this study is to investigate the challenges to survival of environmental entrepreneurs - important insights might have been gained by including environmental entrepreneurs who have failed in ensuring the survival of their venture. Due to the difficulty in finding environmental entrepreneurs with experience in failure, especially when considering the time limitations of this study, we were unable to include such cases in our sample.

Secondly, this study is geographically limited. Due to time and budget restrictions, interviews were exclusively conducted in Sweden, with entrepreneurs and business consultants based in Sweden. This geographic focus makes it difficult to judge the potential influence of various factors, such as culture and national policies, on our findings. Additionally, while all interviews were conducted in English, none of our interviewees were native speakers of English. This may have a negative impact on our results, as meanings could be misinterpreted or misunderstood. Nevertheless, all interviewees showed high degrees of proficiency in their use of English, making this only a minor concern regarding the quality of our research. Despite these geographic influences, we are convinced of the contributions this study makes to the field of environmental entrepreneurship in general.

Finally, as we consider this study to be exploratory in nature, building a foundation for future research, we did not focus our investigation on the identification of challenges within a specific area (e.g., only financial challenges). Rather, we want to provide an insight into different challenge areas in general, providing future researchers with an understanding of environmental entrepreneurs and the various survival challenges they face. Further research is required to closer examine the survival challenges identified here or even build on the survival challenges this study unveils.
7. Future Research

This thesis intends to be an explorative study which shall represent the basis for further research in this field in the future. In the following we specify different suggestions in order to collect further insights into the field that this study aims to provide access to.

Our findings have outlined challenges for environmental entrepreneurs in different areas as financing or market challenges. Based on our findings, future studies might focus on one particular area of challenges (e.g. financing) and collect further insights into this aspect by adapting one focus rather than having a broad approach as the one that we utilized.

Within our research we have interviewed environmental entrepreneurs from different industries. We suggest conducting a research focusing on entrepreneurs from the same industry in order to enable a higher comparability between the different insights. Hereby, we also suggest researching specific cases on a long-term basis. By conducting longitudinal case studies researchers should be able to directly observe survival challenges that environmental entrepreneurs are facing which could provide the results with an even higher reliability.

Furthermore, we also suggest looking at specific cases of environmental entrepreneurs who have failed with their ventures. By analyzing these cases, future research should focus on those particular survival challenges which ultimately led to the failure. By conducting a multiple case study with this focus, future research might answer the question whether it is the same challenges that led to a failure of the venture.

After conducting further research in one country as e.g. Sweden, we suggest applying a cross-country comparison of survival challenges of environmental entrepreneurs in order to identify potential patterns as well as differences. Hereby, a focus on the role of institutional and government influence might be recommended as our findings have shown that these can broadly differ depending on the country of operation.

At last, we recommend testing the individual challenges, which have been identified through qualitative research, by applying a quantitative research approach. Thereby, hypotheses regarding identified survival challenges can be tested e.g. through questionnaires in order to prove the validity of previous research.

8. Conclusion

This thesis is designed as an explorative study into the survival challenges of the ventures of environmental entrepreneurs. Its intention is to serve as a basis for future research into the field of environmental entrepreneurship, a relatively new and still fragmented research field.
The theoretical contributions of this study are on the one hand an extension to the current literature mentioning aspects on the challenges of environmental entrepreneurs. Hereby we contribute important insights towards research on financial challenges of environmental entrepreneurs, such as the dependency of early-stage environmental ventures on public financial support, as well as market challenges, such as the increased need for competitiveness of environmental solutions. On the other hand, we add an institutional dimension to an existing categorization of challenges of environmental entrepreneurs. Hereby, we provide strong evidence for an ambivalent role of public institutions and the government, influencing environmental entrepreneurship with encouraging as well as constraining factors. Further, we highlight the dependency of environmental entrepreneurs’ survival on current and future legislation. Finally, we highlight the relevance of future research into the field and provide suggestions for future studies.

This study further provides practical insights for various stakeholders within environmental entrepreneurship.

Firstly, we present important insights for policy makers and public institutions. Based on these, we recommend facilitating consultancy support with specific knowledge of the relevant business segments for environmental entrepreneurs. Public institutions should consider supporting also those environmental entrepreneurs based in the home country but who, due to various factors, are forced to internationalize. In addition, we advise reviewing and simplifying current requirements and processes (e.g. when applying for funding) to reduce complexity and time consumption. Similarly, current regulations should be reviewed for inconsistencies and unnecessary complexities, on a national as well as a supranational level.

Secondly, insights for environmental entrepreneurs are provided. Environmental entrepreneurs should put emphasis on the quantification and communication of the environmental value they provide. However, environmental entrepreneurs should not overly rely on the environmental factor of their solution as the sole basis of strategic differentiation.

Finally, management consultants and business developer of environmental entrepreneurs can benefit from the various insights provided by this study, getting a better understanding of the requirements and challenges of their clients.

With this study, we aim to contribute towards a better understanding of the survival challenges of environmental entrepreneurs and provide policy makers and public institutions with the insights necessary for providing effective support measures. In the long-term, this should have a positive impact on the survival rate of environmental entrepreneurs and thereby contribute towards an environmentally sustainable development in the future.
9. References


Appendix

Appendix 1: Interview guide – Environmental entrepreneurs

**Formalities**
1. Introducing ourselves
2. Asking for permission to record the interview
3. Introduction of our topic
4. Request for permission to use interviewee’s name in thesis

**About the entrepreneur & history of his/her venture**
1. Tell us about your background
2. Please tell us about your company, what it does and your position
3. Goal of the company
4. Origin of idea
5. Elaboration on the start-up process and phase of the business
6. Elaboration on how the business is running today (did it change in the course of running it?)
7. Motivation to start up/running the business

**Challenges**
1. What challenges / problems did you face when starting up your business?
2. What challenges are you facing today while running your business?
3. Aspects to ask for when not mentioned: financing, network, human resources, knowledge, resources in general, technology (if applicable), bureaucracy, regulations, product development (if applicable), market & customers, competition, legitimacy
4. Do you think there is a difference for environmental and traditional entrepreneurs when starting up and running a business?
5. (If applicable) In your network of environmental entrepreneurs, what do you see as the biggest challenges? Did any fail? Why did they fail?

**Support**
1. Have you received any kind of support? (from government (e.g in form of incentives), public institutions, (private) network, “environmental community” etc.)
2. What kind of support would you have wished for? / What kind of support do you think is necessary? When did you receive the support?
3. How effective was the support received?

**In particular: The role of policy instruments and regulation for fostering environmental entrepreneurship**
1. Does/Did it play a role for you?
2. What would you have/What would you wish for?
Success
1. How do you measure your success / performance? What is success for you?
2. What were/are best (business) practices for you in order to achieve this success with your business?

Closing Question
1. Suppose you were taking to someone who is just about to start his/her own environmental venture or is considering it - What would you tell / advice this person?
Appendix 2: Interview guide – Business consultants

**Formalities**
1. Introducing ourselves
2. Asking for permission to record the interview
3. Introduction of our topic (*probably rather general in order not to be too leading*)
4. Request for permission to use interviewee’s name in thesis

**About the business consultant’s background**
1. Tell us about yourself (background) and what you do.
2. How do you consult?
3. Do you consult them on a particular stage?
4. What kind of support do they get from you?

**Challenges**
1. What challenges / problems do they face when starting up their business?
2. What challenges are they facing while running their business?
3. Aspects to ask for when not mentioned: financing, network, human resources, knowledge, resources in general, technology (if applicable), bureaucracy, regulations, product development (if applicable), market & customers, competition, legitimacy
4. What do you see as main reasons why these businesses might fail?
5. Do you think there is a difference for environmental and traditional entrepreneurs when starting up and running a business?

**Support**
1. Which other support measures can environmental entrepreneurs get in Sweden?

**In particular: The role of policy instruments and regulation for fostering environmental entrepreneurship**
1. Does/Did it play a role for them?
2. What would you wish for? What kind of support or policies would be needed?

**Best Practices**
1. What do you see as best practices for environmental entrepreneurs? What would you recommend this kind of entrepreneurs?