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Changing for good:
transforming existing organizations
into sustainable enterprises



Angela Greco



university of
 groningen

**Changing for good:
transforming existing organizations into
sustainable enterprises**

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Rector Magnificus Prof. C. Wijmenga
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the decision by the College of Deans.

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Preface

“As a result of my studies, I have become aware of the severity of climate change and the unavoidable low-carbon society transition that my generation is going to face. A variety of courses and projects taught me about the importance of zero energy buildings¹, insinuating both excitement and concerns. If zero energy buildings were so essentials in order not to compromise the needs of future generations, and if they are technically feasible, why do we see so few of them?” (Greco, 2016).

I wrote this question only a few months prior to my job interview with Prof. Gjalte de Jong and Dr. Joop Houtman, which landed me a PhD position at the Centre for Sustainable Entrepreneurship in Campus Fryslân. Needless to say, in that year, my life began a profound transition. My family members might relate this to the birth of my second son. Of course, this event caused an incremental life change. It definitely increased –even more– my worries related to climate change. Yet, I believe the cause of this profound change to have a quite different root.

In the first year of my PhD I presented a paper at the World Sustainable Built Environment Conference in Hong Kong in which I wrote “Although the importance of refurbishing existing buildings is widely recognized, it appears that the current refurbishment rate is insufficient to meet the 2020 EU²’s energy targets.” (Greco et al., 2017, p. 1555). That conference was filled with hopes –supported by promising sustainability transition plans– and fears – supported by a disappointing scientific evidence. But, as our survival instinct dominates, we tend to prefer optimistic outcomes. So did Christiana Figueres³ –keynote of that conference– who, in her opening speech, thanked

¹ A zero-energy building, is a building with zero-net-energy consumption, meaning the total amount of energy used by the building on an annual basis is roughly equal to the amount of energy produced on site, through renewable energy sources.

² The European Commission set important energy targets within its environmental policy. The most important for the building sector was Energy 2020 which aimed at a reduction of at least 20% of GHG, increasing renewable energy by at least 20% and improving the Energy Efficiency of at least 20%.

³ Executive Secretary of the United Nations Framework Convention on Climate Change.

Donald Trump for bringing climate change on the front page again, by withdrawing from the Paris Agreement.

In the very same year, my ethnographic field work started. I can only let you imagine how excited I was for having the opportunity to study the only housing association in The Netherlands which was implementing an energy neutral plan at that time. As you will read multiple times throughout the pages of this article-based dissertation, the housing association protagonist of these articles, had the ambition to reach the target of 20,000 energy-neutral social houses within less than fifteen years.

When I started this PhD journey, in November 2016, the year 2020 seemed very far away. There was an entire PhD separating me and the year of “truth” for the EU 2020 energy targets. While I was feeling deeply fulfilled and willing to taste each moment of my PhD years to come, I could not wait to see whether or not we would have met the EU targets for the built environment. And now, here we are: the year 2020 has finally arrived.

I know, I have heard it many times: the last year of a PhD is hard and can be depressing. Yet, my sad feelings do not seem to be related to my PhD journey at all. These feelings are experienced by many researchers studying the reality of climate change and the failure of governments, businesses, and us all, in meeting important climate targets.

So, let’s now get back to the question in my initial quote “If zero energy buildings were so essentials in order not to compromise the needs of future generations, and if they are technically feasible, why do we see so few of them?”. When I asked this question almost 4 years ago, little did I know that I had to go through a PhD to (maybe) be able to find an answer to this and similar other complex questions. It took a major life transition. It required familiarizing with the tools used by social scientists and to put down –at least for a while– the engineering hat I used to wear.

This PhD research looks at some of the organizational aspects of sustainability transitions. Businesses do have the potential to make the transition to a sustainable economy happening, but, in the majority of cases, they first need to see the problem in order to try to solve it. With this PhD research I have tried to research some of the processes businesses’ actors (can) undergo to become the sustainable entrepreneurs our society so desperately need.

Acknowledgments

This research would not have been possible without the help of many people who have been contributing to this path. Firstly, I would like to thank my supervisors for believing in the topic during the early stage and encouraging its relevance throughout its development. They all have been giving precious feedback and support.

Gjalt de Jong, in the first place, for making possible the collaboration with Elkien, the housing association protagonist of this thesis and for allowing such an important life transition. I have been lucky to be supervised by a scholar supporting the combination of research for the purpose of advancing knowledge with a value-based research striving to support our local communities. This pushed me to become an advocate of transdisciplinary research, which, as we so wonderfully agree, is crucial for disciplines such as sustainability science.

Thomas Long, thanks for your constant moral and scientific support. I was blessed in having a supervisor with which I shared a last-minute and flexible attitude. You were always ready to read my words, even if I'd only gave you a few hours' notice, and even with a very busy teaching schedule. This allowed me to experiment with deadlines, conferences and submissions without feeling alone in these moments.

Also, I would like to express my gratitude to the members of the reading committee for spending much time reading and evaluating my thesis: Prof. George Huitema, Prof. Jo van Engelen, Prof. Annemieke Roobeek, Prof. Jan Jonker. Your comments have contributed to improve the quality of my manuscript.

Although not academic, I wish to place under the label of “supervisor” Mia Schaafsma, who has supervised and helped me greatly since the very first day I stepped with my feet at Elkien. Thanks to you, I immediately felt a part of this organization. Your creativity is inspirational and I simply wish we had more people like you in executive positions, managing value-driven

Acknowledgments

employees across the globe. If this was the case, I probably would not need to write this thesis and worry about negative social impacts of organizations.

This thesis relies on rich qualitative data. The only reason why it was possible to collect this unique amount of data is because Elkien's employees, managers, and partners, have been incredibly open with me and always ready to help. In the first place, Alex Bonnema, for allowing me to access this incredible organization and build the trust I needed to feel at home and join important strategy meetings. A big thank goes to what once was the S&O department, particularly to Henk Heikema, Ytsen Strikwerda, Jeroen Duvergé, Nikkie Smit, Baukje Bergsma, Aafke Postma and Sofia Krol. Not only you have been great colleagues during my ethnographic work, but you have allowed me to access important projects, becoming part of working groups and thinking along when decisions had to be made. Other people at Elkien have greatly helped me during my research to access important data, particularly Reind Fokkens, Helga Hoornveld, Natalie Lakemond, Corinne van Dessel, and Jacoliene Maat. Also, thanks to Patrice Broersma especially for the multiple lifts from Hoogkerk to the office and back, together with Andrew Lawton. You two made the early morning travel to the office more fun and insightful! My sincere gratitude goes also to Peter van de Weg and Harro Eppinga for allowing the continuity of my research, support and freedom throughout the course of this PhD. I cannot mention the very many other people of Elkien who save the world one house at the time, it was inspirational to work with you.

Other organizations have shared information useful for this research, such as the Gemeente Leeuwarden, Accolade, Gemeente Súdwest-Fryslân, Nieuw Elan, and Van Wijnen. The last empirical project discussed in Chapter 6, has been only possible thanks to Rob Goes from Ekwadraat, Friso Visser and Frans Scheepens from Brainfuel, and all the entrepreneurs who participated to the Duurzame Innovatie Challenge Fryslân, 2018.

Also, I wish to deeply thank all the amazing staff of Campus Fryslân who I have seen growing in the past years. When I joined this organization, the staff could still sit around one small table in one room and plan the future. How special to see that the hypothetical students, the building, and the needed staff, object to those early meetings, has now become this faculty's reality. It has been truly an honour to study sustainable entrepreneurship in a nascent new faculty, who evolved everyday with the mission to make the world a better place. This is a truly a wonderful place where to work, study and, do a PhD.

Though I have many more people to thank within Campus Fryslân, I cannot avoid mentioning what all other PhDs called the "sustainables", who became

very dear friends. Femke Vrenegoor, your moral support since the very early days has been immensely valuable, thank you for your constant availability. Manon Eikelenboom, besides being a collaborative co-author and co-coder of parts of this research, I think it was great to share the bus rides to our field work with you. Thanks for correcting my Dutch emails and for having to witness many presentations and meetings in an Italian-sounding Dutch, this gave me precious support.

Hendrik Telken, I do not know if I would have managed without you. Knowing that there was someone in the PhD room who would get my jokes immediately was very important for my psychological wellbeing. Besides, your rationality has been immensely valuable in moments of doctoral madness.

Margo Enthoven, my only full-time PhD colleague for the first months, I don't think I need to tell you here why I am thankful. Maybe I can say that I am grateful you convinced me to join our very first conference in Rome, since this gave me the immense honour to start our friendship. And maybe, I can thank you for being there when I need it the most.

All the “sustainables” put their finger prints on this manuscript. They took the time to read and criticize –in a mean way, since that's how we like it– each article of this thesis and improve their quality beyond first-draft imagination. Thank you.

I cannot stop thanking my family for their love and support. My father, mother and parents in law for having done intensive summer-babysitting so that I could write, go to conference, and even do a visiting period abroad. My husband Marco for the constant IT support, infinite love and care. Most of all, I thank my two children Leonardo and Zeno. Leonardo, I thank you for telling me that you believe mum is happy when she works and, for trying to explain this sophisticated idea –that I also have trouble understanding sometimes– to your little 3-year old brother. I love your beautiful purple hearts you draw for me so very often and I hope I can remember them. And to Zeno, I thank you for having been a good baby throughout the first year and a happy toddler for the following two. Most of all, I thank you for having introduced me to peanut butter with dark chocolate sprinkles. This made my transition to a vegan diet much easier.

Gratefully,

Angela Greco

London ON, October, 2019

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List of Abbreviations

AOM	Academy of Management
BMI	Business Model Innovation
CSR	Corporate Social Responsibility
DT	Design Thinking
EGOS	European Group of Organization Studies
MRQ	Main Research Question
R&D	Research and Development
SBMI	Sustainable Business Model Innovation
SDG	Sustainable Development Goal
SEE	Sustainability Ethics Entrepreneurship
SME	Small Medium Enterprise
SOI	Sustainability-Oriented Innovation
SPOs	Social Purpose Organizations
SQ	Sub-question

“You cannot understand a system until you try to change it.”

Kurt Lewin

1 Introduction to the research

This chapter offers an introduction to this PhD thesis. After introducing the problem statement and research question, it presents a description of the research projects. Subsequently, it provides insights into the research philosophy by introducing the ontological and epistemological assumptions guiding this PhD. It further shows how the research process evolved and concludes by providing guidelines for the reader.

1.1 Problem statement and research question

Amongst government, society, and individual citizens, the role of organizations has been acknowledged as crucial for sustainable development both by scholars and practitioners (Dyllick & Muff, 2016; Hockerts & Wüstenhagen, 2010; Schaltegger & Wagner, 2011). Beside the renown definitions that stress the coexistence of environmental integrity, economic prosperity, and social equity (Brundtland, 1987; Elkington, 1997), sustainable development is operationally described by the 17 sustainable development goals (SDG) (United Nations, 2015). Ending poverty and hunger, improving health and wellbeing, making cities more sustainable, and combating climate change are some of the 17 SDGs set by the United Nations, to be achieved by 2030.

Because sustainable development cannot occur without sustainable businesses (Bansal, 2002), understanding how to transform organizations into sustainable ones is essential.

Hence, we use the notion of **sustainable entrepreneurship** as research lenses, referring to the process that strives to create value that is beneficial for society through business development and positive impact creation. This process implies risk-taking abilities, innovative attitude and alertness, together with determined ethical concerns (Greco & de Jong, 2017).

Sustainable entrepreneurship has been widely acknowledged as the answer to environmental (Cohen & Winn, 2007; Dean & McMullen, 2007; York & Venkataraman, 2010) and social challenges (Dixon & Clifford, 2007; Zahra, Gedajlovic, Neubaum, & Shulman, 2009) that we, as society, face in this

century. Sustainable entrepreneurship lays “in between for-profit and not-for-profit, in between cash and cause. The main goal of the business activity of the sustainable entrepreneurs should be looking for prosperity” (İyigün, 2015, p. 1230).

There is a need for more organizations, both existing and nascent, profit and not-for-profit ones, to evolve into sustainable enterprises, creating positive social and environmental impact in order to achieve sustainable development.

Although the notion of entrepreneurship is commonly utilized for nascent organizations, entrepreneurship does not require –but can include– the creation of new organizations (Shane & Venkataraman, 2000). Entrepreneurship processes occurring in existing organizations are often referred to as intrapreneurship or corporate entrepreneurship, with the latter generally applying to large corporations (Antonicic & Hisrich, 2003). We use the term entrepreneurship because the emphasis is on product/service/process innovation, risk taking and reactivity, regardless of the company’s size and development stage. Generally speaking, entrepreneurial strategy in established organizations is instrumental to achieve competitive advantage.

Often, the notion of positive impact in entrepreneurial strategy, refers to corporate business results, such as profitability. In contrast, we define sustainable entrepreneurship as “the proactive process of innovation and risk taking to address social and environmental problems”. We use the word “proactive” in antithesis to “reactive”, this being more in line with the discipline of strategic change and entrepreneurial strategy as discussed in Chapter 2. The activities of sustainable entrepreneurs should ultimately result in a positive societal and environmental impact.

Sustainable entrepreneurship addresses all the aspects of the triple bottom line: environmental integrity, economic prosperity, and social equity. Former studies on intrapreneurship have described the integration of either social or environmental concerns in the context of existing organizations (e.g. Halme, Lindeman, & Linna, 2012; Kistruck & Beamish, 2010; Mair & Schoen, 2007). Studies addressing both environmental and social entrepreneurial practices have mainly been performed on new ventures (see, for example, Belz & Binder, 2017). The simultaneous integration of the environmental and social strategies, has been addressed in the context of corporate social responsibility, but mainly as a reactive rather than a proactive organizational response (Aguilera, Rupp, Williams, & Ganapathi, 2007; Dixon & Clifford, 2007; González-Rodríguez, Díaz-Fernández, & Simonetti, 2015).

Therefore, we have little understanding of how the sustainable entrepreneurship process can be induced, pursued and maintained in the context of existing organizations. Thus, the Main Research Question (MRQ) posed in this dissertation is:

How is the sustainable entrepreneurship process induced and maintained in the context of existing organizations?

To tackle this research question, different sub-questions are posed, namely:

- SQ1. How can we define sustainable entrepreneurship? How is sustainable entrepreneurship informing existing businesses to transform sustainably?
- SQ2. How can highly regulated hybrid organizations –that are organizations combining multiple goals/logics/identities– induce and maintain sustainable business model innovation?
- SQ3. How does a dual organizational identity influence a manager’s heuristic in the process of strategy design aimed at achieving a new sustainability goal?
- SQ4. How can the unintended consequences resulting from the simultaneous combination of conflicting yet interrelated sustainable development goals be mitigated?
- SQ5. How can collaborative innovation contests be used by businesses to accelerate sustainability-oriented innovation?

Given the complexity of these questions, each chapter offers the theoretical background needed to help familiarize the reader with the basic definitions and assumptions in order to understand the outcome of the research. Each of these questions is addressed in a different chapter of this thesis, as explained in the following section.

1.2 Research projects

Following a thorough study of the literature (Chapter 2) –which aimed at answering SQ1 presented above– the phenomena-driven question of this PhD is tackled through four empirical projects. This dissertation is structured following the format of an article-based thesis, meaning that each chapter should be seen as a stand-alone scientific article. In this section, I briefly introduce these projects. From this section onwards, I use an active voice in the writing of this chapter. This is because, as I will explain in section 1.3, the

researcher's experience is –for the types of methods chosen in this PhD– inseparable from the research itself.

To answer SQ2, I conducted a 2-year ethnographic study at a housing association founded over 100 years ago, which embarked in an energy-neutral trajectory in 2015. This housing association is one of the oldest, as housing associations begin to manifest in the Netherlands at the end of the 19th century. Their initial goal was to provide better working conditions to industrial employees. With the Housing Act of 1921, housing associations became legally established as “housing for the poor”, which was claimed to be a shared national responsibility (Dolata, 2008). The Social Rented Sector Management Order, states that approved housing associations have six duties: housing those who are not able to afford appropriate dwelling; assuring a decent-quality of dwellings; consulting with their tenants; running their finances responsibly; contributing to liveable neighbourhoods; and providing housing, for the elderly and handicapped (Elsinga & Wassenberg, 2007).

The housing association case analysed for this PhD, set an energy neutral target with the goal of transforming the entire portfolio, amounting to circa 20,000 houses, into energy-neutral buildings by 2030. This fieldwork allowed me to observe the phases of sustainable business model innovation referring –and contributing– to the literature of hybrid organization, as presented in Chapter 3. These observations are focused at the organizational level, providing a meso-level perspective to the change process.

Given the hierarchical nature of the case-organization, I identified a need for tackling a micro-level perspective; thus, studying in-depth the decision-making process from the perspective of the departments' managers. This chapter draws from the literature on cognitive biases and organizational identity. We use empirical data collected through active participation in a strategy-change trajectory that occurred over a 10-months period. This was possible given the openness of the organization's managers who gave me access to their strategy meetings, welcoming me as a participant observer. The results of this study are reported in Chapter 4.

As highlighted in the sustainable entrepreneurship literature review (Chapter 2), the activities of sustainable entrepreneurs should ultimately result in a positive societal and environmental impact. However, as shown by the initial results of this PhD research, this is not always the case. Using paradox lenses, I argue that while combining multiple SDGs, there is a significant risk of causing unintended consequences in which, for example, the pursuing of an environmental goal can compromise the impact of a social mission. In Chapter 5, I discuss a possible strategy to reduce this risk. This has been the

outcome of an action research project, intended to initiate a reflexive process on the impact of sustainable entrepreneurial strategy.

While the first three articles written throughout the course of this PhD, focussed on a sustainability-oriented innovation within the organizational boundaries, it is also important to understand how to outsource this type of innovation, when the organization lacks the resources to do so internally. Through an action research project, in collaboration with Ekwadraat⁴, I had the opportunity to facilitate a series of workshops in the contest of the Duurzame Innovatie Challenge Fryslân⁵ 2018. I observed its outcomes longitudinally for a period of one year. In Chapter 6, I provide insights into how small and medium enterprises can use this type of challenges for sustainability-oriented innovation. This chapter contributes to the open innovation literature by introducing collaborative innovation contests as a new organizational form to foster sustainability-oriented innovation.

In the following section, I introduce the research approach I have taken to conduct these projects.

1.3 Research philosophy

Conducting this research required a personal paradigm shift in the way I study problems and observe phenomena. In this section, I discuss what approaches I have taken to science, regarded as any practice that uses a systemic method of observation to gain knowledge. The knowledge developed through scientific methods is based on empirical evidence, i.e. verifiable information, collected in a systematic way; yet the researcher's ontological and epistemological assumptions are important to understand this process. Therefore, I begin by discussing what ontological and epistemological assumptions I consider important to be made in the study of sustainability sciences (Clark, 2007) Finally, I clarify what goals drove my research and my methodological choices.

1.3.1 Ontological and epistemological assumptions

“If a tree falls in the forest and nobody is around to hear it, does it make a sound?”

(George Berkeley, 1710)

In this section, I attempt to convey what ontological and epistemological assumptions have been guiding me throughout my PhD research. Specifically, I intend to clarify in which contexts I approach observations to

⁴ Ekwadraat is an energy transition consultancy company based in Fryslân.

⁵ This is the original name of the challenge in Dutch. In English it literally translates as: “Friesland Sustainability Innovation challenge”.

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transdisciplinary researcher uses challenges from the business contexts or the natural environment to design the research questions, in combination with a theoretical gap.

If for Sustainable Development, the time, space, and scale of the constructed world needs to align with the real world, an understanding of how both worlds work is fundamental. Sustainability as a discipline lays in between natural, applied and social sciences, requiring a combination of positivistic and hermeneutic approaches: sustainability deals by definition with the interactions between natural and social systems. Therefore, it requires transdisciplinary research approaches, in which researchers take an active role in sustainability transitions (Wittmayer & Schöpke, 2014).

1.4 Notes before reading this thesis

To answer the research questions, a literature review and four empirical projects were conducted, following the format of an article-based dissertation. This implies that each of them resulted in a stand-alone article, here reported in four different chapters, with three of these chapters sharing the same empirical context, though a different unit of analysis. This means, that at times, there will be repetition of the research context. These repetitions are important to assure a complete understanding of the study background when a chapter is taken singularly.

Additionally, in the next chapters, contrarily to the introductory and the conclusive ones, a plural person is used in the narrative. This is because, these are extracted by articles with multiple co-authors, as specified in the footnote accompanying each chapter's title, and I wish to remain loyal to any team effort made for the writing of these articles.

Finally, the following table shows the outline of the thesis, highlighting the research questions addressed and the approach adopted in each chapter. These chapters are finally followed by a conclusive chapter which summarizes the main research findings and highlights suggestions for future research.

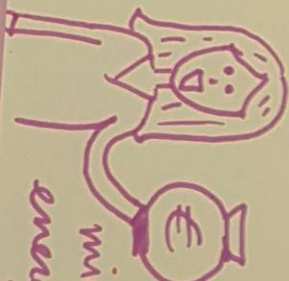
Table 1.1: Chapters overview.

Chapter title	Research questions	Methodology
2. Sustainable entrepreneurship: Definitions, themes and research gaps.	SQ1. How can we define sustainable entrepreneurship? How is sustainable entrepreneurship informing existing businesses to transform sustainably?	Narrative literature review (Rumrill & Fitzgerald, 2001).
3. Phases of sustainable business model innovation: organizational	SQ2. How can highly regulated hybrid organizations induce and maintain	Realistic ethnography (van Maanen, 2006) including interviews,

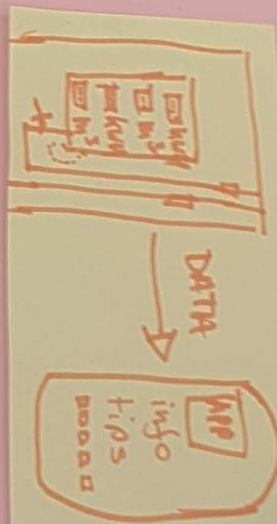
Chapter title	Research questions	Methodology
responses in a hybrid context.	sustainable business model innovation (SBMI)?	non-participant observations, and archival data.
4. Identity Reflexivity: A Framework of Heuristics for Strategy Change.	SQ3. How does a dual organizational identity influence a manager's heuristic in the process of strategy design aimed at achieving a new sustainability goal?	Critical ethnography (Georgiou & Carspecken, 2002) including interviews, and participant observations.
5. Combining SDGs: the need for a responsive approach in strategy change to manage sustainability paradoxes.	SQ4. How can the unintended consequences resulting from the simultaneous combination of conflicting yet interrelated sustainable development goals be mitigated?	Action research (Coghlan, 2019) including interviews and participant observations.
6. Experimentation for sustainability through collaborative innovation contests: the case of the sustainable innovation challenge.	SQ5. How can collaborative innovation contests, involving design thinking, be used by businesses to accelerate sustainability-oriented innovation?	Action research (Coghlan, 2019) including interviews, participant observations, non-participant observations, qualitative surveys analysis.

PART I

Sustainable Entrepreneurship in Theory

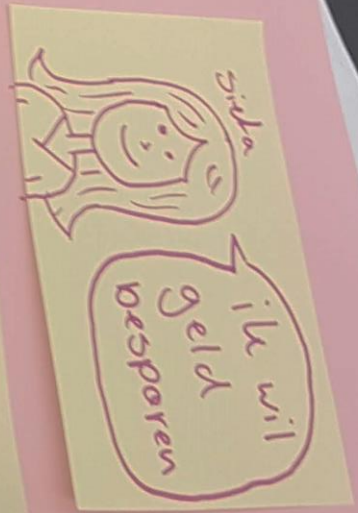


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“It's not about having it all. It's about having what you value most.”

Jean Chatzky

2 Sustainable entrepreneurship: Definitions, themes and research gaps⁸

The field of sustainable entrepreneurship has been establishing itself, throughout the past decade, as a branch of a broader sustainability management research field. Yet the field is disparate and can benefit from a conceptual synthesis of the main themes and definitions constituting it. In particular, many of the terms adopted in the past decade, such as green entrepreneurs, corporate sustainability, social entrepreneurship, purpose-driven organizations or impact entrepreneurship, are often used interchangeably.

To provide clarity to scholars engaging in the field of sustainable entrepreneurship, we first explore the existing notions of entrepreneurship and sustainable development with the aim to agree upon a definition that will serve as basis for next discussions and research. Subsequently, an overview of the main themes addressed by the literature referring to sustainable entrepreneurship is given. Finally, we highlight some of the gaps that, if filled, will surely bring the discipline forward and potentially guide organizations and individuals engaging in sustainable entrepreneurship practices.

⁸ This chapter is based on Greco, A., & De Jong, G. (2017). Sustainable entrepreneurship: Definitions, themes and research gaps. Centre for Sustainable Entrepreneurship, University of Groningen, The Netherlands. Available at: http://www.rug.nl/cf/pdfs/wps6_angela.pdf

2.1 Introduction

Today we, as society, are facing enormous economic, environmental and societal threats.

“Billions of our citizens continue to live in poverty and are denied a life of dignity. There are rising inequalities within and among countries. There are enormous disparities of opportunity, wealth and power. Gender inequality remains a key challenge. Unemployment, particularly youth unemployment, is a major concern. Global health threats, more frequent and intense natural disasters, spiralling conflict, violent extremism, terrorism and related humanitarian crises and forced displacement of people threaten to reverse much of the development progress made in recent decades. Natural resource depletion and adverse impacts of environmental degradation, including desertification, drought, land degradation, freshwater scarcity and loss of biodiversity, add to and exacerbate the list of challenges which humanity faces. Climate change is one of the greatest challenges of our time and its adverse impacts undermine the ability of all countries to achieve sustainable development. Increases in global temperature, sea level rise, ocean acidification and other climate change impacts are seriously affecting coastal areas and low-lying coastal countries, including many least developed countries and small island developing States. The survival of many societies, and of the biological support systems of the planet, is at risk.”

United Nations (2015, pp. 8–9)

These impellent calls signal entrepreneurs to act accordingly. Given the variety of threats and their intrinsic complexity, it is no surprising that the discipline of mission-driven entrepreneurship is scattered and vast. Entrepreneurship is traditionally recognized as a fundamental engine for economic and non-economic development, triggering job creation and improved products and services (e.g. Audretsch & Thurik, 2004; Koe, Omar, & Majid, 2014; Schumpeter, 1943; Shane & Venkataraman, 2000). Entrepreneurs' primary objective is to satisfy an unfulfilled need or to improve the way this need is currently being satisfied. This promising and fundamental goal does not necessarily imply that positive social or environmental values are being created as a result. On the contrary, entrepreneurial activity is strongly related to environmental damage (Dean & McMullen, 2007; Pacheco, Dean, & Payne, 2010; York & Venkataraman, 2010), with an often associated, negative social impact. Economic and technological progress at any price, without considering societal development and environmental impact, is unsustainable and no longer feasible.

As a direct consequence, the need for transitioning to a more sustainable economy has been growing throughout the past 30 years (Meadows, Randers, & Meadows, 2004). Yet, despite the increased awareness among new and existing businesses of the need to adopt sustainable practices (Elkington, 2006) the number of organizations effectively influencing sustainable development is still insufficient, and needs to rise urgently. This has been motivating scholars in the past decades to deepen the study of grand challenges (Ferraro, Etzion, & Gehman, 2015), mission-driven business (Dean & McMullen, 2007), sustainability sciences (Caniglia et al., 2017; Wiek, Farioli, Fukushi, & Yarime, 2012), and sustainability-oriented innovations (Hansen & Schaltegger, 2013; Wagner, 2012; Watson, Wilson, & Macdonald, 2018), forming the puzzle of the sustainable entrepreneurship field.

Sustainable entrepreneurship has been widely acknowledged as the answer to the environmental (Cohen & Winn, 2007; Dean & McMullen, 2007; York & Venkataraman, 2010) and social challenges (Zahra et al., 2009) that we as society face in this century. Despite the recent theoretical developments, research on antecedents, processes and outcomes of sustainable entrepreneurship remains fragmented. Multiple perspectives have been used to highlight socially responsible businesses and many of the available definitions limit the use of entrepreneurship theories to nascent businesses.

The scope of this chapter is to provide an overview of the field of sustainable entrepreneurship by bringing together work from multiple perspectives; identifying common themes in the antecedents, challenges, and opportunities associated with sustainable entrepreneurship; and highlighting critical directions for future research

Given the broad scope of this review, we adopt a narrative literature review approach (Green, Johnson, & Adams, 2006; Rumrill & Fitzgerald, 2001) aiming at describing the latest developments of the sustainable entrepreneurship field in a comprehensive manner, without excluding a priori studies who could give precious insights, but might not fall under specified terminologies used as search algorithms. This differs from a systematic review approach, which, normally begins with a narrow research question and a detailed method section in which criteria for exclusion and selections of articles are specified. Narrative overviews, also known as unsystematic narrative reviews, are comprehensive narrative syntheses of previously published information. The objective of these review it is often to connect previous studies, criticize them and to summarize the article that are important according to the author in order to aid expert and non-expert readers (Green et al., 2006).

Although our initial pool of articles was selected in a systematic manner, (see Greco and de Jong (2017), the second selection was guided by contribution cited by the first selection. For the first selection, the word ‘sustainable entrepreneurship’ was used as algorithm researched on WorldCat Discovery Service and on the following journals: Journal of Business Venturing, Journal of International Business Studies, Small Business Economics, Entrepreneurship Theory and Practice and International Business Review. WorldCat Discovery Service access to 1.9 billion library sources representing the collection of thousands of libraries worldwide. The articles, theses and books searched through WorldCat include contributions from the year 2011 until May 2017. The most cited article in the literature reviews included in the search, have also been consulted and included in this review. These include therefore older contributions. In total 132 among articles, papers, books and thesis have been consulted for the scope of this review.

We structure this review as follow: we begin with defining the concepts of entrepreneurship and sustainable development. Subsequently, we highlight the similarities and differences among social, environmental, and hybrid enterprises, highlighting how these fall into the sustainable entrepreneurship category according to the definition we propose. Therefore, we identify the main research themes constituting the field, which serve as basis to build the theoretical foundation of this PhD thesis. We conclude by highlighting important gaps and research limitations.

2.2 Sustainable Entrepreneurship: towards a comprehensive definition

Sustainable entrepreneurship is entrepreneurship pursuing sustainable development (Pacheco et al., 2010). Therefore, to provide the reader with a clear understanding of the field, in this section we begin by defining entrepreneurship and sustainable development separately.

2.2.1 Defining entrepreneurship

Defining the mainstream concept of entrepreneurship is an important first but challenging step (Shane & Venkataraman, 2000). Many scholars agree upon the lack of a universally accepted definition (e.g. Carsrud & Brännback, 2007; Gartner, 1988; Veciana, 2007). Some of the early definitions are dated back to the 18th century and are attributed to economists such as Adam Smith and John Stuart Mill. The word ‘entrepreneurship’ became popular in business since 1980s (Majid & Koe, 2012). Deriving from the French word *entreprendre* meaning to undertake or to do something, the term has been redefined a dozen times in the last decades.

Although the majority of the definitions refer more to what entrepreneurs do, rather than who they are, broader definitions have also been proposed. Stokes, Wilson, and Mador (2010) argue that the definitions present in literature are related to three main domains: process, behaviour and outcomes. Schumpeter's definition (1943), one of the earliest and most cited of all, refers to entrepreneurship as innovative process of creative destruction, comprehensively addressing the three domains indicated by Stokes et al. (2010). Following the same criterion, Majid and Koe (2012) define entrepreneurship as “A process of identifying, evaluating and pursuing opportunities through creativity, innovativeness and transformations to produce new products, processes and values that are beneficial” (p. 295).

Several scholars approach the concept of entrepreneurship from a behavioural angle, focusing on what characterizes an entrepreneur as individual. (Ardichvili, Cardozo, & Ray, 2003) describe entrepreneurs as creative individuals, specifically in the way they recognize, create and develop opportunities. They refer to opportunities (a common denominator in several entrepreneurship definitions) to be ‘developed’ rather than ‘identified’ since opportunities “are made, not found” (p. 106). Ardichvili et al. (2003), name personality traits, social networks, and prior knowledge as antecedents of entrepreneurial alertness to business opportunities. Opportunity recognition, creation and development represent a fundamental branch of the entrepreneurship and strategic management definitions and ditto research disciplines (Harms, Schulz, Kraus, & Fink, 2009).

The behavioural angle of entrepreneurship can also be related to others who see entrepreneurship as a process. Venkataraman (2002) defines entrepreneurship as the process of addressing uncertainty, innovation and resource allocation for the creation of personal wealth and social benefit. Weidinger, (2014) also refers to entrepreneurship as an open research process that comes up with unique solutions.

Common grounds of entrepreneurial traits are risk taking, opportunity spotting and innovation in the process of creating unique solutions (sometimes disruptive) striving for longevity. This is independent from the context which might be, for instance, the context of large and established organizations (the so-called intrapreneurship or corporate entrepreneurship), the context of new venture creations, the context of for-profit or not-for profit organizations.

A number of authors refer to entrepreneurship as the creation of new business, that is, namely start-ups (Ardichvili et al., 2003; Gartner, 1988; Gibbs, 2009). Start-ups represent an important cluster of the entrepreneurship literature mainly for their widely recognized potential to

innovate, contraposing them to large organizations. The lack of constraints which typically characterize large and established organizations – such as traditional administrative systems, procedures, shareholder demands – makes start-ups promising for disruptive innovation and substantial societal change. This aspect is also recognized by the European Union, which is supporting the financing of new enterprises addressing urgent societal issues such as climate change and societal progress (Bocken, 2015). In addition, there is tangible evidence that we are currently moving from a managed economy towards an entrepreneurial economy (Audretsch & Thurik, 2004; Schaltegger & Wagner, 2011; Uhlaner, Berent, Jeurissen, & de Wit, 2010). However, the survival rate of start-ups is low. Katre and Salipante (2012) affirm that most earned-income ventures expire within the first 5 years, with a failure peak between the 18th and the 24th month (circa 40% of small businesses fail in the first 5 years). This puts entrepreneurship research in the spotlight, incentivizing several scholars to explore patterns for entrepreneurial success.

Despite the relevance of new ventures, the study of entrepreneurship should not only be limited to new enterprises. As argued by Shane and Venkataraman (2000), entrepreneurship does not require (but can include) the creation of new organizations. The broad potentials of the entrepreneurship discipline are defined also, and foremost, by what characterizes entrepreneurs. Such approach allows to apply the theories of entrepreneurship to existing (transforming) enterprises or to not-for-profit organizations (e.g., social entrepreneurship) including other important branches of organizational theory.

Moreover, as Hockerts & Wüstenhagen (2010) argue, large organizations are more suitable to address a wide range of issues. Start-ups instead, normally focus on one particular issue in which they excel. Established firms excel in process innovation while start-ups excel in product (often disruptive) innovation. Established firms are likely to follow start-ups, once there is evidence (thanks to the new ventures' efforts) that a certain innovation is attractive. Established firms have the means to bring the innovation forward, thanks to their social network, expertise and capital. Together, established organizations and start-ups can initiate and accomplish sustainable development, working in symbiosis in a co-creation process, depending on each other for mutual success (Hockerts & Wüstenhagen, 2010).

Since both, established firms and new ventures play important and different roles in societal development, we do not intend to exclude start-ups from the entrepreneurship research, but merely not restricting the definition of entrepreneurship to the practice of creating new organizations. From now on, we will refer to entrepreneurship as: the process that strives for

innovation and/or value creation and capture through opportunity spotting and development, implying a more-or-less high degree of risk taking, due to its intrinsic uncertainty.

2.2.2 Defining sustainable development

Sustainable development is often defined referring to the Brundtland Report (1987) as “the development that meets the needs of the present without compromising the ability of future generations to meet their own needs”. The Brundtland UN report focuses on social justice and human development within the framework of social equity and the equitable distribution and utilization of resources. However, despite recognizing the breakthrough benefit of this definition, many argue about its lack of practicality. This is because the concept of intergenerational equity (Lans, Blok, & Wesselink, 2014) is not of easy formalization. Societal needs clearly change from one generation to another and their prediction is not a straightforward forecast.

In 1997 Elkington introduced the concept of the Triple Bottom Line (TBL), or 3P (People, Planet and Profit) with the book *Cannibals with Forks: The Triple Bottom Line of Twenty-First Century Business*. This definition attempts to provide a more practical direction suggesting to balance the three dimensions of sustainability: the economical, the human and the environmental systems. Also, this definition did not survive without critics. Following the hierarchical order proposed by Stephen Haines' (1998) seven levels of living systems theory, we can identify the three systems addressed by the TBL approach as not belonging to the same level. In other words, there would not be an economy without society, which would not exist without environment. The planet supports the people who give sense to profit. Following this hierarchical order, many scholars and practitioners support the prominent importance of the planet (Markman, Russo, Lumpkin, Jennings, & Mair, 2016), enhancing the priority of the environmental component within the sustainability definition. This probably explains why the term sustainability and environment are often used interchangeably (e.g. Pacheco et al., 2010).

Though the importance of planetary boundaries was already strongly advocated by the Club of Rome's *Limits to Growth* (Meadows et al., 1972), it took several decades for entrepreneurial action to be moved by these concern, besides ad hoc funded non-profits environmental organizations. The enhanced importance of the environment within business practices, began to emerge when sustainable development became a fundamental issue in policies. Social and ecological sustainability are often differentiated and this can be reflected also in the way many scholars define sustainable entrepreneurship, as discussed in the following section. The most recent

development of ecological sustainability is based on the realization that on a finite Earth the depreciation of “natural capital” (Lovins, Lovins, & Hawken, 1999) cannot go on endlessly. Hence, this is the root cause for the shift from a ‘throughput’ to a ‘circular’ manufacturing economy (Gibbs & Deutz, 2007). Sustainable development aims to protect the so-called non-substitutional capital and its meaning is often context dependent. In the next section, we introduced the different dimensions the reviewed articles refer to, when addressing the field of sustainable entrepreneurship.

2.3 The development of the Sustainable Entrepreneurship field

In this section we seek to explain how the field of sustainable entrepreneurship is emerged. Specifically, we highlight what disciplines have inspired its emergence.

2.3.1 Social, environmental, hybrids, and business sustainability as sustainable entrepreneurship

Despite the critics behind using the TBL (Elkington, 1997) to define sustainable development, the framework is widely used to explain how sustainable entrepreneurs operate. Balancing economic health (economy), social equity (people) and environmental resilience (planet) through entrepreneurial behaviour is what identifies a sustainable entrepreneur (Hockerts & Wüstenhagen, 2010). Research on sustainable entrepreneurship has evolved and combined two different entrepreneurship branches: social and environmental entrepreneurship. Dean and McMullen (2007) offer a comparison between the broader concepts of sustainable entrepreneurship to environmental entrepreneurship comparing it to social entrepreneurship. They explain that the latter tends to address mission-driven, rather than profit-driven entrepreneurs while sustainable entrepreneurship addresses environmental problems without neglecting profit. Organizations that respond to social and environmental problems by applying market mechanisms are often referred to as hybrid organizations (Ebrahim, Battilana, & Mair, 2014). Hybrid organizations are thus characterized by a dual focus: social change and financial sustainability of the organization (Alter, 2007). Both societal and environmental betterments fall under the umbrella of social change, intended as primary goals of social enterprises. Hybrid organizations play a crucial role in sustainable development (Boyd, Henning, Reyna, Wang, & Welch, 2017), as they are able to navigate complexity and uncertainty (Battilana & Lee, 2014) through collaboration (Ramus, Vaccaro, & Brusoni, 2017) and innovation (Jay, 2013). The hierarchical order of these foci affects the identity of the organization. Santos (2012) argues that organizations need to choose whether their focus is on social or financial sustainability and that this choice is central to organizational identity. Ambiguity on the

organizational focus may lead to a loss of legitimacy and upheaval on stakeholders. In contrast, proponents of the triple bottom line (Elkington, 1997) support the idea that organizations can –and should– maximize the different aspects of economic prosperity, social equity, and environmental integrity. The seeking of win-win solutions among the aspects of the triple bottom line can happen simultaneously or sequentially (Belz & Binder, 2017). The literature of hybrid organizations, however, addresses mainly the conflict of two identities: financial and social (Battilana & Lee, 2014; Doherty, Haugh, & Lyon, 2014).

Although sustainable entrepreneurship integrates environmental and social entrepreneurship in one practice, many authors still refer to sustainable entrepreneurship when addressing one of the two (Fellnhofer, Kraus, & Bouncken, 2014; Hockerts & Wüstenhagen, 2010). Recently, the sustainable entrepreneurship literature went through a shift in interest from environmental aspects to prominent focus on the social ones (Fellnhofer et al., 2014). This can be mirrored to the actual business practice – as also stated by Bocken (2015) who, to show this shift, reports some of the interviews to venture capitalists: “everything with a ‘social’ element is getting more important (...) this is where the money is now” (p. 653). In the literature focusing on new organizations, the focus is also rising on start-up ventures motivated by social innovation. The concept of social entrepreneurship has emerged in the late 1990s and it has only recently reached the academic literature (Hockerts & Wüstenhagen, 2010). As affirmed by Fellnhofer et al. (2014) the concept of social entrepreneurship is getting increasingly more attention by the scientific community within the sustainable entrepreneurship field.

The field of sustainable entrepreneurship has drawn from studies on business sustainability, particularly referring to the logics of managers and their cognitive frames (Hahn, Preuss, Pinkse, & Figge, 2014) when pursuing corporate social responsibility (CSR). Today the concept of CSR is related to societal expectations for a business to behave ethically (York & Venkataraman, 2010). “Corporate sustainability can be defined as meeting the needs of a firm’s direct and indirect stakeholders (such as shareholders, employees, clients, pressure groups, communities), without compromising its ability to meet the needs of future stakeholders as well” (Dyllick & Hockerts, 2002, p. 131). There is substantial evidence that organizations ought to invest in CSR to become more competitive, or because they need to react to a public malcontent or previous wrong doing (Aguilera et al., 2007). CSR can take many forms and can be, to a greater or lesser extent, integrated in the business model of a company and/or it could refer to the activity it generates (to clients, employees, shareholder, communities, environment and society). This

implies, for instance, complying with the relevant national and international legislation as well as legislation on Human Rights. In the existing literature there is a tendency to relate CSR or corporate sustainability to large firms and sustainable entrepreneurship to small and medium enterprises. Hockerts & Wüstenhagen (2010) relate sustainable entrepreneurship to both small and large firms, identifying the key differences in the way the two-approach sustainable entrepreneurship. According to our view, there are a few differences between sustainable entrepreneurship and CSR. Not only CSR applies normally to business-oriented organizations, while sustainable entrepreneurship can target different types of organizations, individuals and companies. But when addressing only for-profit organizations, sustainable entrepreneurship is a concept embedded in the core business or goal of a sustainable entrepreneur, while CSR is accompanying the core business. In other words, CSR makes sure that a company does not harm to the society or environment where it operates. Sustainable development, however, does not constitute the main goal of the organization in contrast to what sustainable entrepreneurship does – CSR aims at “doing less bad rather than more good” (York & Venkataraman, 2010, p. 451). In the next section we clarify what characterizes the field of sustainable entrepreneurship

2.3.2 Core Concepts

Sustainable entrepreneurship refers to the discovery, creation, and exploitation of entrepreneurial opportunities that contribute to sustainability by generating social and environmental gains for others in society (Hockerts & Wüstenhagen, 2010; Pacheco et al., 2010; Shepherd & Patzelt, 2011).

The concept of opportunity creation is central in the literature defining sustainable entrepreneurship and entrepreneurship in general (Harms et al., 2009). Cohen and Winn (2007) relate opportunity identification (for sustainable entrepreneurship) to market imperfections namely to the following: (1) firms are not perfectly efficient; (2) externalities exist, (3) pricing mechanisms work imperfectly, and (4) information is not perfectly distributed. They argue that entrepreneurs who spot such market imperfection have greater potentials to be successful.

Common ground between entrepreneurship and sustainability is the concept of longevity, assuring long lasting goods, values or services: preserving current resources for future generations (sustainability) and developing unique solutions for the long run (entrepreneurship). However, we argue that the within the field of sustainable entrepreneurship, longevity should be intended as the insurance of a dynamic positive impact over time. As mentioned before, we cannot possibly predict the needs of future generations since, as shown by history, they are increasingly changing. Traditionally,

mainstream entrepreneurship aims for longevity, i.e., creating long lasting products or services. Sustainable entrepreneurship does not strive to produce long lasting products or services but rather, to generate a positive impact on the social, environmental and economic systems. In rapidly changing times, being adaptive is key; designing a product or service for longevity might be unrealistic and even environmentally damaging as shown by the traditional modus operandi of entrepreneurs.

Both sustainability and entrepreneurship require innovation, which, applied to both fields, consist of a creative new combination of existing resources (Nicholls-Nixon, Cooper, & Woo, 2000). Pacheco et al. (2010) define sustainable entrepreneurship as the “discovery, creation, evaluation, and exploitation of opportunities to create future goods and services consistent with the sustainable development goals” (p.471). In our view, sustainable entrepreneurship strives to create value that is beneficial for society through opportunity creation, and development in an often uncertain environment. This implies risk-taking abilities, innovative attitude and alertness together with determined ethical concerns.

2.4 Research themes

This section addresses central themes that we identified as particularly recurring in the literature.

Table 2.1: Overview of the research themes identified.

Research themes	Subthemes	Representative articles
Success factors	Social network, collaborations	Weber and Kratzer (2013); Garcia-Retamero, Takezawa, Woike, and Gigerenzer (2013); Dewick and Miozzo (2004).
	Team composition, individual characteristics	Ardichvili et al. (2003); Gibbs (2009); Lans et al. (2014); Nwaigburu and Eneogwe (2013).
	Managerial experience	Sharir and Lerner (2006).
	Company legitimacy, acceptance of the idea in the public discourse; market readiness	Bianchi and Noci (1998); Nicholls (2010); O’Neil and Ucbasaran (2016).
	Cooperation with public and non-profit sectors	Sharir and Lerner (2006).
Processes	Business model innovation	Bocken, Short, Rana, and Evans (2014); Boons and Lüdeke-Freund (2013); Jolink and Niesten (2015); Wustenhagen and Boenke (2006).
	Cognitive Mechanism	Hahn et al. (2014).
	Drivers	Koe et al. (2014); Uhlaner et al. (2010).

Research themes	Subthemes	Representative articles
Institutions	Institutional entrepreneurship; institutions influencing or limiting entrepreneurial action	Katre and Salipante (2012); Lepoutre, Justo, Terjesen, and Bosma (2013); Spence, Ben Boubaker Gherib, and Biwolé (2011); Stephan, Uhlander, and Stride (2015).

2.4.1 How does sustainable entrepreneurship flourish?

Different scholars seek to shed the light on the factors making sustainable entrepreneurship successful. According to Gartner (1988), for example, new venture creation is an outcome of the nexus of individuals, environment, and process, team composition, individual (entrepreneur) traits (Ardichvili et al., 2003; Gibbs, 2009; Lans et al., 2014; Nwaigburu & Eneogwe, 2013), financing means (Bocken, 2015; Miller & Wesley, 2010), policy interactions (e.g. Barrutia & Echebarria, 2012; Bianchi & Noci, 1998; Pinkse & Groot, 2015), and institutional influence (e.g. Katre & Salipante, 2012; Lepoutre et al., 2013; Spence et al., 2011; Stephan et al., 2015).

In the field of social entrepreneurship, studying 33 social ventures, Sharir and Lerner (2006) identified as contribution to success: the entrepreneur’s social network; dedication and team contribution; managerial experience; capital at the funding stage; acceptance of the idea in the public discourse (legitimacy); ratio of volunteers to salaried employees; cooperation with public and non-profit sectors (stakeholder network) and market readiness. Weber and Kratzer (2013) identified **social network** and **business models** as the main factors for a social entrepreneur’s financial and social successes.

In the field of clean-tech, Wustenhagen and Boenke (2006) found that business model design is determinant for sustainable energy technologies. In the area of sustainability, Juravle and Lewis (2009) identified tactics that sustainable entrepreneurs adopted to promote sustainable investment: making the business case for sustainable investment; forming coalition with mainstream investors; industry networking and gaining credible expertise. Bocken (2015) found that the business model design is a key factor for success of sustainable start-ups’, while according to his study, lack of suitable venture capitalists is one of the main threats for success.

A group of articles analysed the relationship between an individual’s tendency to create new venture and the personal social and environmental concerns (e.g. Patzelt & Shepherd, 2011). Kuckertz and Wagner (2010) assessed the influence of sustainability orientation on entrepreneurial intentions with a survey study. They conclude that sustainable related concerns boost entrepreneurial will, but that they decrease the more individuals acquire

business experience. The theory of planned behaviour (Ajzen, 1991), or the profit-first mentality, have also been subject of study to address this aspect (e.g. Lourenco, Jones, & Jayawarna, 2012). Are people who care for environmental or social issues more likely to initiate start-ups? A positive answer to this question opens the doors to the education potential to create substantial impact on sustainable development. The importance of education is supported by other studies which relate a certain set of skills or competences to entrepreneurial success (e.g. Lans et al., 2014; Nwaigburu & Eneogwe, 2013).

2.4.2 Drivers behind a sustainable entrepreneur

This theme answers the question: what moves individuals to engage in sustainable entrepreneurial activities? Why are some entrepreneurs more environmentally or socially concerned (and active) than others? Like for mainstream entrepreneurship, there have been a number of studies attempting to determine the drivers of sustainable entrepreneurship in both individuals and enterprises. Referring to the existing literature and using a schematic approach, it is possible to classify the main drivers as originated by external and internal factors, egoistic and altruistic values. Internal motivation (inner beliefs, or concerns about social and/or environmental causes) or desire for self-employment are internal factors. Market failures (triggering opportunity identification), network, social capital, and public acceptance are to be considered as external ones.

Koe et al. (2014) identify the correlation that sustainable small and medium sized enterprises (SMEs) have between a propensity for sustainable entrepreneurship and: (1) sustainable attitude; (2) social norms (social pressure to undertake environmentally conscious behaviours); (3) perceived desirability (a person's perception on attractiveness of a behaviour); and (4) perceived feasibility (a person's perception on his or her capabilities, also associated to self-efficacy and the desire to be 'self-employed'). Koe et al. (2014) conclude that social norms have a great impact on both, entrepreneurial and sustainable behaviour. All four factors have a positive correlation with a propensity for sustainable entrepreneurship.

While exploring the drawbacks of start-ups in comparison to large establish firms, Hockerts and Wüstenhagen (2010) argue that start-ups are normally focusing on one single environmental or social issue for which they try to excel (and are not fitting the purpose of addressing multilateral issues). They related this to the obsession for one single issue that is, in fact, what drives sustainable start-up entrepreneurs.

A number of authors address the importance of public acceptance – that should not be confused with peer-pressure, which has also been recognized as an important drive – as a key factor in the entrepreneurship process. O’Neil and Ucbasaran (2016) describe the process of legitimacy with a qualitative study of six nascent enterprises. Legitimacy has been recognized as fundamental aspect to engage with stakeholders and therefore to increase success potentials but, as concluded by O’Neil and Ucbasaran, it might often imply compromising an entrepreneur’s drivers. Referring to SMEs, Uhlaner et al. (2010), studying 2000 Dutch firms, affirm that owning a family business motivates entrepreneurs to behave more sustainably due to their closer relationships with local communities and the fear to defame their family’s name. Also Bianchi and Noci (1998), with a qualitative study on 46 companies, recognize the importance of legitimacy for environmental friendly businesses and “having a green image”; but referring to SMEs, they affirm that the pressure is much lower in comparison to larger firms. Nicholls (2010) confirms the relevance of legitimacy also within the social entrepreneurship field.

With a qualitative study of 44 firms in four different countries, Spence et al. (2011) also related the institutional context to the ‘sustainable will’. The importance of institutions has been acknowledged by several scholars and will be further discussed later in this review.

2.4.3 Purpose-driven business or business purpose

The concepts of sustainability and profitability have been put in antithesis for a long time and this can be seen as the root cause behind the sustainable entrepreneurship debate (De Clercq & Voronov, 2011; Parrish, 2010). Although this was particularly true for environmental protective measures, other aspects not strictly related to profit were often questioned against it. The long standing debate on the business case for CSR is one of the many examples (Dyllick & Hockerts, 2002). Is there a business case for sustainability or is there a sustainability case for business? Today, many scholars see sustainable entrepreneurship as a key factor for business success, in comparison to the old-fashion idea that sustainability “costs money” and that it is a capital cost without returns (Bocken, 2015, p. 647). A similar idea is also supported by Weidinger (2014) who views sustainable entrepreneurship not as a “job for the do-gooders or idealists but rather an essential strategic decision” (p. 292).

However, different authors (e.g. Bocken, 2015; O’Neil & Ucbasaran, 2016) agree that “doing good” is, together with environment, society and profitability, a relevant entrepreneur’s driver. This does not conflict to Weidinger's (2014) idea that sustainability does not oppose to profitability any

longer, contrasting what traditional theory from environmental and welfare economics largely concludes. Several scholars, however, support the assumption that market failure within the economic system triggers environmentally degrading entrepreneurial behaviour (Dorman, 1993).

When it comes to new ventures, sustainable start-ups' investors and entrepreneurs believe that sustainable businesses are more likely to succeed (Bocken, 2015). Sustainable entrepreneurship brings innovation and competitive advantage to new and existing ventures (Weidinger, Fischler, & Schmidpeter, 2014). And this holds also for a broader view on successful economic development. What is stated by Weidinger et al. (2013) is that in the European panorama of financial crises, sustainable entrepreneurship has the potential to be a winning strategy to assure economic growth.

In fact, some of the main topics addressed in the SE literature are about business model innovation (e.g. Bocken et al., 2014; Boons & Lüdeke-Freund, 2013; Jolink & Niesten, 2015).

A number of authors have been studying the factors that influence the sustainable performance of companies. Many support the correlation between company size and sustainable performance (e.g. Bianchi & Noci, 1998; Hoogendoorn, Guerra, & van der Zwan, 2015; Uhlaner et al., 2010). For example, Uhlaner et al. (2010), studying a sample of 2000 Dutch SMEs, concludes that the level of sustainability is related to a company's size (large firms are more prone to invest in sustainability), family ownership (that are more socially responsible) and is sector dependent (tangible sectors are likely to perform more sustainable than other sectors). Firms with a negative environmental impact have more opportunities to behave sustainable although they encounter a number of difficulties that are not encountered by nascent ventures.

How can performance of sustainable entrepreneurs be assessed? Schaltegger and Wagner (2011) write: "The degree of environmental or social responsibility orientation in the company is assessed on the basis of environmental and social goals and policies, the organization of environmental and social management in the company and the communication of environmental and social issues. The market impact of the company is measured on the basis of market share, sales growth and reactions of competitors." (p. 222). This vision is also supported by Hörisch (2015) who relates the impact of a sustainable entrepreneur to its market share.

Wut and Ng (2015) assess an organization's sustainable performance by relating CSR to turnover growth and profit growth. They found a positive correlation between CSR and turnover growth and between CSR and profit

growth on the long term, while they found no correlation between these concepts on the short term (i.e., less than two years).

At the country level, sustainable performance in the EU is measured with the Human Development Index Ranking and the Sustainable Development Index Ranking. These were used in Kardos' (2012) conceptual study who relates these indices to the innovation of SMEs in the 10 EU's best performing and worst performing countries. Wut and Ng (2015) used a similar index to select their sample in China using the Hang Seng Corporate Sustainability index. This index, however, is not specifically related to the organizational dimension; it therefore opens the world to a contextual-type of study, like the institutional theory, introduced for the SE discipline in the next section.

2.4.4 The role of institutions

De Clercq and Voronov (2011) argue that to understand individuals' entrepreneurial behaviour, the question is not whether or how much they value profit versus value creation, but rather acknowledging that sustainability and profitability are institutionally embedded. Institutions are oftentimes divided into tangible, 'soft' and intangible 'hard' institutions. Intangible institutions include laws, rules, regulations and instructions, while tangible institutions include habits, routines, established practices, traditions, ways of conducts, norms and expectations (North, 1990).

Pacheco et al. (2010), referring to the game theory literature, affirm that sustainable entrepreneurs can create a positive impact by altering or creating institutions as they represent the "rules of the game". Describing entrepreneurs' conflicting interests with the "prisoner's dilemma", Pacheco et al. (2010) argue that the dilemma of individual versus collective benefits exists in many individual and group decisions relative to ecological sustainability. Such conditions may be evolutionary stable and therefore difficult to alter within the boundaries of the game (institutions). To benefit society, entrepreneurs can "promote new rules in a "bottom-up" fashion" (p. 469).

Can institutions constitute barriers or incentives for sustainable entrepreneurship? Addressing the initiation of social start-ups, Lepoutre et al. (2013) performed a cross-country quantitative study and found that European countries have less social entrepreneurial activities than in Latin American, African, and Anglo-Saxon countries. They related this aspect to the differentiation among three types of economies (which is supported by the Varieties of Capitalism literature): (1) the liberal economy, in which economic and social justice are essentially shaped and governed by market

mechanisms (of which the United States is an example); (2) the cooperative economy, in which the state is considered the best way to redistribute wealth and to regulate markets (the case of most European economies); and (3) the informal economy, characterized by the failure of both markets and the state and in which “affiliations to social groups determine the local creation and distribution of wealth and justice (such as India and several Asian countries)” (p. 711).

The discussion above highlights the importance of the institutional theory for a deep understanding of sustainable entrepreneurship, a cluster of interest that is increasingly attracting researchers’ attention.

2.5 Limitations and research gaps

Our study shares some of the well-known limitations that offer opportunities for future research. The entrepreneurship discipline is in itself a complex and generic field within business studies and the same holds true for sustainability; both are heterogeneous fields and are addressed in different sciences. Future research may explore research lines other than the ones we addressed here.

Additionally, we restricted our analyses to the main topics that currently dominate the field of research. These are important discussions and already offer a challenging research agenda. Future research may complement our analysis and include other themes. Disruptive, radical or incremental innovations increasingly finds a relevant place within the sustainable entrepreneurship literature. Social Impact Assessment (SIA) and Environmental Impact Assessment (EIA) are also of importance. Future studies may assess the aforementioned topics of research.

We also recognize a need to deepen theories relevant for understanding the underlying dynamics of successful sustainable entrepreneurship. Gibbs (2009) states that in order to understand the dynamics of sustainable entrepreneurship, transition management theory could offer building blocks for the most relevant gaps in literature. This fosters one of our views, that is, that systems and game theories are relevant to understand the causes and consequences of (particular dimensions) of sustainable entrepreneurship.

This review of the literature enables the identification of various research gaps in the field of sustainable entrepreneurship. In part this PhD thesis used the identified gaps for the research projects that are presented in the next chapters. In part, the research projects self-enabled the identification and formulation of research questions aligning with the transdisciplinary research paradigm that is advocated in this PhD thesis. Additionally, we also identified research gaps that have not, at least not explicitly, been addressed in this PhD thesis and these gaps serve as inspiration for future research in the field of

sustainable entrepreneurship. In what follows, we highlight the research gaps and the relation with the research that is presented in this PhD thesis.

First and foremost, sustainable entrepreneurs have been the exception to the rule in entrepreneurship practice. Studying their drivers was necessary to understand how sustainable entrepreneurship behaviour could be triggered and fostered. However, once sustainability is acknowledged as a successful strategy that does boost profitability, we argue that future research should also be focussing on the benefits, since this might motivate more action.

Despite the evidence highlighted in this review, we could not identify comprehensive studies on how individuals successfully balance the economic, social and environmental dimensions in organizations that are originally designed to pursue only one or two of these dimensions. This research gap is the main reason for the research presented in this thesis. It aligns with the need to understand the transition or transformation from mainstream to sustainable enterprises or from a double bottom line to a triple bottom line enterprise. In a similar vein, the need for fundamental research about transitions using drivers and benefits as guidelines is also identified in Wiklund, Davidsson, Audretsch, and Karlsson (2011) for mainstream entrepreneurship: “The increased emphasis on opportunities arguably helped entrepreneurship research to focus more on the very early stages of venture development, thereby delivering on the promise of uniquely studying the emergence of new activities and organizations rather than the relative performance of established ones”. Essentially, this is the overall point of departure for this PhD research and the subsequent research projects.

A second research question that has been insufficiently addressed is: Which factors can be considered to be the main predictors for sustainable entrepreneurship success? Lans et al. (2014), for instance, attempt to analyse the relationship between competences and entrepreneurship. Schaltegger and Wagner (2011) affirm that many entrepreneurs start because they have personal environmental or social concerns. This PhD thesis aligns with this research gap, among others, in addressing the phases of sustainable business model innovation in the context of hybrid organizations such as social housing organizations (see Chapter 3).

Third, and on a different note, this literature review suggests that the debate concerning drivers for sustainability should be best analysed from an institutional perspective. As previously mentioned, De Clercq and Voronov (2011) argue that to understand individual entrepreneurial behaviour, the question is not whether or how much they value profit over value creation, but rather acknowledging that sustainability and profitability are institutionally embedded. The effect of institutions on sustainable enterprise

performance is also identified by Cohen and Winn (2007) as a key aspect that warrants more research. The attention for institutions as a predictor for sustainable entrepreneurial success has gained momentum in recent years but it still requires more empirical evidence and research. Institutions concern legal or formal rules in society but also informal rules. This PhD thesis does not study the formal/legal rules and their effect on social housing associations (albeit by definition housing associations in the Netherlands are influenced by formal rules and legislation from the national government) but does analyse the role and evolution of norms, values and behaviour in Chapter 4.

Fourth, as also concluded by Wut and Ng (2015), the question “what is an effective way to assess sustainable performance?” remains largely open. They suggest that other financial indicators such as return on equity, return on assets, cost of capital or market-to-book ratios could be related to sustainability indices. Hence other questions arise: are sustainability indices a comprehensive way to fully capture the value of sustainable organizations? To fill this gap, the SE discipline could be related to SIA and EIA methodologies, striving to provide practical tools for new and existing organizations. Although this PhD does not address this question per-se, it does provide additional evidence to stimulate a theoretical debate on the matter. As discussed in Chapter 5, sustainability efforts from organizations, do not always result in positive sustainability outcomes. Quantitative measurements might fail to capture sustainability efforts as positive sustainability indices might still hide unintended consequences and negative social and environmental impacts.

Fifth, how sustainable entrepreneurship is related to its ecosystem is another research agenda item. Some of the gaps highlighted in the early articles used for this review, show substantial progress made in the past decade. For example, according to Ardichvili et al. (2003), communities, government, non-for-profit and other non-private sector organizations represent a substantial gap in the entrepreneurship research field. Di Domenico, Haugh, and Tracey (2010) identify the topic of social value creation, stakeholder participation and persuasion as being in profound need for further investigation. We believe that these aspects are crucial also for sustainable entrepreneurship research because these can, firstly, facilitate public acceptance –a key aspect identified in the literature for successful sustainable entrepreneurship– secondly, increase the chances of spotting/creating entrepreneurship opportunities, and thirdly, magnify the impact of sustainable enterprises. This PhD contributes to this gap by addresses the role of collaborations among businesses and communities in accelerating sustainability innovation, as discussed in Chapter 6.

Finally, when it comes to methods, a number of authors claim that a small minority of published work uses quantitative researches methods, relating this fact to the infancy of the sustainable entrepreneurship field of research (e.g. Fellnhofner et al., 2014; Gibbs, 2009). Within this review, we do recognize a trend that is moving towards the use of more quantitative methods but this is indeed recent and perhaps limited by the fact that we insufficiently understand the details of the transition process from mainstream/double-bottom line firms to sustainable/triple-bottom line enterprises. This thesis therefore explicitly explored and used advanced qualitative research methods (including longitudinal observations, in-depth interviews, action research, and (n)ethnography).

2.6 Conclusions

We explored the definitions of sustainable entrepreneurship together with the main themes addressed by latest research developments in the field. Sustainable entrepreneurship strives to create value that is beneficial for society through opportunity creation, development and impact creation, in an uncertain environment. This implies risk-taking abilities, innovative attitude and alertness together with determined ethical concerns. It is a solution for the economic, environmental and societal challenges.

Reviewing the existing literature, we explored the prominent role played by both, start-ups and established for-profit firms as well as the not-for-profit sector in innovation and the creation of sustainable added value for our society. The latter represents today's challenge for a new hybrid-type of organizations: effectively balancing societal gains, environmental protection and economic benefits. This is the key driver for sustainable entrepreneurship research. We in particular highlight the importance of analysing the transition and change process from mainstream, single goal/profit-oriented firms into sustainable/triple bottom-line organizations.

With the limitations acknowledged, we believe that this chapter provides an overview of state-of-the-art research in the emerging field sustainable entrepreneurship enabling the identification of a research agenda that in part served as a point of departure for the research projects presented in the next chapters.

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aanjager en verbinder zijn om strategische verbeteringen met impact te realiseren in de organisatie zodat Elkhien en haar medewerkers - waars toegenomen waarde kunnen blijven bieden aan haar huurders, Posseid bij de missie en visie van Elkhien; met aandacht voor energie neutraal bezit goed, Leant - en organisatie Processen.

Als strategie is willen wij de van Elkhien van de Stede zodat we ins toevoegen aan het huisveste door zelf nie Samenwerking

Als beleidsclub
Willen wij een woningportefeuille en woonomgeving realiseren die sociale waarde creëert
Zodat we bijdragen aan het geluk van de huurders
Met aandacht voor
- financiële haalbaarheid
- energie neutraal bezit
- betaalbaarheid
- zelfstandig wonen

Als Team Strategie & Omgeving
Willen wij kanalen en mogelijkheden identificeren die de organisatie inschrijven bij het wilken van de juiste kanalen
Zodat wide strategie van de organisatie mede omgevingen
Met aandacht voor

* wederzijdse relaties en coöperatie met stakeholders

PART III Sustainable Entrepreneurship in Practice

“We are going to change the fate of humanity, whether you like it or not.”

Greta Thunberg

3 Phases of sustainable business model innovation: organizational responses in a hybrid organization context^{9,10}

Existing hybrid organizations are put under pressure to transform their business model to meet new social and environmental goals while assuring financial sustainability. However, organizations with a strong social mission might be reluctant to change, having structured their business model to meet a particular social goal. Through an ethnographic study at a Dutch social housing association introducing an energy-neutral house as a new product, we investigate the key stages and enabling mechanism for a sustainable business model change in which the social and environmental logics are conflicting. We analyse the underlying causal mechanisms in the process of sustainable business model innovation. We show that the mechanisms responsible for organizational inertia in its conventional (negative) connotation, may enable the intended positive and enduring social and environmental change.

⁹ This chapter is based on: Greco, A. and De Jong, G., 2018. Organisational inertia for positive social change: Theory and Evidence from a Housing Association. In *Academy of Management Proceedings* (Vol. 2018, No. 1, p. 12353). Briarcliff Manor, NY 10510: Academy of Management.

¹⁰ The authors wish to thank Professor Lumpkin and Dr. Purdy for their in-depth feedback on earlier versions of the manuscript. Their generosity and expertise have improved this research in innumerable ways. The authors are also thankful to the reviewers of the sub-theme on hybrid organization of the 34th EGOS colloquium 2018 in Tallinn, the AOM Annual Meeting 2018 in Chicago, and the SEE Conference 2018 in Madrid, in which earlier versions of this article were presented.

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“It is an acknowledged fact that we perceive errors in the work of others more readily than in our own.”

Leonardo da Vinci

4 Identity Reflexivity: A Framework of Heuristics for Strategy Change¹¹

Organizations pursuing a sustainability-oriented mission are often characterized by a dual goal, such as the need for financial viability versus the solving of social and environmental problems. A dual goal, often, results in a dual organizational identity. The literature on hybrid organizations shows that these two identities –normally a financial and a social identity– can be conflicting. Understanding how managers with conflicting identities achieve agreements is important to help organizational leaders to pursue sustainability-oriented strategy change. Simultaneously, one of the main debates on heuristics –intended as cognitive simple rules and biases which guide decision making– concerns whether there is a relationship between heuristics at the organizational and individual levels and its (lack of) effects on strategy. To join this debate, we investigate the relationship between (dual) organizational identity and individual heuristics in the process of strategy change. Through participant observations, we took part to the design process of a new strategy undertaken by the management team of a Dutch housing association.

We find that conflicting identities at the individual level influence heuristics at the organizational level, for example through conflicting interpretations, since managers tend to identify with their departments' identity. Despite conflicting interpretations, paths of cognitive shortcuts –that we define as internal and external identity reflexivity– are shared by the conflicting identities. This chapter offers a theory on identity reflexivity as cognitive mechanism of strategy design in the context of hybrid organizations.

¹¹ This chapter is based on Greco, A., Long, T., de Jong, G., 2019. Identity Reflexivity: A Framework of Heuristics for Strategy Change in Hybrid Organisations. In *Academy of Management Proceedings* (Vol. 2019, No. 1, p. 14778). Briarcliff Manor, NY 10510: Academy of Management.

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“Bad decisions made with good intentions are still bad decisions.”

James C. Collins

5 Combining SDGs: the need for a responsive approach in strategy change to manage sustainability paradoxes.^{12,13}

Social purpose organizations are increasingly facing the need to address multiple sustainable development goals simultaneously. One way to address multiple sustainability demands is to seek synergies among them, while minimizing underlying tensions between those demands. Paradox lenses are increasingly used to understand how organizations can manage conflicting – yet interrelated – sustainability goals. Via action research in the setting of a Dutch housing association, we analyse the process of strategy change while observing the societal response to this change. First, we identify the synergies and conflicts of the organization’s sustainable demands, which we categorize as good intentions and unintended consequences, respectively. Second, we define specific types of sustainability paradoxes that emerge while implementing a new sustainable goal. Finally, our abductive study poses the question of whether and how the identification of sustainability paradoxes in the process of strategy change can be used to mitigate the risks of unintended consequences in social purpose organizations.

¹² This chapter is based on Greco, A., Long, T., & De Jong, G. (2019, July). The Freezing Effect of Sustainability Paradoxes and Conflicting Identities in Hybrid Organisations. In *Academy of Management Proceedings* (Vol. 2019, No. 1, p. 14881). Briarcliff Manor, NY 10510: Academy of Management.

¹³ We would like to thank Tobias Hahn for reviewing an earlier version of this manuscript during the paper development workshop at the EGOS Colloquium 2019 in Edinburgh.

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“It’s much better to do the right thing wrong than the wrong thing right. The righter you do the wrong thing the wronger it becomes.”

Russell L. Ackoff

6 Experimentation for sustainability through collaborative innovation contests: the case of the sustainable innovation challenge.¹⁴

Innovation contests open to the public, are increasingly used by businesses as an instrument for open innovation, and in recent years, to address sustainability related questions. However, according to the open innovation literature, one of the main pitfalls of the solutions developed by non-expert designers can be the mismatch between the idea proposed, and the companies' actual capabilities to implement such solutions. Companies' involvement throughout the planning, co-creation, and evaluation phases of the innovation contests, can potentially address this mismatch. Through participant observations, the authors followed the design, development, and final outcome of a "sustainable innovation challenge". Each of the 16 participating companies proposed a challenge in one of the fields of circular economy, energy efficiency, social innovation, or 'sustainable' organizational initiatives. A series of workshops were then facilitated using design-thinking principles. Solutions to the proposed questions were co-created by company's members with volunteers participating in the challenge as well as target users. Our data suggest that innovation contests open to the public, developed and assisted by organization's members, are useful as vehicles for experimentation for sustainability-oriented innovation. The outcomes of the contests, however, were perceived by the participants as effective to create new collaborations, and to deepen the understanding of the sustainability problem, as opposed to providing radical solutions to these problems.

¹⁴ This chapter is based on "Experimentation for sustainability through design thinking: The case of the sustainable innovation challenge" which has been presented at the EGOS Colloquium 2019 in Edinburgh and is co-authored with M. Eikelenboom and T. Long.

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PART III Conclusions

DUURZAME
INNOVATIE
CHALLENGE
FRYSLÂN!

Het duurzame concept van de toekomst!
#DIC2018

DUURZAME
INNOVATIE
CHALLENGE
FRYSLÂN!

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INNOVATIE
TANKSTATION

DUURZAME
INNOVATIE
CHALLENGE
FRYSLÂN!

2018

*“Research is to see what everybody else has seen,
and to think what nobody else has thought.”*

Albert Szent-Györgyi

7 Conclusions and recommendations

7.1 Introduction to the conclusions

Understanding how to transform existing organizations into sustainable enterprises is crucial for sustainable development. This is the point of departure of this PhD dissertation, which aimed at understanding how existing organization can induce and maintain the process of sustainable entrepreneurship.

The research performed to answer the main research question, not only resulted in important implication for practices, it also addresses a fundamental literature gap identified with the literature review reported in Chapter 2. In this review, we could not find comprehensive longitudinal studies on how individuals successfully balance the economic, social and environmental dimensions in organizations that are originally designed to pursue only one or two of these dimensions. This research gap is the main reason for the research presented in this thesis. It aligns with the need to understand the transition or transformation from mainstream to sustainable enterprises or from a double bottom line to a triple bottom line enterprise.

In order to comprehend organizations characterized by an inherent double-bottom-line DNA, the first two empirical projects drew from the literature on hybrid organizations. These are defined as organizations that combine logics, identities and/or goals that conventionally do not go together (Battilana et al., 2017). Understanding whether and how hybrid organizations successfully adapt to change is crucial, yet seldom addressed in the literature (Zollo et al., 2013).

Simultaneously, Alpha, the case organization and object of this study –of which organizational type has been categorized by past scholars as hybrid (Boelhouwer, 2007; Gruis, 2008)– was facing the need to integrate new sustainability logics within its strategy. This is the case of an established hybrid organization, with a social mission, integrating climate mitigation measures as a new, core strategy. In order to implement this strategy, a new

product is introduced: the energy neutral house. For the type of houses owned by the housing associations, the technological solutions to transform them into energy neutral houses are new and costly. Moreover, a number of social challenges arise among the housing association's target group, such as increase in poverty, refugees' request for housing and aging tenants.

Therefore, this research was characterized by a dual goal: (i) Conducting a grounded study to fill a relevant knowledge gap, and (ii) Making this knowledge actionable to the case organization(s) to aid the sustainability transition happening in real time. This dual research goal revealed the need to adopt methods which align with the transdisciplinary research paradigm. Transdisciplinarity is an emerging and grounded approach. It advocates the integration of practice and research, and a methodological exchange across disciplines (Shrivastava et al., 2013). A transdisciplinary researcher uses challenges from the business contexts or the natural environment to design the research questions, in combination with a theoretical gap.

In the following section, each of the main answers to this PhD research question is explained in detail. This chapter is structured as follow: We begin by providing an answer to the main research question, explaining the objective of each empirical project/chapter and their conclusions. We then provide recommendation for future research, by showing the missing link between the phenomena discovered with this research and suggestion new research questions. Subsequently, we provide an overview of the practical implications of this research, both for housing associations in particular, and for organizations interested in integrating new sustainability demands in their strategy, in general. We conclude by including some reflections on transdisciplinary research which can serve as learning for new researchers embarking on similar research journeys.

7.2 Answering the research question

The research question formulated at the beginning of this study was:

How is the sustainable entrepreneurship process induced and maintained in the context of existing organizations?

This PhD research identified four main ways in which existing organization can initiate and maintain the sustainable entrepreneurship process, namely:

1. Through leadership, i.e. a change agent who can induce the sustainability transition and that can build a network of external stakeholders supporting and enforcing such transition (see Chapter 3);

2. Through identity reflexivity, which allows the alignment of internal organizational identities with external organizational demands (see Chapter 4);
3. By adopting a responsive approach to sustainability as opposed to a primarily proactive or reactive stance to environmental or social interventions (see Chapter 5);
4. Through collaborative innovation initiatives, such as open innovation contests, which help existing organizations reframe the sustainability problem they should solve, and build new collaborations (see Chapter 6).

Each of these answers was addressed through four different empirical analyses, each described in a different chapter. Below these answers are further explained.

The analysis reported in Chapter 3, highlights a prominent role of leadership in the initiation of the sustainable entrepreneurship process. To analyze the specific case organization Alpha, we build upon the literature on sustainable business model innovation (SBMI). SBMI is a business model innovation (BMI) that incorporates the three pillars of people, planet, and profit (Bocken et al., 2014) known as ‘triple bottom line’ (Elkington, 1997) value creation. BMI concerns the transformation of one or more of the business model aspects. These include value proposition, value creation and/or delivery, and value capture (Bocken et al., 2014). In the case of Alpha, a new product was introduced. The analysis identified four distinct phases for the SBMI process, namely: 1. Induction, 2. Resistance, 3. Preservation, and 4. Momentum. We identified these phases in the context of a hybrid organization with a hierarchical structure tending to a regime of organizational inertia.

The first main factors contributing to the induction of the SBMI process in the case organization Alpha, were found to be the creation of a network of change makers parallel to –or following– a strong leader’s vision. When the innovation at stake is still in the development stage, building support outside the organizational boundaries (e.g. with suppliers willing to experiment with new technologies or with local governments or NGOs favoring pilots) is a necessary condition, albeit insufficient, to initiate the process of SBMI. Given the hierarchical structure of the Alpha organization, the change could be imposed through the drafting of a new portfolio plan.

What followed was a phase of resistance, in which organizational members strived to maintain the status quo (Hannan and Freeman, 1984). This phase was characterized by conflicts among organizational members of different departments, supported and related to conflicting aspects of the change. Specifically, in the case of Alpha, environmental demands conflicted with

social and financial demands. As such, the conflicts were among people undertaking responsibilities for different organizational aspects, e.g. the asset managers who calculate feasibility aspects versus the client communication managers, who deal with social needs. However, given the organizational performance, we argued that organizational members' conflicts among the different aspects of the TBL are beneficial to maintain a balance among the conflicting sustainability demands.

The period of observation was characterized, by coincidence, by the resignation of Alpha's CEO. This allowed us to observe whether, and if so, how, organizational members would have pushed to get back to the situation prior to the introduction of the SBMI. The analysis revealed that organizational members had acquired a new routine, and were in fact striving to preserve it. When the new CEO of Alpha imposed a new change, resistance towards this change occurred again. The organization had transitioned itself into a new phase of inertia for which a momentum for the SBMI was gained and achieved.

While the analysis revealed four key phases for the SBMI process within Alpha, the research was not sufficiently able to provide real-time explanations for how the new vision of Alpha –offering antecedents of the SBMI process– was formed. The decision for the SBMI in Alpha was undertaken prior to the direct observation period.

What could be observed however, is how arguments to justify decisions were built and used to generate change within Alpha. Chapter 4 provides insights into this aspect by focusing on dual organizational identity which is typical of organizations such as Alpha characterized by a strong social mission (Moss et al., 2011). For this chapter, we build upon the heuristics and the identity literature. An identity-based approach (Foreman and Whetten, 2002) provides useful lenses to study conflicts between social and financial goals since they relate to individual knowledge, competences, and social relations, which all influence one's decision-making (Wry and York, 2017). Simultaneously, given that individual decision-making processes are complex, heuristics –intended as simple rules and biases that guide decision-making-, are therefore often used to simplify reality.

The findings highlighted in Chapter 3 were confirmed in Chapter 4: the conflicts between identities appeared to be predominant in the analysis of Alpha. Chapter 4 shows that in hybrid organizations such as Alpha, conflicting organizational identities can hamper the process of SBMI (Jay, 2011). We argued that understanding how managers with conflicting identities achieve agreements is important to help organizational leaders to pursue sustainability-oriented strategy change. In Chapter 4, we identified the

mechanism of identity reflexivity and that this facilitates the decision-making process within the context of strategy change for SBMI in hybrid organizations such as Alpha. We showed that managers (i) relate their personal expectations to their perceived expectations of the organization (internal reflexivity), and (ii) to what they perceive to be the clients' expectations toward the organizations (external reflexivity), in order to (iii) either approve or reject the arguments of the opposing identity, that is, the person that has norms, values and behavior opposite to their own.

Chapter 4 showed that conflicting demands and competing identities often result in paradoxical goals. As highlighted by the sustainable entrepreneurship literature (see Chapter 2), the activities of sustainable entrepreneurs should ultimately result in a positive societal and environmental impact. However, daily practice shows that this is not always the case. When organizations combine multiple sustainable development goals, there is a significant risk of causing unintended consequences in which, for example, the pursuing of an environmental goal can compromise the pursue of a social mission, as argued in Chapter 5. Contrarily to what is generally claimed in the literature on business sustainability, specifically the literature referring to corporate social responsibility (Chang, 2015), this PhD research shows that a proactive approach for tackling environmental and societal goals simultaneously is not always best.

One of the main conclusions presented in Chapter 5 is that when the sustainability goals that will be addressed by an organization are characterized by paradoxical relationships (meaning that they are contradicting yet interrelated), the poor management of tensions hinders the organization's proactive stance, resulting in unintended, negative consequences. We conclude that a responsive approach is to be preferred when combining multiple sustainable development goals in one organization. Such a responsive approach could consist of a user-centric approach to change (in which the concerns of users are addressed early in the process). In the case of Alpha we concluded that instead of striving for a large scale transition in the shortest time possible (as expressed by the leader's ambition to refurbish one house per day), testing through prototyping and hence, responding to a user's feedback, would have been more desirable. This is in line with the principles of human-centered design approaches such as design thinking, which advocate a "fail cheap and fail early" approach.

Design thinking is a helpful approach for organizations such as Alpha that strive to solve multiple sustainable development goals simultaneously. Design thinking is appropriate due to its experimenting characteristics and we therefore conducted an action research project presented in Chapter 6. For

this, we had the unique opportunity to facilitate a series of workshops in the contest of the Duurzame Innovatie Challenge Fryslân 2018. This unique research setting provided insights into how small- and medium-sized enterprises can use this type of challenge for sustainability-oriented innovations. The contributions presented in Chapter 6 are threefold. First, we introduced a definition of collaborative innovation contests. These settings concern innovation contests that involve close collaboration between the participants that join the challenge and the companies proposing the contest's objectives. These types of contests are different from more traditional innovation contests, where companies formulate challenges *ex ante* and share this in public, often anonymously via the internet, without being actively involved with the challenge and the public parties *ex post*. However, viewing the public as an information source only, rather than a co-creator of sustainable open innovations can hinder mutual understanding and lead to a mismatch between proposed ideas/solutions and the company's capabilities to implement these ideas (Enkel et al., 2009). Collaborative innovation contests such as the one defined and studied in Chapter 6 are therefore a preferred catalysts of sustainable open innovations.

Second, the collaborative innovation contest presented in Chapter 6 was facilitated through design thinking. Design thinking can potentially bridge the mismatch between open innovation outcomes and company capabilities to adopt such innovation. The data and results presented in this chapter show that process-oriented challenges are easier to be addressed through design thinking by non-expert designers than product-driven innovations. These require expertise that might lack among the participants involved in the contests.

Third, the analysis in Chapter 6 included the analysis of the impact of the contests on the case companies in two different moments: immediately after the end of the contest period and after one year. This intertemporal analysis revealed two main consequences of the innovation contests: 1. the creation of new collaborations, and 2. a perceived improvement of the understanding of the sustainability problem addressed by the challenge. The latter is deemed particularly important because problem definition is antecedent to the design of effective solutions. Many of the sustainability-oriented innovations that fail, often treat the symptoms of a sustainability problem, without addressing its cause. Focusing on the wrong problem so to say, is one of the main critiques to many of the sustainability solutions available nowadays.

The following table summarizes the results of the research projects presented in the empirical chapters of this thesis and relates the main findings to the

research question at hand. The following table summarizes the highlights of each chapter.

Table 7.1: Results overview.

Chapter title	Research questions	Results highlights
2. Sustainable entrepreneurship: Definitions, themes and research gaps	<p>How can we define sustainable entrepreneurship?</p> <p>How is sustainable entrepreneurship informing existing businesses to transform sustainably?</p>	<ul style="list-style-type: none"> • Sustainable entrepreneurship can be defined as the process that strives to achieve positive environmental, societal, and economic impact through business. • Entrepreneurship can include, but it is not restricted to, the creation of new enterprise. • Theories of sustainable entrepreneurship can be used to understand how existing businesses can transform to improve their environmental and social impacts.
3. Phases of sustainable business model innovation: organizational responses in a hybrid context	<p>How can highly regulated hybrid organizations induce and maintain sustainable business model innovation (SBMI)?</p>	<ul style="list-style-type: none"> • When the innovation at stake is still in the development stage, building support outside the organizational boundaries, is a necessary but insufficient condition to initiate the process of SBMI. • In a downward hierarchical organizational structure, entrepreneurial leaders with an environmental or social drive can induce the SBMI process, irrespective of the organizations' internal capabilities and internal legitimacy. • Organizational members' conflicts among the different aspects of the TBL, are beneficial to maintain a balance among these aspects.

Conclusions and recommendations

Chapter title	Research questions	Results highlights
4. Identity Reflexivity: A Framework of Heuristics for Strategy Change	How does a dual organizational identity influence a manager's heuristic in the process of strategy design aimed at achieving a new sustainability goal?	<ul style="list-style-type: none"> • Conflicting organizational identities bias managers' interpretations and decision-making. • Paths of cognitive shortcuts, here defined as internal and external identity reflexivity, are shared by conflicting identities while designing a new strategy. • Managers' perceived legitimacy of a new sustainable target (e.g. societal acceptance of a new energy transition goal) affects decision-making in sustainable strategy design through external identity reflexivity. • Individual level heuristics influence heuristics at the organizational level through the mechanism of external and internal identity reflexivity.
5. Combining SDGs: the need for a responsive approach in strategy change to manage sustainability paradoxes	How can the unintended consequences resulting from the simultaneous combination of conflicting yet interrelated sustainable development goals be mitigated?	<ul style="list-style-type: none"> • New types of paradoxes occurring when combining environmental and social goals in the context of social housing associations are identified: namely: performing, planning, involvement, and impact paradoxes. • Proactive approaches to sustainability do not always lead to positive social impacts. • Responsive approaches are suggested when combining SDGs that shows paradoxical relationships among each other.
6. Experimentation for sustainability through collaborative innovation contests: the case of the sustainable innovation challenge	How can collaborative innovation contests, involving design thinking, be used by businesses to accelerate sustainability-oriented innovation?	<ul style="list-style-type: none"> • Collaborative innovation contests are a promising catalyst of SOI. • Collaborative innovation contest can assist firms in gaining a comprehensive understanding of the sustainability problems they are facing. • Design thinking can potentially bridge the mismatch between open innovation outcomes and company capabilities to adopt such innovation. • Design Thinking methodology should be better calibrated to the type of challenge as it appears not to be suitable just for every sustainability related question.

7.3 Recommendation for future research

The key aspects addressed in Chapters 3, 4, and 5 were organizational inertia, conflicting organizational identities and sustainability paradoxes, respectively. For simplicity, and in order to disentangle the complexity involved for each of these phenomena, each of these were addressed separately in a research project and chapter. However, despite their separate studies, the phenomena occurred simultaneously and therefore deserve a holistic and integrated perspective in order to come to grips with the over-all complexity of how organizations can change for good and transform existing businesses into sustainable enterprises.

Therefore, this PhD invites future research to undertake a more holistic approach to these phenomena. Understanding the relationships between the three aspects –i.e., inertia, conflicting identities and sustainability paradoxes– is challenging given the specific research methodologies adopted in the various chapters in this thesis. The three phenomena were studied by looking at the interaction between individual and organizational responses, and between organizational and societal responses.

There might be an intrinsic relationship among the three phenomena. What was observed is that, although the understanding of sustainability paradoxes can activate strategic change within an organization, these paradoxes could also feed inertia while freezing decision-making due to the conflicting identities characterizing hybrid organizations such as Alpha. These concepts are presented in the figure below.

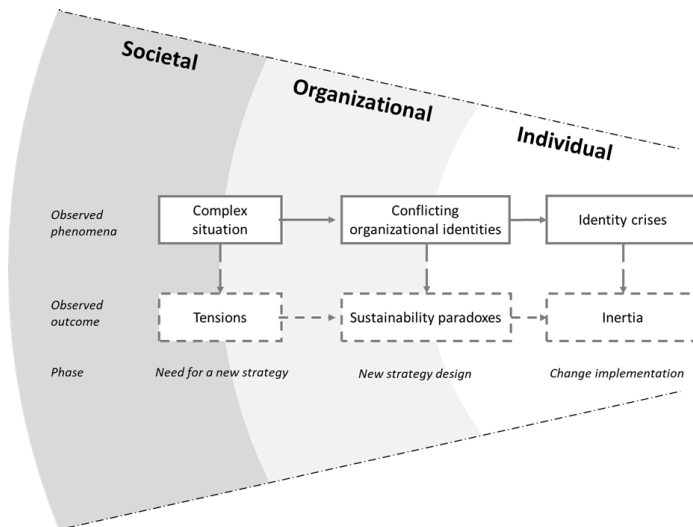


Figure 7.1: How sustainability paradoxes could lead to inertia (individuals’ reluctance to change) in hybrid organizations when different identities are in conflict.

The phenomena tackled in this research are inherently complex (Berger & Kuckertz, 2016). The understanding of the business modelling innovation process, for example, where the interplay between poverty alleviation, climate change, and financial solutions played such important roles, called for a longitudinal research approach, while attempting to simplify the systematic analysis of theory and practice. We developed the research in the setting of a case company Alpha, a social housing association in the North of the Netherlands. Alpha offered a unique longitudinal opportunity to develop and apply a wide range of research methods needed to understand the underlying causalities in the transition from a regular to a sustainable enterprise. That said, this PhD research aligns with the limitations of single case-study research, in which empirical observations might relate to the unique features of the case organization. Future research may study whether and how differences in triggers and organization-al/regional/national contexts matter for the inertia and other crucial features identified here. Other types of social purpose organizations, for ex-ample, may face other and different institutional constraints and dynamics in their contexts. It would be worthwhile to study whether and how other organizational features and contexts matter for the main research question studied in this PhD thesis.

Our case organization provides evidence that is useful to compare change processes between mainstream and hybrid enterprises and with leadership found as a key factor for business model innovation. Yet, many questions remain unanswered. Whether and how imprinting and inertia may originate from a CEO replacement or from the organizational type and services provided deserves more research. Future research along the lines presented in this PhD thesis would enable us to study and compare the role of leadership in sustainable business model innovations. Also, the social DNA of the case company studied in this PhD thesis might, despite its uniqueness, influence and bias the way the TBL is balanced and maintained. For instance, how are organizations with an environmental DNA integrating new social demands in the process of sustainable business model innovation?

This PhD research has shown that when sustainability goals are characterized by paradoxical relationships, meaning that they are contradicting yet interrelated, a poor management of tensions hinders the organization's proactive stance, resulting in unintended, negative consequences. It is proposed that a responsive approach is to be preferred when combining multiple sustainable development goals. This could consist of a user-centric approach to change, in which concerns of users are addressed early in the process. In the case organization studied in this PhD thesis, for instance, instead of striving for a large-scale transition in the shortest time possible (e.g. by refurbishing one house per day), testing through proto-typing –and in so

doing responding to user feedback in iterative cycles– would be preferred. This is easier said than done. Having been embedded in the case organization for over two years, we know that there are limitations of this context to effectively apply this strategy. Thus, a question for future research –though context specific– is: How can social housing associations effectively adopt human centred approaches at low costs?

Finally, the integration of multiple SDGs was challenging in this context. Since the 17 SDGs are clearly defined and are in place, which of these goals risk to generate more paradoxical relationship among each other? Are there specific conflicting SDG of which strategy makers should be aware of? And in a similar vein instead, what are winning SDGs combinations that should be endorsed? Additionally, and in this context, can the identification of sustainability paradoxes be used to manage the risk of unintended consequences in both, social and for-profit enterprises?

7.3.1 Recommendations for practice

The first three projects of this PhD research used the context of a social housing association. Nonetheless, the results and insights presented in this PhD research has implications for managers of other public organizations and for-profit firms.

First, the findings of this research offer guidelines for local governments when promoting positive social change for organizations known to be change inherently resistant. External legitimacy in particular was found to be a prerequisite to internal changes in the induction phase. Prior research suggests that all organizations should be agile, innovative, and continuously open to change (e.g. Annosi et al., 2018). Although we support this view, this PhD study suggests that this is unlikely for mission driven and institutionalized hybrid organizations. In other words: is it feasible or perhaps even desirable to change all existing organizations, profit and not-for profit, governmental and non-governmental organizations, into agile ones, always ready to innovate and transform themselves? The positive effects of inertia reported in this study suggest otherwise. Hybrid organizations reluctant to change can benefit from their intrinsic mechanisms of inertia, in order to successfully create enduring positive social change.

Second, this PhD research highlights the importance of the hierarchy of the triple bottom line of sustainability. Nowadays, almost all managers may have learned about the notion of the triple bottom line of people, planet and profit. Despite the critiques of the triple-bottom line, this concept has served managers as useful framework to think about different types of impacts and strategies for sustainability. With this thesis we highlight a hierarchical order

that could further guide managers in their strategy design, namely that: there would not be Profit without People and there would not be People without a Planet. In line with contemporaneous sustainability research, this PhD thesis highlights the importance of the hierarchical order among the pillars of the triple bottom line of sustainability in organizations and the importance thereof for the design, implementation and management of new sustainability strategies. The interrelatedness between the three dimensions of sustainability in organizations is rather decisive. In a capitalist society it is often argued that to address environmental sustainability (Planet), there needs to be a business case (Profit) for it. This thesis is also intended to add and highlight the interrelatedness among these three pillars: for a business case to exist (Profit), there needs to be a satisfied need of a user target groups (People). In other words, the key recommendation of this PhD thesis is that People need to be addressed in order to save the Planet through Profit. If this statement potentially requires ethical concerns for managers in for-profit organizations –and after all, not all managers are, nor potentially should be, sustainable entrepreneurs– it is recommended to consider the business aspect of sustainability. If managers would follow the money, the manager’s role is of crucial importance for a truly sustainable enterprise.

Third, although the importance of user-centric and problem-centric design principles for entrepreneurs is not new, this PhD research highlights the importance of satisfied target groups as the key to successfully transforming business in sustainable ones.

For sustainability transitions to occur, technological and social innovations are equally important. Innovative solutions for sustainability problems will only be effective when they will be endorsed and adopted by the users. This is one of the reasons why, integrating user-centric approaches in the process of sustainable innovation is so important. Adopting user-centric innovation approaches will not only help designing more effective sustain-able solutions but will also mitigate the risks of unintended consequences.

7.3.2 A final note on the role of “active” researchers

By conducting action research during the process of strategy forming, we aimed to facilitate sense-making and help the case company managers navigate through the various sustainability paradoxes. During our active participation in the strategy formation workshops, we invited the management team to recognize and acknowledge the principles of environmental integrity, economic prosperity, and social equity in their strategy and vision.

Although different scholars have been performing action research with teams of managers, and in doing so claiming its role in affecting organizational change (e.g. Lüscher & Lewis (2008), the potential of action research approaches in organizational design for sustainable development (Zuber-Skerritt, 2012) has not been explored much in the literature. The interaction between the academic and the corporate world –offering a source of debate on the dichotomy between theory and practice– is still predominantly informative nowadays, especially with respect to sustainability questions. In contrast to the more passive view of academic scholars –and one in which academic researchers are advised to acquire data, advise, or offer evidence that supports decision-making– action research supports a collaborative approach with shared responsibilities and efforts and with combining different sets of academic and corporate expertise in a transdisciplinary fashion.

Although we are aware that measuring the exact impact of an active researcher is potentially challenging, the experience of doing action and transdisciplinary research presented in this PhD thesis aligned with encountering a sense of trust towards academic scholars by managers. This trust enabled an alternative framing approach of the problem that was jointly addressed by the managers and the academic scholars.

This sense of trust among academic scholars and the business managers that participated in this PhD research resulted in a new framing introduced by academic scholars and accepted by business managers– and one which was different from what the organization was used to. This was perhaps among the main mechanism facilitating the design of a new strategy for the case organization Alpha.

I therefore encourage future researchers to advance methodological and theoretical knowledge on the unique potential of action and transdisciplinary research for sustainable strategy development and, in doing so, the transition towards more sustainable societies.

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Samenvatting

Hoe kunnen bestaande organisaties het proces van duurzaam ondernemen stimuleren en in stand houden?

Omdat duurzame ontwikkeling niet kan plaatsvinden zonder duurzame organisaties is inzicht in hoe organisaties verduurzaamt kunnen worden essentieel. Dit onderzoek is gebaseerd op de literatuur over duurzaam ondernemerschap en analyseert hoe bestaande organisaties de transitie naar duurzame ondernemingen kunnen maken. De activiteiten van een duurzame onderneming komen overeen met de doelstellingen voor duurzame ontwikkeling. Na een conceptuele analyse van de kernconcepten van de literatuur over duurzaam ondernemerschap worden de resultaten van vier empirische projecten gepresenteerd.

Het eerste project is gebaseerd op empirische observaties die voortvloeien uit een tweejarige etnografische studie bij een woningcorporatie. Deze woningcorporatie implementeerde een nieuwe strategie met het doel de volledige portefeuille energieneutraal te maken. De etnografische methodologie maakte een meerjarige observatie mogelijk. In dit project is het proces van duurzame bedrijfsmodelinnovatie in de context van een organisatie gedreven door een sociale missie geanalyseerd. De resultaten benadrukken de belangrijke rol van leiderschap en het organisatienetwerk in het initiëren van een duurzame bedrijfstransformatie. Deze bevindingen worden beschreven in hoofdstuk 3.

Gezien het hiërarchische karakter van de case-organisatie, concentreerde de tweede studie zich op het besluitvormingsproces van de organisatiemanagers. Deze studie resulteerde in een theorie over heuristisch –gedefinieerd als eenvoudige cognitieve regels en vooroordelen die worden gebruikt om complexe beslissingen te nemen– met betrekking tot sociale, ecologische en financiële duurzaamheid. Deze bevindingen worden beschreven in hoofdstuk 4.

De aspecten van duurzaamheid zijn vaak paradoxaal. Daarom werd de paradox als lens gebruikt voor de derde studie waarin actieonderzoek werd gebruikt als methodologie. Dit project is bedoeld om strategieën te zoeken die het risico op onbedoelde gevolgen van de combinatie van de tegenstrijdige maar onderling samenhangende eisen van duurzaamheid kunnen verkleinen. In dit onderzoek zijn verschillende nieuwe typen duurzaamheidsparadox geïdentificeerd. Ook de relatie tussen paradoxen en de onopzettelijke gevolgen wordt in deze studie benadrukt. Deze bevindingen zijn beschreven in hoofdstuk 5.

Terwijl de eerste drie projecten zich focusten op duurzaamheidsgerichte transitie binnen de grenzen van een organisatie, onderzocht de vierde studie een oplossing om dit proces te initiëren wanneer organisaties de middelen missen om dit intern te doen. Deze studie biedt inzicht in hoe bedrijven open innovatie-uitdagingen kunnen gebruiken om hun duurzaamheidstransitie te versnellen. Dit project onderzocht de “Duurzame innovatie challenge Fryslân 2018” als casestudie en analyseerde het ontwerpproces en de resultaten van deze publieke wedstrijd. Dit project onderzocht ook de motivatie van de deelnemers –waaronder studenten, werkzoekenden en inwoners– en de motivatie van de 16 organisaties die een uitdaging aan het publiek voorlegden om op te lossen. Deze studie concludeert dat het gebruik van design thinking in een open innovatie wedstrijd verschillende voordelen kan bieden. Met name: een betere definitie van de duurzaamheidsuitdaging, de nieuwe regionale samenwerkingen voor duurzaamheid, en de creatie van een experimentele ruimte waarbij nieuwe oplossingen kunnen worden getest met eindgebruikers en anderen belanghebbenden. Deze bevindingen zijn beschreven in hoofdstuk 6.

In dit promotieonderzoek zijn vier belangrijke manieren geïdentificeerd waarop bestaande organisaties het duurzame ondernemerschapproces kunnen initiëren en handhaven, namelijk:

1. Door leiderschap, met een veranderaar die de duurzaamheidstransitie kan starten en die een netwerk van externe belanghebbenden kan opbouwen die een dergelijke transitie ondersteunen en handhaven (zie hoofdstuk 3);
2. Door middel van identiteitsreflexiviteit, waardoor interne organisatie-identiteiten kunnen worden afgestemd op externe organisatie-eisen (zie hoofdstuk 4);
3. Door een responsieve benadering van duurzaamheid te hanteren in tegenstelling tot een primair proactieve of reactieve houding ten opzichte van milieu- of sociale interventies (zie hoofdstuk 5);

4. Door middel van gezamenlijke innovatie-initiatieven, zoals open innovatie-wedstrijden, die bestaande organisaties helpen bij het herformuleren van het duurzaamheidsprobleem dat ze moeten oplossen, en die de organisatie helpen nieuwe samenwerkingsverbanden op te bouwen (zie hoofdstuk 6).

In de afsluiting van dit proefschrift worden de maatschappelijke en theoretische implicaties van de resultaten benadrukt. Daarnaast worden richtlijnen voor toekomstig onderzoek gegeven.

About the author

Angela Greco is a PhD student in the graduate school of Campus Fryslân, University of Groningen. Originally trained in engineering, Angela has been both a researcher and a consultant in her career. From 2012 till 2014 she co-created Prêt-à-Loger, a sustainable renovation solution for existing houses, winning five awards at the world competition Solar Decathlon 2014. In 2015, she worked as sustainability and innovation engineer for Techniplan Adviseurs, a building consultancy company based in Rotterdam. Over the past years, she has been collaborating with other organizations on sustainable innovation initiatives, including Climate-KIC, Brainfuel and, Centre for Innovation. As part of her research activities she conducted fieldwork for ARTEK (Greenland) for the Natural Energy Efficiency and Sustainability Northern Periphery Programme.

During her visiting period (August-December 2019) at Ivey Business School, Western University in Canada she worked on responsible innovation practices together with Professor Bansal.

Angela volunteered as a member of the committee of representatives of the Energy Community of Young Researchers (part of the New Energy Coalition) in 2018, for which she was the author of the column “meet the PhD candidate”. In 2017 she was a founding member of ION (Italiaanse Onderzoekers in Nederlands), a consortium of Italian researchers in the Netherlands funded in collaboration with the Italian Embassy.

Angela holds a Master of Science in Civil Engineering from the Delft University of Technology, and a Bachelor of Science in Building Engineering from the University of Naples. Additionally, she completed the Honours International Leadership Programme at the University of Leiden, the Netherlands.

Conference Presentations

Identity reflexivity: a framework of heuristics for strategy change in hybrid organizations. AOM (Academy of Management) annual meeting, 2019, Boston, USA: “Broadening our sights”

The Freezing Effect of Sustainability Paradoxes and Conflicting Identities in Hybrid Organizations. AOM (Academy of Management) annual meeting, 2019, Boston, USA: “Broadening our sights”

Experimentation for sustainability through design thinking: the case of the sustainable innovation challenge. EGOS (European Group of Organization Studies) conference, 2019, Edinburgh, Scotland: “Enlightening the Future: The Challenge for Organizations”

When chasing energy neutrality becomes unethical: paradoxes of climate mitigation strategies for social housing. SEE (Sustainability Ethics Entrepreneurship) conference, 2019, Miami, USA

Identity reflexivity and managerial sense-making: facilitating change in sustainable enterprises. RENT (Research in Entrepreneurship and Small Businesses) conference, 2018, Toledo, Spain: “Sustainable entrepreneurship: A win-win strategy for the future”

Organizational inertia for positive social change: Theory and Evidence from a Housing Association. AOM (Academy of Management) annual meeting, 2018, Chicago, USA: “Understanding the inclusive organization”

The paradigm of balancing the triple bottom line in hybrid organisations. EGOS (European Group of Organization Studies) conference, 2018, Tallinn, Estonia: “Surprise in and around Organizations: Journeys to the Unexpected”

Should organizations strive for inertia to achieve positive social change? SEE (Sustainability Ethics Entrepreneurship) conference, 2018, Madrid, Spain

Sustainable entrepreneurship in social housing. IESE-LUISS Conference on Responsibility, Sustainability and Social Entrepreneurship, 2017, Rome, Italy

Publications

Greco, A., Long, T., & de Jong, G. (2019). **The Freezing Effect of Sustainability Paradoxes and Conflicting Identities in Hybrid Organizations.** *Academy of Management Proceedings* Vol. 2019, No. 1, p. 12353, Briarcliff Manor, NY 10510: Academy of Management.

Greco, A., Long, T., & de Jong, G. (2019). **Identity Reflexivity: A Framework of Heuristics for Strategy Change in Hybrid Organizations.** *Academy of Management Proceedings* Vol. 2019, No. 1, p. 12353, Briarcliff Manor, NY 10510: Academy of Management.

Greco, A., and de Jong, G. (2018). **Organizational inertia for positive social change: Theory and Evidence from a Housing Association.** *Academy of Management Proceedings* Vol. 2018, No. 1, p. 12353, Briarcliff Manor, NY 10510: Academy of Management.

Greco, A., Konstantinou, T., Schipper, R., Binnekamp, R., Gerritsen E. and van den Dobbelsteen Andy. (2017). **Stakeholders view on commercial benefits for energy neutral refurbishment of let properties.** In: *World Sustainable Built Environment Conference Proceedings*. Hong Kong, 5-7 June, p. 1555-1560.

Greco, A., Jonathan, T. and van den Dobbelsteen Andy. (2017). **Economic and Sensitivity Analysis of Net Zero Energy Refurbishment of Terraced Houses.** In: *World Sustainable Built Environment Conference Proceedings*. Hong Kong, 5-7 June, p. 1555-1560.

Greco, A., Konstantinou, T., Schipper, H.R., Binnekamp, R., Gerritsen, E., de Graaf, R. and van den Dobbelsteen, A. (2016). **Business Case Study for the Zero Energy Refurbishment of Commercial Buildings,** *Sustainable Built Environment Regional Conference Proceedings*, ETH Zürich 13-17 June, pp. 334-339, vdf Hochschulverlag AG an der ETH Zürich.

Greco, A., Jonathan, T., and van den Dobbelsteen, A. (2016). **Economic Factors for Successful Net Zero Energy Refurbishment of Dutch Terraced Houses,** *Sustainable Built Environment Regional Conference Proceedings* ETH Zürich 13-17 June, p. 569-600, vdf Hochschulverlag AG an der ETH Zürich

How can existing organizations induce and maintain the process of sustainable entrepreneurship?

Because sustainable development cannot occur without sustainable businesses, understanding how to transform organizations into sustainable ones is essential. After a conceptual synthesis on the core concepts of the sustainable entrepreneurship field, the outcomes of four empirical projects are presented. The first project relies on empirical observations resulting from an ethnographic study at a housing association implementing a new strategy to transform their entire portfolio into energy neutral houses. Given the hierarchical nature of the case-organization, the second study focussed on the decision-making process of the organizational managers, this being fundamental to maintain the sustainable entrepreneurship process. This study resulted in a theory on heuristics, here defined as simple cognitive rules and biases used to make complex decisions regarding social, environmental, and financial sustainability. These aspects of sustainability might often be paradoxical, resulting from the combination of contradictory, yet interrelated, sustainability demands. By means of action research, the third study uses paradox lenses to seek strategies to mitigate the risk of unintended consequences. While the first three projects focus on a sustainability-oriented innovation within the organizational boundaries, the fourth study provides a solution to initiate this process when organizations lack the resources to do so internally.

This PhD research identified four main ways in which existing organizations can initiate and maintain the sustainable entrepreneurship process: through leadership, through identity reflexivity, by adopting a responsive approach –as opposed to either proactive or reactive– to sustainability, and through collaborative open innovation initiatives. Simultaneously, this PhD highlights that failing in meeting the users' needs either leads to unintended consequences or failure of entrepreneurship efforts.

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