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Master's Thesis

Potentials and limitations of corporate intrapreneurship in a sustainability context – a conceptual model



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Abstract

Entrepreneurship in organizations is defined from different perspectives and subjects, leading to a fragmented body of knowledge when it comes to defining its key characteristics. Moreover, a holistic connection between entrepreneurship within organizations and sustainability is yet to be made. This thesis aims at clearing up the numerous definitions of entrepreneurship within organizations and at exploring the relationship between entrepreneurship within organizations and sustainability. The thesis departs from considering the bottom-up approach of intrapreneurship and the top-down perspective of corporate entrepreneurship with their connection to a sustainability context. Methodologically, we combine an exploratory research design with an abductive way of reasoning, where we analyze an in-depth case study of a well-established Swedish manufacturing company with the help of intrapreneurship- and corporate entrepreneurship literature. Our result is that, in a sustainability context, corporate entrepreneurship and intrapreneurship are complexly intertwined and dependent on each other. Both concepts are also deeply and mutually connected to the industry environment, organizational issues and sustainability challenges. This leads to the conclusion that corporate entrepreneurship and intrapreneurship in a sustainability context cannot be sensibly divided. Therefore, we contribute to theory by developing a conceptual model that promotes the term “corporate intrapreneurship” to reflect the complex and intertwined nature of entrepreneurship within organizations answering to sustainability challenges.

Keywords

Corporate entrepreneurship, intrapreneurship, corporate intrapreneurship, sustainability, sustainable development, conceptual model

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1. Introduction

In the introduction, an overall for our thesis background is given. Also, we provide a problem discussion where the connection of this thesis with current research and prevailing research gaps is presented. In the thesis' purpose, the overall research aim, the research questions and a short outline of the thesis contents are discussed.

1.1 Background

Organizations play a central role in affecting sustainability as a whole and in achieving or undermining various sustainability goals (Dyerson & Preuss, 2017), for example fulfilling present needs while also ensuring the fulfillment of those needs for future generations (WCED, 1987). Another role of organizations is to meet societal needs by respecting the planetary boundaries that all life on earth is depending on (Steffen et al., 2015). At the same time, respecting sustainability goals and working towards their achievement is important for the long-term survival of firms themselves, as they for example need to adapt to emerging changes or exploit newly developing opportunities caused by sustainability issues. This is important in order to expand into new markets or new product areas (Willard, 2012).

Firms and sustainability goals therefore have a close and mutual, yet complicated and dynamic relationship towards each other. This is portrayed by on the one hand respecting sustainability in organizations not only having an ethical, societal and ecological responsibility implication, but on the other hand providing key factors for a firm's long-term survival, development and legitimacy as well. This complex relationship between firms and sustainability context can be connected to the fact that firms and organizations are intensely involved in all three sustainability aspects that build the triple bottom line approach towards sustainability. There, a dynamic balance between the three dimensions of natural environment, economic activity and human social welfare has to be established in order to reach sustainability (Binder & Belz, 2015). At this nexus of corporations and sustainability context, entrepreneurship within firms comes into consideration, as it is a source of innovation and creativity processes as well as opportunity recognition and exploitation (Nielsen et al., 2021). This can help to understand how firms act within the context of the described sustainability issues that build the framework for every business operation.



1.2 Problem discussion

There has been a growing interest in researching corporate entrepreneurship with contributions from different research fields, academic backgrounds and theoretical approaches. This has led to a large and sometimes unprecise body of terminology, where entrepreneurship within organizations and firms can be labelled with numerous terminologies, for example corporate entrepreneurship, internal corporate entrepreneurship, entrepreneurial adventure, strategic entrepreneurship, organizational entrepreneurship, intrapreneurship or corporate venturing, depending on the research field and academic background the scholars are situated in. Often, these terminologies are not used consistently, they share thematic overlapping or even mean synonyms to each other, and definitions and conceptualizations have developed into different thematic directions in their respective knowledge traditions (Urbano et al., 2022; Perlins et al., 2022). While this has the advantage of numerous and diverse contributions to enrich the discourse and to add validity and robustness to the field, it also involves the drawback of the many different terminologies. Also, various involved academic backgrounds and research traditions make it difficult to assess and compare research results, to gain a deeper understanding of its complex and dynamic relations and implications and to find directions for new research as well as for the thematic development of the field itself. Therefore, further research contributions with the aim to bring clarity into the general research field and especially to the terminology and conceptualizations of entrepreneurship in organizations is highly needed.

Despite these uncertainties, entrepreneurship within firms is researched with regard to various different aspects despite directly investigating its relationship in the context of corporations facing sustainability challenges. Some works mention the importance of recognizing intrapreneurship and corporate entrepreneurship regarding the organization's environment (Pirhadi & Feyzbakhsh, 2021; Blanka, 2019). In this regard, there are for example approaches that investigate corporate entrepreneurship in terms of business performance, innovation or employee motivation (Urbano et al., 2022; Perlins et al., 2022). Other studies examine entrepreneurship in organizations with a special focus on its effects on company legitimacy, leadership and measurement issues (Göcke et al., 2022; Verma & Mehta, 2022; Gawke et al., 2019), yet there is no direct and consistent link between entrepreneurship within organizations and sustainability



challenges established in prior research. For example, when assessing keyword occurrence in thematically suitable research contributions, the word “sustainability” is not present (Perlines et al., 2022). Therefore, especially with keeping the background of the important role entrepreneurship can play for organizations to face sustainability challenges in mind, the relationship between corporate entrepreneurship and the context of sustainability issues still needs to be investigated further, “since entrepreneurial activities are essential for companies to adapt to environmental changes, a greater appreciation of the factors that determine such activities should have both theoretical and practical implications” (Urbano et al., 2022, p.1553f).

When it comes to the spaces and regions where research about intrapreneurship is mainly conducted, it is striking that besides co-authorships and mutual citation, the Nordic countries and especially Sweden do not play a major role in this research field, although this topic is present in research from many European countries: Not only are no Swedish or Nordic institutions involved in research about corporate entrepreneurship and intrapreneurship, also the most influential and productive authors in that field have a connection to the Swedish research tradition about entrepreneurship in organizations (Perlines et al., 2022). Quite the opposite is true for research about corporate entrepreneurship, where Sweden is ranked as the third most often represented single country of origin of authors that research corporate entrepreneurship, although it is also remarked that most contributions focus on corporations based in the USA, while “few studies focus on European companies” (Urbano et al., 2022, p.1555). Therefore, we aim to contribute a perspective from the Swedish context on both corporate entrepreneurship and intrapreneurship in order to increase the cultural and country-specific context-based understanding of combining both conceptualizations of intrapreneurship and corporate entrepreneurship. This closes the gap of many studies in this research fields coming from for example other European countries, the USA or Asian countries and adds unique insights into corporate entrepreneurship and intrapreneurship in organizations from a previously not extensively researched context.

1.3 Purpose

The goal of this thesis is therefore to bring clarity to the terminology, to critically investigate if the current conceptualizations of entrepreneurship in organizations live up to corporate reality and to enrich the discourse in this field by taking a closer look at



the manifestation of corporate entrepreneurship in the context of overarching societal and ecological sustainability issues. We choose to work with the terms of intrapreneurship and corporate entrepreneurship, because these are widely recognized and because they combine different perspectives: Intrapreneurship mostly employs an individual, employee-level and bottom-up approach, while corporate entrepreneurship tends to encompass a more strategic, management-orientated and top-down point of view (Urbano et al., 2022; Perlina et al., 2022; Åmo, 2010). As the combination of these two approaches yields a more holistic, multilevel and integrated approach, it closes the gap of only employing one of these perspectives or only concentrating on one corporate level (Urbano et al., 2022) that calls for “far more research linking the two levels and concentrating on connecting the top-down CE and bottom-up intrapreneurship approaches” (Blanka, 2019, p.947).

Taking all these aspects into consideration, we aim at gaining a richer and more robust understanding of the matter by combining the insights generated from these different approaches and terminologies. The goal and contribution of this thesis unfolds in three aspects, according to the explained research gaps above: Bringing clarity and applicability to the terminology by combining the conceptualizations of intrapreneurship and corporate entrepreneurship, linking entrepreneurship in organizations to the overarching background of sustainability and adding new insights into intrapreneurship and corporate entrepreneurship in the Swedish context. In summary, the aim of this study is to investigate how intrapreneurship and corporate entrepreneurship contribute to understanding organizational sustainable development and what chances and limitations of intrapreneurship and corporate entrepreneurship can be discovered in the context of organizational sustainable development.

In consequence, we offer a theoretical and conceptual contribution to how corporate entrepreneurship and intrapreneurship can be defined and what characteristics are crucial for understanding the similarities and differences between both concepts. There, we focus especially on contributing conceptually by connecting both concepts with a sustainability context and by highlighting the interdependent nature of the relationship between corporate entrepreneurship and intrapreneurship. To do this, we also make an empirical contribution by exploring what aspects of intrapreneurship and corporate entrepreneurship can be found in the practices, processes and everyday operations of



organizations before a sustainability background. In a second step, these empirical contributions are also presented regarding the chances and limitations of understanding corporate entrepreneurship and intrapreneurship as mutually dependent on each other. These goals, contributions and purposes are reflected in the following research questions:

- 1) How can intrapreneurship and corporate entrepreneurship be defined and clarified against each other in the context of sustainability?
- 2) What are potentials and limitations of intrapreneurship and corporate entrepreneurship in the context of organizational sustainable development?

The basis for analyzing the empirical material is explained in the following chapter, where important theories, concepts, definitions and research results are presented. The content of this chapter incorporates topics that are crucial for the understanding of the matter, for example sustainability and sustainable development, entrepreneurship in general including entrepreneurship and context, entrepreneurship as process, the role of innovation and creativity in entrepreneurship and opportunity exploitation. Moreover, concepts such as sustainable entrepreneurship, intrapreneurship, corporate entrepreneurship and sustainable corporate entrepreneurship are synthesized. After that, the methodology chapter presents and explains the methodological choices and procedure of this thesis, followed by the themed presentation of the collected empirical data. In the analysis chapter, the empirical data is brought together with the theories and concepts from the theoretical framework to work towards the answering of the set-out research questions by developing an updated conceptual model for corporate intrapreneurship as a synthesis of the dependencies between corporate entrepreneurship and intrapreneurship in a sustainability context. Lastly, in the summary and conclusion, the main research findings are summarized, the research questions are answered and possible directions for future research are derived from the limitations of this study.

2. Theoretical framework and literature review

In this chapter, the most important definitions and the literature review are presented. While the definitions chapter aims to give an overview about the most important concepts that serve as a basis for understanding the research background and goals, the



literature review presents research that has been conducted in the thematic area of this thesis. The definitions chapter therefore includes intrapreneurship, corporate entrepreneurship, sustainability, sustainable development, sustainable entrepreneurship and sustainable corporate entrepreneurship. The literature review has the purpose to ground the whole thesis as well as especially the data collection methods, the analysis process and the conclusion in the overarching research context.

2.1 Theoretical framework

In this chapter, the basic definitions of concepts that are important to understand the topic are presented. In the chapters about intrapreneurship, corporate entrepreneurship, sustainability, sustainable development, sustainable entrepreneurship and sustainable corporate entrepreneurship the concepts are explained, defined and discussed.

2.1.1 Intrapreneurship

The formation and promotion of entrepreneurial activity and processes within large corporations is known as intrapreneurship (Nielsen et al., 2017). New opportunities that are developed or found within the current business which must be organized in this context are a result of this process. Even though intrapreneurship often differs from entrepreneurship since it takes place in an already existing, established business environment, the characteristics engaged are essentially the same. The key distinction between entrepreneurship and intrapreneurship is that the former is to be understood as an entrepreneurial process whereby an individual or group of individuals establishes a whole new company or organization that is independent of an already-existing company or organization.

Intrapreneurship, according to Thompson et al. (2005), occurs when individual managers market and sell their concepts inside a company and form a group of followers who will support the new input. Therefore, the term "intrapreneurship" refers to the establishment and promotion of entrepreneurial activity within major businesses, which leads to incremental enhancements to existing goods and services and, occasionally, the creation of entirely new goods.

Typical characteristics of an intrapreneur are similar to those of an entrepreneur and include strategic awareness, idea-drivenness, creativity, adaptability, innovation, good



networking skills, individualism with the ability to function effectively in a team, persistence, and bravery. Intrapreneurs promote change in an existing environment (Thompson et al., 2005). The authors further state that in case they are dissatisfied with the lack of independence, they will underperform or perhaps quit. The strategic leader's ambition, leadership style, values, and culture all have a significant impact on entrepreneurial activity, innovation, and growth, albeit these factors probably ought to be present throughout the firm.

Thompson et al. (2005) further claim that if the culture and organizational structure support and enable their contribution, managers within firms can provide a lot of fresh ideas for innovation, for new products or service advancements. But they will be limited by the context of the company (Nielsen et al., 2017). One approach is setting up special task forces and development groups. Another is giving individual managers the chance, independence, and resources to test out innovative concepts (Thompson et al., 2005). For Nielsen et al. (2017) new organizational units, a strategic reorientation, or innovations within the current organization could be the outcomes. Success requires that the organization is aware of market prospects, and further is customer oriented. Change in general also must be viewed more as an opportunity than a threat (Thompson et al., 2005).

2.1.2 Corporate entrepreneurship

During the past decades, corporate entrepreneurship has developed into a strategy that may support businesses' efforts to foster innovation and successfully navigate the competitive landscape of today's global markets (Kuratko et al., 2015). Strategic thinkers are now pioneering innovation in processes, value chains, business models, and all managerial activities, moving beyond the traditional product and service innovation (ibid.).

Urbano et al. (2022) in addition claim that corporate entrepreneurship is widely considered important for facilitating a firm's effort to exploit its current competitive advantages and explore new opportunities and the competencies required to pursue them successfully. Hence, according to the authors it is widely viewed as contributing to the evolution of a firm's corporate strategy (ibid.).



Brundin et al. (2008) states when managers express confidence in and happiness with an entrepreneurial behavior, employees are more likely to act entrepreneurially; conversely, when managers express dissatisfaction, fear, or confusion about an entrepreneurial project, employees are less likely to act entrepreneurially. Furthermore, the authors add that displays of happiness and frustration strengthen the positive association between managers' demonstrated confidence and employees' willingness, whereas those of fear and perplexity weaken it.

The goal of corporate entrepreneurship is to better align the organization with its external environment by taking advantage of environmental opportunities and avoiding environmental dangers (Kuratko & Audretsch, 2013). In addition, the authors state that reviving corporate innovation, creativity, and leadership is the main driver of corporate entrepreneurship. The essential elements required for the productivity of international organizations in the future may be found in corporate entrepreneurship (Kuratko & Audretsch, 2013).

2.1.3 Sustainability

Depending on the discipline and context in which it is used, the term "sustainability" can have multiple, interrelated meanings. However, the term's most fundamental meaning derives from the verb "sustain," which can be translated as "continue" or "keep going," as well as be interchanged with the words "durable" and "lasting" (Farley, H., & Smith, Z., 2020). Therefore, sustainability is entwined with resource management, where the decision of whether to preserve, advance, or enhance the environment must be made.

Due to the term's multi- and interdisciplinary nature, it can be used to refer to a variety of academic topics and disciplines, including the natural sciences, economics, and social sciences. To find solutions for biodiversity protection, Farley et al. (2020) consider sustainable environmental discussions concerning biology, forestry, and resource management. In addition, preserving biodiversity helps to maintain biological processes, ecosystems, human populations, and other populations. Farley et al. (2020) goes so far as to emphasize the value of conserving biodiversity, which may be thought of as a stock of natural capital, by pointing out that ecosystem services, which are necessary for economic growth and medical advancement, are supported and dependent on biodiversity.



Sustainability is a multifaceted system that must be considered from all three pillars of sustainability: environmental, economic, and social. The latter, referred to as social aspects, is concerned with several social sciences like sociology, psychology, and political science. Environmental global governance, policy, decision-making, education, and communication are essential components of healthy sustainable development, according to Farley et al. (2020). As a result, the social pillar is crucial for supporting sustainability and providing structure. The political sciences are concerned with human and national security policies for sustainable governance, environmental justice, and human rights. But sociology's goal is to delve further into cultural connections, interconnections, and sustainability-related barriers. The social side of psychology is used to further examine the constraints and effects that sustainability has on each person. The ignorance of individuals about sustainable living or behavior is one example of one of these hurdles.

The conventional economic system uses nonrenewable or in other words, “unsustainable” resources, further produces more trash than the environment can handle, and uses renewable resources more quickly than they can be replenished. According to theory, a sustainable system seeks to increase consumption while also meeting human needs, at whatever cost. In order to increase production and consumption, traditional economic development only advances linearly in one direction.

It requires a sort of system-thinking when sustainability is defined as the connectivity of environmental, social, and economic systems. If a sustainable act for instance, would exclusively be applied to one particular field without considering the next following impact, it is not beneficial and may even be detrimental. More specifically, Farley et al. (2020) refer to false sustainability and "green washing" when they ignore the effects of the different systems on one another.

2.1.4 Sustainable development

The idea of sustainable development has first been released in the Brundtland Commission report by the United Nations in 1987. At that time, it was focused on two concerns, the exploration of the interrelation of environment and development. It shall define a development that meets the need of the present generation without limiting the ability to meet the need of future generations (WCED, 1987).



However, today it is adapted to the triple bottom line of sustainability: environment, economic, and social (Stefańska, 2021) because the Brundtland definition did not meet and include the human needs and desires (Banerjee, 2007). Dhahri & Omri (2018) underline that the implementation of sustainable development requires to involve all parts of society, particularly the corporate world. One of today's main challenges is the conversion of society towards sustainable development solutions (Kyrö, 2014). Sustainable development according to Skivko (2022) is a dynamic process which requires innovative ideas and constantly new approaches and solutions, which as well require innovative, financial, human, and time resources. Due to the latter, it is more likely for bigger corporations than for small and medium sized companies (SMEs) to support sustainable development through implementing concepts such as Corporate Social Responsibility (CSR).

2.1.5 Sustainable entrepreneurship

Sustainable entrepreneurship adheres to the triple bottom line of economic, social, and ecological aims, in contrast to conventional entrepreneurship (Kyrö 2014). It aims to integrate and balance economic, social, and environmental goals in various contexts. Traditional entrepreneurship is one-dimensional and focuses solely on achieving financial objectives, such as generating profit for stakeholders. Contrarily, environmental and social entrepreneurship are two-dimensional and focus on achieving both economic and social goals, respectively economic and ecological goals. Since there is no agreed-upon definition for the term, some scholars define it as being part of or equal to social entrepreneurship, while others define it as being part of or equal to environmental entrepreneurship and/or eco-entrepreneurship (Kyrö 2014).

As was already established, sustainable entrepreneurship prioritizes social, ecological, and economic objectives. To clarify, environmental entrepreneurship does not target social goals, and neither does social entrepreneurship target environmental goals. Therefore, the terms cannot be interchanged to sustainable entrepreneurship.

2.1.6 Sustainable corporate entrepreneurship

Sustainable corporate entrepreneurship refers to the practice of using the creativity and innovation of a company's goods, processes, strategies, domain, or business models to uncover, appraise, and eventually exploit appealing economic opportunities caused by latent and manifest environmental challenges and or social responsibility concerns



(Miles et al., 2009). While sustainable entrepreneurship is also applicable to start-up businesses, sustainable corporate entrepreneurship develops within already existing companies (Provasnek et al., 2017). According to Miles et al. (2009) a company is considered to have adopted sustainable corporate entrepreneurship if it can demonstrate to have implemented all three sustainability pillars—responsible environmental management, social accountability, and long-term economic performance—as well as significant innovation in its domain, business model, processes, and other key areas. Managers must continually balance or trade off the components against one another because they are all equally important (ibid.). Miles et al. (2009) state that for several decades, corporate entrepreneurship has been seen as one method of fostering growth through the development of new goods, services, markets, or innovations. Recently, corporate social responsibility and sustainability have been frequently discussed in management discourse. Managers are becoming more actively involved in programs intended to use innovation to boost economic performance while addressing the challenges of ethical environmental management and social responsibility.

Provasnek et al. (2017) stress that adopting sustainable values and characteristics within organizations might be a pre-requisite strategy for leveraging sustainable innovations and assuming a new leadership role. Businesses that are genuinely committed to sustainability can benefit from both strategic and business opportunities. Furthermore, the authors also stress the significance of tackling sustainability challenges from various angles, such as within the business and internal processes, and through encouraging and utilizing sustainable technologies. Entrepreneurial businesses that are dedicated to sustainability can outperform businesses that are less likely to view sustainability as a critical issue for innovation. Less entrepreneurially minded businesses that are also less dedicated to sustainability have a lower chance of long-term survival (ibid.).

2.2 Literature Review

In the literature review chapter, the already existing research about corporate entrepreneurship and sustainability as well as intrapreneurship and sustainability is presented and discussed. This chapter is the foundation for positioning this thesis in the already existing body of knowledge in the research area.



2.2.1 Corporate entrepreneurship and sustainability

The literature on corporate entrepreneurship in connection to sustainability is diverse and follows different research perspectives, disciplines, methods and study goals. To better understand the development and contents of the more current research activities in this field, literature from 2016 and newer publications are examined. Starting with Provasnek et al. (2016) for example, their article aims at making conceptual contributions to an integrated perspective on elements supporting a sustainable corporate entrepreneurship process. Therefore, the authors seek to add to the understanding of sustainable corporate entrepreneurship in general. They employ two research questions evolving around what elements determine processes in sustainable corporate entrepreneurship, what aspects leverage corporate sustainability and sustainable innovations as well as how companies can be categorized relating to their performance in corporate sustainability and entrepreneurship. Methodologically, the article presents a review of the literature on corporate entrepreneurship and sustainable corporate development. On this basis, a position matrix and typology are developed. Finally, the authors highlight the usefulness of the created typology by using it to analyze the sustainability and entrepreneurship plans of the world's leading corporations. For this, they examine publicly available index ratings to evaluate the strategies for and the qualitative evaluation of the performance of eight top-ranked international firms in terms of innovation and sustainable development (Provasnek et al., 2016).

Based on the aspects of corporate sustainability and corporate entrepreneurship, the results define the sustainable corporate entrepreneurship process. The findings also take into account various performance levels and tactics for sustainability and innovation. The fundamental finding is that the process of sustainable corporate entrepreneurship is characterized by gradual adjustments to a number of factors, such as resources, context and concepts. Another contribution is raising questions about the existence of real sustainable corporate entrepreneurship without evolving corporate sustainability. The findings have implications for the corporate entrepreneurship process in relation to academic, management and policy aspects. The role of entrepreneurial and sustainability measures within sustainable corporate entrepreneurship processes and their influence on a range of company functions, such as the business context, concept, resources, or individuals, are highlighted. Internal corporate sustainability and external



sustainability innovations should be viewed by managers as interrelated functions rather than as separate developments. The authors argue that because entrepreneurial processes can be considered components of the creative destruction within businesses, strategies for sustainable corporate entrepreneurship are not always designed in a systematic manner. According to the paper, there are two ways that policymakers may support a sustainable corporate entrepreneurship process: by encouraging transformation processes within organizations toward sustainability and by making it easier for sustainable innovations to enter the market (ibid.).

Another research contribution by Gasbarro et al. (2017) develops these insights into the goal to contribute to a better understanding of how sustainable entrepreneurs deal with the regulative, normative, and cultural-cognitive institutional pillars when working in conservative environments. The study aims to thoroughly examine how sustainable innovation might be used to boost institutional legitimacy and bring about institutional transformation. These goals are aimed to be achieved by making use of an exploratory case study based on grounded theory on exemplary sustainable entrepreneurs that have successfully developed and applied sustainable innovation in a conservative context. A three-phase iterative approach is applied to examine how particular sustainable entrepreneurs have altered institutional norms, cultural norms, and regulatory structures to bring about a shift toward a more sustainable market. The data includes interviews and archive data, such as newspapers and magazines which were analyzed with content analysis. The research takes place in the clean energy sector in Italy (Gasbarro et al., 2017).

The study illustrates how sustainable institutional entrepreneurs cause institutional changes in order to push innovations applied to products, services, and technologies, demonstrating a clear relationship between business models and sustainable innovation. It was shown that pursuing a balance between social and private advantages is essential to establishing the legitimacy of sustainable innovation. In order to increase their legitimacy within the normative and cultural-cognitive institutions, and subsequently in the regulative institutions, sustainable institutional entrepreneurs have created innovative business models based on close relationships with their end customers and strategic partnerships. They do this by “innovative value propositions aimed at changing industry norms and social beliefs; increasing the private benefit of innovative



sustainable business models in order to trigger imitation dynamics; inter-sector strategic partnerships sharing the same sustainability objectives; the inclusion of the relevant actors in relation to the social norms and cultural-cognitive barriers in a value proposition” (ibid., p.476). The study demonstrates that sustainable institutional entrepreneurs implement sustainable institutional entrepreneurial practices as a means of legitimate sustainable innovation in a context where systemic institutional barriers prevent the implementation of disruptive technology because of a lack of institutional support and the existence of opposing parties. This first results in a change in the normative and cultural-cognitive institutions, and then in the regulative institutions (ibid.).

Youssef et al. (2018) add to these insights by applying corporate entrepreneurship for sustainable development in an African context. The authors follow the goal to advance our knowledge of the crucial roles that innovation, high institutional standards, and entrepreneurship play in structural transformation toward an African sustainable future. The study aims at examining how innovation and strong institutions are prerequisites for entrepreneurship to spur economic growth and further social and environmental objectives. Unlike the other two studies before, these goals are combined with a quantitative approach that builds a model based on an according to literature modified Environmental Kuznets Curve that describes a correlation between environmental quality and per capita income. This approach shows that, at a certain level of per capita income, environmental quality increases with an increase in per capita income during the early stages of economic development. The data consists of annual data from 2001 to 2014 from 17 African countries. The data is accessed through different databases like UNESCO, Global Entrepreneurship Monitor and World Development Indicators. The variables are for example CO₂ emissions, saving index and gross domestic product (Youssef et al., 2018).

Results indicate that both formal and informal entrepreneurship in African nations contribute to the degradation of the environment, with informal entrepreneurship making a larger contribution than formal entrepreneurship. High levels of innovation and high-caliber institutions substantially favor the relationship between entrepreneurship and sustainable development. In addition to highlighting the crucial roles played by innovation and institutions in achieving sustainability in Africa, this study illustrates the circumstances under which African nations might transition toward more sustainable



economies. The study investigates the circumstances in which entrepreneurship in Africa can promote social and environmental goals while also fostering economic growth. More specifically, the authors contribute to comprehend the important and crucial roles that institutions, innovation, and entrepreneurship play in helping Africa move toward a sustainable future. The study's findings, which have significant policy ramifications for trade, technology development, and financial regulations, suggest that encouraging innovation and entrepreneurs to adopt new technologies should increase the sustainability of African economies (ibid.).

Another quantitative contribution to the field is made by Niemann et al. (2019), who focus on how corporate entrepreneurship (in terms of organizational preparedness for corporate entrepreneurship) and environmental orientation interact to affect performance. The study specifically examines whether various forms of environmental orientation have different performance effects when combined with corporate entrepreneurship because the research indicates that environmental orientation has a variety of effects that come from both internal and external sources. Therefore, research questions encompass to what extent organizational preparedness for corporate entrepreneurship influences the environmental and financial performance of clean-tech firms and how internal and external orientations affect the organizational preparedness for corporate entrepreneurship's effects on environmental and financial performance. The data sample for the study was collected from organizations in the clean-tech sectors of Germany and Denmark. Companies were identified via online databases of that business area which resulted in 104 answered standardized questionnaires. Variables include for example environmental performance and financial performance. The variables and their relations were analyzed with regression analysis (Niemann et al., 2019).

According to the authors, corporate entrepreneurship readiness within a business has a favorable impact on both financial and environmental performance. The internal environmental orientation's leverage, on the other hand, is not as effective. According to the research, organizations that are more strongly influenced by internal environmental orientation than by external environmental orientation experience a diminished impact of organizational preparedness for corporate entrepreneurship on financial performance. According to the study's findings, organizations that are largely focused on internal environmental issues gain less from the beneficial benefits of organizational



readiness on corporate entrepreneurship and financial success. As a result, the grade of environmental orientation must be taken into account when integrating corporate entrepreneurship and sustainability initiatives (ibid.).

These two more quantitatively focused articles by Niemann et al. (2019) and Youssef et al. (2018) are complemented by two contributions that concentrate on conceptual frameworks and literature synthetization by Brandi & Thomassen (2020) and by Ren & Jackson (2020). Brandi & Thomassen (2020) for instance explore how to implement sustainability practices in businesses using information from organizational learning and corporate entrepreneurship theories as tools for thought to develop a conceptual model. The major goal of the study is to develop a conceptual framework that addresses one of the most pressing issues facing modern organizations: how to educate employees about sustainability and incorporate it into daily operations. The overarching study issue revolves around how corporate entrepreneurship and organizational learning might support and enable sustainability practices in firms (Brandi & Thomassen, 2020).

The paper develops and provides a multilevel, four-phase conceptual model for the examination and development of sustainable practices, drawing on elements from corporate entrepreneurship and organizational learning. Continual feedback and feedforward loops on an individual, group, organizational, and societal level are key components of organizational learning that contribute to the development of sustainable practices in organizations. Corporate entrepreneurship highlights the significance of obtaining sustainability in all stages of the change process by prompting crucial processes and tangible working elements. The writers claim that in order to effectively comprehend and create change with sustainability as the goal, understanding and characterizing the organizational learning and corporate entrepreneurship processes are essential. In order to secure the implementation of sustainable practices in firms, this transition necessitates a strategic refocus and priority of organizational learning and corporate entrepreneurship theories and practice suggestions (ibid.).

Similarly, Ren & Jackson (2020) combine literature on institutional entrepreneurship and Human Resource management (HRM) philosophy to build a framework for the role of HRM as institutional entrepreneurs promoting sustainability. This is introduced as new conceptual approach as “HRM institutional entrepreneurship to examine the



paradoxes and emerging opportunities associated with the urgent need for more sustainable approaches for managing business organizations” (Ren & Jackson, p.1). With this framework, the term HRM institutional entrepreneurship for leveraging sustainability in and around organizations is introduced.

The article finds that the difficulties in enhancing the sustainability of corporate organizations are significant, necessitating proactive and agentic HRM professionals who go beyond the function of the typical change agent and adopt the role of HRM institutional entrepreneur. The study underlines the necessity for transformation at the organizational level in order to institutionalize the paradoxical logics connected to sustainable development. The employment of HRM systems as tools for fostering such institutional change is implied by HRM scholarship. Through their interactions with CEOs, middle managers, and all other employees, HRM experts can influence organizational members' knowledge, decision-making, and actions in their capacity as institutional entrepreneurs. They can work together with a wide range of external stakeholders through boundary-spanning activities to influence the institutional logics of the larger context in which their organization is embedded (ibid.).

These more conceptual and literature-based findings that developed on prior quantitative findings are then completed by three more current research contributions that embrace different approaches of applying qualitative approaches (Schönwälder & Weber, 2022; Hübel, 2022) and of reviewing the literature published to date in this field (Lu et al., 2022). Schönwälder & Weber (2022) explore how corporations link sustainability and venture departments in order to provide insight into how established businesses apply sustainable corporate entrepreneurship practices. They primarily ask about to what extent incumbent firms employ cross-functional collaboration between sustainability departments and corporate ventures to facilitate sustainable corporate entrepreneurship. This research goal is completed by exploring the different modes of sustainable corporate entrepreneurship in business practice and by investigating the influence of the general corporate entrepreneurship mode on the company’s application of sustainable corporate entrepreneurship. For this reason, the study establishes five SCE maturity levels with increasing cross-functional collaboration: Non-Existent, Occasional, Expert, Collaboration, and Strategic Collaboration. The results are derived from qualitative interviews with 14 experts from 12 multinational organizations with



headquarters in Germany. The authors discover preliminary support for the collaboration patterns in an international environment using secondary interview data from seven multinational corporations with headquarters outside of Germany (Schönwälder & Weber, 2022).

The findings of the article show that a company's overall innovation strategy is related to the maturity level of its sustainable corporate entrepreneurship actualization: businesses with specialized entrepreneurship units are more likely to have a higher level of concentration on sustainable corporate entrepreneurship. Additionally, it appears that when venture specialists and sustainability managers work together, the likelihood of developing radical innovations for sustainability improves, which in turn enhances the potential of starting sustainability transitions. When corporate venture experts and sustainability managers work together, the likelihood of developing effective radical innovations for sustainability seems to rise. Radical innovation is also more likely in organizations that support cross-functional cooperation (ibid.).

Hübel (2022) adds to these results by employing a sensemaking theoretical lens in order to examine the process of entrepreneurship-driven organizational transformation towards sustainability. For this purpose, an in-depth case study of a large European meat company over a timeframe of 18 months is conducted, where sensemaking processes for and of sustainability and entrepreneurship of top and middle managers are analyzed. Data is analyzed with consequential or outcome analysis with data coding and categorizations. Data was collected with semi-structured interviews, ethnographic interviews, participant observation and documents (Hübel, 2022).

The article's results suggest that top and middle managers' explicit and shared sensemaking about structural and cognitive aspects can align managers' diverging "sensemaking paths" and aid in managing and accelerating organizational transformation for sustainability. They also suggest that a processual accumulation of meaning allows for overarching, integrative claims that balance the old and the new. The findings of the study underline the importance of early formalization of shared sensemaking in sustainability-oriented change, which goes beyond individual sensemaking by a small number of organizational change agents. Reflections on new sustainability standards, disembedding from traditional routines, and support for transformation can be fostered



by involving important middle managers early on and taking into account their diverse experiences and attitudes (ibid.).

The literature until 2022 is then reviewed and synthesized by Lu et al. (2022), who aim to explain different concepts and develop a conceptual framework of corporate entrepreneurship sustainability. The authors aim for a deeper and more thorough understanding of the ecological side of corporate entrepreneurial sustainability. The authors' goal is to examine the most important aspects in previous sustainable corporate ecological entrepreneurship literature. Additionally, the paper explores whether the concept of ecological sustainability can be considered in corporate-level entrepreneurial decisions and what theories build the basis for the field of sustainable corporate ecological entrepreneurship. Moreover, the article aims to analyze whether a conceptual framework in this thematic area can be constructed and what possible novel research directions can be discovered around corporate ecological entrepreneurship. To conduct the semi-systematic literature review of 53 selected papers, literature was obtained from Google Scholar and citations were checked to account for trustworthiness and transparency. The literature search was conducted with special key words in single use and in different combinations and only peer-reviewed articles in English were included (Lu et al., 2022).

The paper offers suggestions for incorporating ecological considerations into corporate policies and philosophy in order to create a green company that strikes a balance between commercial prospects and environmental commitments. The study introduces a new concept of sustainable corporate ecological entrepreneurship. By merging many dispersed concepts from diverse fields, the authors establish a thorough framework for sustainable corporate ecological entrepreneurship. The paper highlights the key ideas associated with the emerging idea of sustainable corporate ecological entrepreneurship, including for example green economy, business environment turbulence and sustainable supply chain management among others. The study also analyzes and categorizes the pull and push elements that determine sustainable corporate ecological entrepreneurship. Additionally, it outlines the procedures for implementation as well as the outcomes of sustainable corporate ecological entrepreneurship at the company and macro levels. The study also compares the ecological entrepreneurship strategies used by small and large businesses (ibid.).



2.2.2 Intrapreneurship and sustainability

While researching literature for the literature review on intrapreneurship in combination with sustainability it crystalized that as of today literature is very limited. The few research papers that have been found upon this topic are analyzed in the following.

Starting with the article by Huang et al. (2021), where the authors of this paper want to contribute to the research field with a holistic intrapreneurial framework to identify enablers and significant facilitating mechanisms to improve intrapreneurship.

The study specifically looks at intrapreneurship in relation to other popular concepts (such as entrepreneurship, sustainability and innovation). The study then finds factors that support intrapreneurship at the organizational and individual levels. Overall, the paper aims to help organizations develop a better understanding of intrapreneurship and provide guidance for cultivating it successfully.

To achieve this, the authors conducted a review of the literature on intrapreneurship and identified key factors that influence its development. They then used these factors to develop a framework for cultivating intrapreneurship within organizations (Huang et al. 2021).

The authors come to the conclusion that growing interest is attributed to two significant benefits that intrapreneurship may have to offer: (1) intrapreneurship as a strategy to achieve innovations and business sustainability; and (2) intrapreneurship as a tenet directing organizations to adjust to environmental changes and improve their performance (ibid.).

Intrapreneurship alters how companies approach sustainability and innovations, having an impact on both the companies and the workforce. Because of intrapreneurship, businesses have opportunities that, according to the authors, are more successful than start-ups. However, it also brings difficulties for them. In the context of corporate management, the study demonstrates how intrapreneurship connects to other important theoretical ideas including entrepreneurship, innovation, and sustainability. The paper identifies several challenges to implementing intrapreneurship, such as resistance to change and risk aversion. The authors provide recommendations for overcoming these challenges, including providing training and development opportunities for employees and creating a culture of experimentation.



The study also suggests a conceptual framework on which businesses might foster intrapreneurship. This framework includes both enablers (on the human and organizational levels) and facilitating mechanisms (ibid.).

By examining intrapreneurship via several theoretical lenses of innovation, entrepreneurship, and sustainability, this study adds to the body of existing literature. The discussion paves the way for the development of an intrapreneurial framework with theoretical constraints in light of these new business activities. The authors emphasize the significance of fostering an intrapreneur-friendly company culture and giving intrapreneurs the tools and support they require to be successful. Organizations can use intrapreneurship to boost their competitiveness and growth by putting the principles and suggestions from this article into practice. The study is also a trailblazing attempt to provide a comprehensive perspective that takes into account critical facilitators at the organizational and human levels as well as support systems for intrapreneurship (ibid.).

With another study by Criado-Gomis et al. (2018), a contingent model for the relationship between performance and sustainable entrepreneurial attitude is put forth. A sustainable entrepreneurial approach and the effects of entrepreneurial activities carried out within the business incorporate the effects of intrapreneurship on business performance. The authors want to know if the effects on business performance, that other researchers have already demonstrated without taking sustainability into account, are confirmed when strategic sustainability is included in intrapreneurial companies.

Methodologically a multi-sector questionnaire that was personally distributed in businesses in Valencia, Spain served as the research design for this study. The data analysis was used to analyze structural equations based on variance (Criado-Gomis et al. 2018).

The research gives perspectives on how sustainable entrepreneurial orientation (SEO) and entrepreneurial activities affect the growth of businesses. On the one hand, the SEO construct's validation demonstrates how sustainability, as a component of the overall strategic orientation, encourages the inclusion of economic, social, and environmental aspects as relevant assets at the corporate culture level. As a result, sustainability starts to play a significant role in a company's ability to adapt to its surroundings. The authors found that sustainable entrepreneurial orientation positively affects



business performance. Specifically, they found that the more a firm adopts a sustainable entrepreneurial orientation, the better its business performance. The authors also found that intrapreneurial orientation has a positive effect on both sustainable entrepreneurial orientation and green innovation. In order to show how SEO is related to business performance, this research specifically offers SEO as a superior order strategic orientation constructed from a multiple strategic orientation perspective (ibid.).

The use of SEO as a strategy pillar has important managerial implications for companies. The findings support entrepreneurship and sustainability to have a similar status in order to improve performance. The study also found that the relationship between sustainable entrepreneurial orientation and business performance is stronger for firms with high levels of intrapreneurial orientation. This finding suggests that intrapreneurial orientation can enhance the positive effects of sustainable entrepreneurial orientation on business performance. With a SEO, businesses are more likely to adopt proactive, innovative, and risk-taking practices that prioritize economic, social, and environmental issues equally. Managers can therefore improve their market performance and profitability while still living up to the existing standards for their commitment to sustainability. Thus, one of the key components in creating a competitive edge is their corporate culture. Several studies emphasize that intrapreneurship and sustainability are still developing in firms. The need of promoting intrapreneurship from a sustainable perspective is highlighted by this (ibid.).

Overall, the results of this study indicate that an intrapreneurial orientation can strengthen the positive impacts of a sustainable entrepreneurial orientation on business performance. The study emphasizes the significance of green innovation as a means by which a sustainable entrepreneurial mindset can affect the success of a company (ibid.).

Another contribution comes by Widya Hastuti et al. (2016) who did their research with the focus on the role of intrapreneurship for sustainable innovation in SMEs. In order to achieve sustainable innovation through process innovation in SMEs, this study explores the function of intrapreneurship and develops it into an integrated framework. The concept demonstrates how intrapreneurship's proactiveness, risk-taking, and autonomy operate as a lever for social, environmental, and economic innovation that is



sustainable. The study also recommends conducting empirical research at companies for future studies.

In order to identify prior research and the lack of approaches in sustainability, a critical literature review on intrapreneurship that is pertinent to strategic management and sustainability journals was conducted. This review focused particularly on the capability approach of dynamic capabilities. In addition, 3 propositions were formulated by Widya Hastuti et al. (2016):

- 1) There is a positive association between intrapreneurship and process innovation.
- 2) There is a positive association between process innovation and sustainable innovation.
- 3) There is a positive impact of intrapreneurship to the sustainable innovation through process innovation.

Widya Hastuti et al. (2016) sum up that the antecedents of intrapreneurship and process innovation in SMEs include organizational culture, leadership, resources, and external factors such as government policies and industry trends. The process of intrapreneurship and process innovation in SMEs includes ideation, evaluation, development, implementation, and commercialization. The outcomes of intrapreneurship and process innovation in SMEs include improved efficiency, competitiveness, profitability, and sustainability. The main outcome of the paper is the conceptual framework that the authors propose, which illustrates how intrapreneurship can contribute to sustainable innovation through process innovation in SMEs. The framework consists of three main components: intrapreneurial orientation, process innovation, and sustainable innovation. The authors argue that SMEs can use intrapreneurship to drive process innovation, which can, in turn, lead to sustainable innovation by improving efficiency, reducing waste, and enhancing environmental performance.

The paper also provides practical implications of the framework for SMEs, suggesting that SMEs can use intrapreneurial activities to foster process innovation and improve their environmental performance. Businesses must adapt to the changing business environment in order to remain viable despite confronting competitors. Due to the necessity for process innovation, businesses must adapt their internal capability by arranging resources into process routines. The conceptual framework might also make



clear how well process improvement captures values for successful sustainable innovation. In other words, this study provides yet another perspective on how to enhance firm-specific competencies to support sustainable development, particularly in SMEs (ibid.).

Another study by Gluch and Månsson's (2021) has the objective to advance our knowledge of environmental managers' contributions to sustainability promotion and to offer advice to businesses wanting to implement more environmentally friendly practices and policies.

The methodology used in the paper is qualitative and primarily based on a single case study of a large Swedish manufacturing company. It combines primary data from interviews with a case study approach and a review of the existing literature to develop a conceptual framework and draw conclusions about the role of environmental managers in promoting sustainability. The authors conducted in-depth semi-structured interviews with key stakeholders, including the environmental manager, other managers, and employees (ibid.).

The study emphasizes how crucial environmental managers may be in advancing sustainability programs and how sustainability is becoming increasingly important for organizations. In general, the paper's goal is to emphasize the major impact that environmental managers can have on the development of sustainability and to offer solutions for how they might act as institutional entrepreneurs to bring about change within their enterprises (ibid.).

The study presents a conceptual framework that identifies the key factors that enable environmental managers to act as institutional entrepreneurs. These factors include environmental management systems, organizational culture, leadership support, and networking opportunities.

Similar to this, Aparicio et al. (2020) in their paper aim to explore on how entrepreneurship and intrapreneurship may contribute to economic, social and sustainable development and to highlight opportunities and challenges for further research in this field. The authors present a research agenda in order to address those issues. This agenda includes exploring the role of training and education, examining the potential of new technologies, and creating new efficient policies and programs in order to support entrepreneurship and intrapreneurship.



For this, the authors reviewed earlier research on entrepreneurship, intrapreneurship, together with economic, social and sustainable development.

The important topics, opportunities, and challenges regarding entrepreneurship and intrapreneurship in these fields were generally identified by the authors after they synthesized and analyzed the relevant material. The authors also suggest a study agenda to direct ongoing investigations in this area (ibid.).

In exploring the connections between entrepreneurship, intrapreneurship, and sustainable development, the study makes evident that these ideas are linked and can support one another. Access to capital, governmental restrictions, and cultural considerations are only a few of the major difficulties that entrepreneurs and intrapreneurs operating in social and sustainable development contexts must overcome. The authors provide a study agenda for the future, emphasizing the demand for more systematic and comparative studies of entrepreneurship and intrapreneurship in a variety of cultural, social, and economic contexts (ibid.).

The study also addresses how social and environmental entrepreneurship may support sustainable development, highlighting how these strategies can generate both social and environmental benefits while also adding economic value. The authors underline the importance of encouraging and fostering social and environmental entrepreneurs, especially in developing nations where these players can be crucial in promoting both social and economic growth.

The paper provides a profound analysis of the current research on entrepreneurship, intrapreneurship, and sustainable development overall, and further suggestions for a roadmap for further research in this area are given. It provides valuable insights and recommendations for researchers, policymakers, and practitioners interested in promoting sustainable development through entrepreneurship and intrapreneurship (ibid.).

Berzin et al. (2016) make another contribution to this topic by examining the concept of intrapreneurship and its potential to foster innovation and sustainability inside human service organizations. These elements include organizational culture, leadership, support systems, and the makeup of the human service sector. The article looks at how leadership may promote an intrapreneurship culture and how businesses can establish an environment that supports and promotes intrapreneurial initiatives.



A review of the literature and 23 semi-structured interviews with top leaders from various human services organizations were conducted for this. To support it they formulated the following questions (ibid.):

- 1) What social innovation work have they undertaken at their agency?
- 2) What motivated their engagement in social innovation?
- 3) What was unique about social innovation work when using a market-based or enterprise model?
- 4) How did their social innovation work connect to organizational sustainability?

The study found that intrapreneurship is an important factor in promoting innovation and sustainability within human service organizations. The development of new programs, services, and business models were the most common types of innovation resulting from intrapreneurial efforts. The presence of a supportive organizational culture, leadership support, and flexible organizational structure were important facilitators of intrapreneurship. External factors such as funding and regulatory constraints could hinder intrapreneurial efforts. The study identified several strategies that could promote intrapreneurship, including creating a culture of innovation, providing leadership support, and fostering collaboration across departments. Intrapreneurship required a balance between risk-taking and the need for stable and reliable services. Intrapreneurial efforts could lead to improved client outcomes, increased revenue, and enhanced organizational reputation. The study underlines the importance of supporting intrapreneurial activities inside human service organizations and focuses on how intrapreneurship can drive innovation and sustainability in these organizations (ibid.).

Pellegrini et al.'s (2019) study intends to investigate how networks and sustainable intrapreneurship contribute to the adoption of sustainable innovation. It specifically aims to understand how networks and intrapreneurship can work together to promote the creation and adoption of sustainable innovation in businesses. The theoretical framework presented in this research emphasizes the value of networks and intrapreneurship in fostering sustainability. It talks about the difficulties and possibilities brought on by these ideas. The potential advantages of sustainable innovation are also covered in the report, including higher social and environmental performance, im-



proved reputation, and increased competitiveness. Finally, the authors provide recommendations for organizations looking to promote sustainable innovation through networks and intrapreneurship, emphasizing the need for leadership commitment, employee engagement, and a supportive organizational culture.

The paper employs a systematic literature review to analyze existing research and findings of a case study on networks and intrapreneurship in the context of sustainable innovation. The authors use a thematic analysis approach to synthesize the findings and develop a theoretical framework. The following research questions were raised (ibid.):

1. Can sustainable intrapreneurship play a role in driving the adoption of SI?
2. If yes, how can sustainable intrapreneurship relate to other drivers in leading companies to adopt SI?
3. Can these interactions influence the level of adoption of SI?

The study identifies networks and sustainable intrapreneurship as interactive forces that can encourage the adoption of sustainable innovation. The authors claim that by linking people and organizations with different expertise and resources, networks might facilitate the diffusion of sustainable innovation. They suggest that intrapreneurship can offer the entrepreneurial spirit and competencies required to drive sustainability projects within organizations. The study also emphasizes how crucial it is for leaders to be committed to fostering sustainable innovation, as well as how important employee engagement and a positive organizational culture are.

According to the authors, organizations can get a variety of advantages through sustainable innovation, such as enhanced reputation, increased competitiveness, and better environmental and social performance (ibid.).

The study concludes with recommendations for companies looking to capitalize on these factors and a theoretical framework for comprehending the function of networks and intrapreneurship in fostering sustainable innovation. However, they also point out that there are challenges in putting sustainable innovation into practice, including unwillingness to adapt, and a lack of resources, knowledge, as well as experience. Ac-



According to the authors, businesses may encourage sustainable innovation through interacting with stakeholder networks, establishing a sustainability culture, and providing opportunities for intrapreneurship. The study adds to the body of literature by combining previous studies on networks and intrapreneurship in the context of sustainability, emphasizing the need for additional empirical studies to clarify the practical implications of these ideas (Pellegrini et al. 2019).

2.3 Literature summary and conceptual model

Based on the literature reviews by Perlina et al. (2022) and by Blanka (2019) for the concept of intrapreneurship as well as literature reviews by Urbano et al. (2022) and Pirhadi & Feyzbakhsh (2021) for the concept of corporate entrepreneurship, a summary table of the literature review and a conceptual model is developed by the authors of this study. The table and conceptual model serve as a basis for case company identification and for the development of the topics and question areas for the semi-structured interviews. They show dimensions and notions of both concepts separate from one another as well as areas where overlappings and similarities in the two concepts can be observed. Moreover, according to Blanka (2019), it is important to keep in mind that there are numerous ways in which intrapreneurship and corporate entrepreneurship mutually result in and depend on each other because corporate entrepreneurship and intrapreneurship are closely linked in a way that both are determining factors for each other in order to establish and enable entrepreneurship in organizations in general. For example, in the cases of the characteristics of innovation and human capital, a combination of managerial top-down and individual bottom-up approaches can often be observed, bridging and connecting intrapreneurship and corporate entrepreneurship as two sides of the same coin (Blanka, 2019)



2.3.1 Conceptual model

The conceptual model shows figuratively how intrapreneurship and corporate entrepreneurship are dynamically connected and in relation to different organizational dimensions as well as to the organizational sustainability context. Hence, the relationship between corporate entrepreneurship and intrapreneurship is shown as a mutual connection between leading management and individual employees. On a more general level, this relation between these two concepts is shown between leadership, organizational culture and management as well as individual traits, attitudes, values and behaviors. In the surrounding fields, the conceptual model shows how external influences like industry, society, government and economic issues have an effect on how entrepreneurship within organizations is formed. The overarching sustainability context we placed our thesis in is highlighted in the outer layer of the model.



Figure 1: Conceptual model



2.3.2 Literature review summary table

The table accumulates definitions of intrapreneurship and corporate entrepreneurship, and it breaks both concepts down into smaller, observable and practically relevant aspects by categorization. The table reflects the current status of the literature regarding the definition of corporate entrepreneurship and intrapreneurship. It serves as the basis for the interview guide (see Appendix) and for the analysis.

	Intrapreneurship	Overlappings	Corporate entrepreneurship
Definitions	<ul style="list-style-type: none"> - members of a company identify and exploit ideas for their company by doing new things - bottom-up approach, individual level - employee who recognizes opportunities and develops innovations from within an existing hierarchy 	<ul style="list-style-type: none"> - idea and opportunity exploitation or entrepreneurial activity within an already existing organization - aims at innovation and general improvement of the organization 	<ul style="list-style-type: none"> - creation of new businesses within established companies - top-down approach, management level - initiation of renewal, change, innovation within an organization - formal or informal activities aiming at innovation in product, processes, and development - corporate venture capital, strategic renewal
Leadership and management issues	<ul style="list-style-type: none"> - trusting relationship between employee and manager - transformational and authentic leadership - communication of organizational strategies to employees - support of knowledge sharing and joint idea generation 	<ul style="list-style-type: none"> - managers encourage entrepreneurship, motivate employees and champion ideas to top management - managers identify, acquire and deploy necessary resources to pursue entrepreneurial opportunities - rewards and recognition for entrepreneurship activities - culture that fosters individual and organizational traits necessary for entrepreneurship - culture of trial and error, innovative mindset, experimenting and continuous improvement 	<ul style="list-style-type: none"> - managers being involved in corporate venturing and strategic renewal forms - participatory, risk-taking, and proactive management style - time for employees to follow personal ideas - unidirectional and joint work of departments and hierarchical levels to develop entrepreneurial behaviour - entrepreneurial leadership
Organizational environment and industry issues	<ul style="list-style-type: none"> - creative, technological and general business areas - business-to-business opportunities - knowledge-intensive organizations 	<ul style="list-style-type: none"> - dynamic market and environment - technological change and opportunities - industry growth, demand for new products 	<ul style="list-style-type: none"> - heterogeneity and complexity - competitive intensity and hostility - environment with intensive challenges



<p>Individual traits, attitudes, values and behaviors</p>	<ul style="list-style-type: none"> - competitive and persistent, out-of-the-box thinking, growth-orientated, extraversion, altruism, optimism, brokering and championing competencies - combination of thinker, doer, planner, and worker, bootlegging behavior, linking vision and action - possess general human capital and potential knowledge, personal network, and social capital 	<ul style="list-style-type: none"> - ability of opportunity recognition, pursuit and exploitation, entrepreneurial and professional experience - proactiveness, initiative- and risk-taking, creativity, self-efficacy, autonomy, freedom and ownership of decision-making, self-confidence, innovative, open for change, ambitious, motivated, achievement orientation - committed to job and organization, apply knowledge and skills across organizational boundaries 	<ul style="list-style-type: none"> - high education, high cognitive and metacognitive intelligence - individuals having autonomy, budget, and time to follow their own business ideas - organization bears failures - taking control and responsibility
<p>Organizational traits and structures</p>	<ul style="list-style-type: none"> - management processes allow autonomy - organizational structure aims for autonomy and commitment of employees in decision-making - low organizational participation, employees contributing mainly to processes - broadly defined jobs 	<ul style="list-style-type: none"> - high investments in research and development - entrepreneurship education and training - reduced hierarchy and bureaucracy - high horizontal and diagonal interaction and participation, composition of teams is multicultural and diverse 	<ul style="list-style-type: none"> - organization is growth based, dynamic, flexible, risk-accepting and acknowledging uncertainties - resource availability and accessibility, corporate venturing units, decentralization through delegation of authority - innovative and competitive aggressiveness, agile reaction to market changes, unconventional competition methods
<p>Outcomes and purposes</p>	<ul style="list-style-type: none"> - generation of jobs, growth of smaller companies - empowerment of employees in developing traits that foster intrapreneurship 	<ul style="list-style-type: none"> - innovation and value generation, opportunity recognition and exploitation - ensure organizational survival and renewal, improve growth, survival, performance - adapt to fast changing and hostile environments and businesses, creation of new companies and new revenue streams 	<ul style="list-style-type: none"> - improve organizational competitiveness, proactiveness and risk taking, generation of new resource combinations - improve acquisition and revitalization of knowledge, improve organizational learning - reach strategic and financial goals, integration of a company's operations, standard setting and product promotion - process and service innovations - strategic renewal, sustained regeneration, domain redefinition, organizational rejuvenation: achieve organizational superiority over competitors through internal change

Figure 2: Literature summary table



3. Methodology

In this chapter, the methodological choices for the thesis are discussed and connected to our overall research aim and research questions. We provide details about the applied research philosophy, the chosen research design and purpose, the research approach, the practical ways of data collection and analysis, the scientific credibility and quality of our data as well as the ethical considerations that play an important part for this thesis.

3.1 Research philosophy

A researcher's set of views, beliefs, assumptions, and values that influence their method of conducting research are referred to as their "research philosophy." (Saunders et al. 2019). Bell et al. (2019) contend that these assumptions influence the study process and that researchers should carefully analyze them. According to Saunders et al. (2019) there are three fundamental tenets of research philosophy which they discuss in their book: Ontological, epistemological, and axiological assumptions.

The nature of reality and what may be learned about it are topics covered by ontological assumptions. Whereas interpretivists believe that reality is created via human interaction and experience, positivists believe that there is an objective reality that exists apart from human perception (Saunders et al. (2019) & Bell et al. (2019)). Epistemological assumptions concern how knowledge is obtained and what knowledge is considered to be genuine. Whereas interpretivists believe that knowledge is subjective and context-dependent and is acquired through interpretation and understanding, positivists believe that knowledge is earned through objective, empirical observation and testing (Saunders et al. (2019) & Bell et al. (2019)). Axiological assumptions address the role of values in research. While interpretivists accept the influence of values on research and the significance of reflexivity, positivists believe that research should be value-free and impartial (Saunders et al. 2019). Overall, these assumptions have an impact on the researcher's approach of conducting the research, which includes the research topic, the methods employed, and the results being interpreted. It is critical for researchers to be aware of these assumptions and to take into account how they might affect the methodology and results of their studies.



According to Saunders et al. (2019) there are five primary research philosophies: positivism, critical realism, interpretivism, postmodernism, and pragmatism. For researchers, deciding on a research philosophy is crucial since it affects the entire study process. When choosing a research philosophy, researchers should carefully assess their own views and assumptions, their research question, and the type of data they aim to collect (Saunders et al. 2019). Bell et al. (2019) underlines that the assumptions shape the research process and should be explicitly acknowledged by researchers. Apart from the already presented interpretivism philosophy, pragmatism also plays an important role for this thesis. The emphasis of pragmatism is on the usefulness of the study findings and their practical application. Real-world issues are addressed, and useful solutions are produced, frequently employing mixed methods approaches (ibid.).

Since we in our thesis undergo a qualitative approach, we are not considering quantitative facts, such as concrete numbers, but rather aim to reproduce the reality in practice in this study. Therefore, we as authors of this thesis consider ourselves as subjective interpretivists and we follow an interpretivism research philosophy. With conducting qualitative interviews, we interact with persons who offer first-hand experiences, individual opinions and personal insights that we interpret according to our research aim, research questions and prior literature. This in turn leads to a better understanding and knowledge transfer. With this in mind, we are able to build up on our theory of “Corporate Intrapreneurship”. Moreover, to some extent the findings of our thesis are giving the reader pragmatic thought-provoking impulses and at the best some valuable solutions for the “real” corporate world. Organizations and researchers that take an active interest in entrepreneurship within organizations in a sustainability context are made aware of the theoretical and practical implications of the dependent relationship between corporate entrepreneurship and intrapreneurship. Therefore, we also adopt some aspects of pragmatism in our thesis, while interpretivism is our main philosophy lens.

3.2 Research design and research purpose

Here, the research design and research purpose is presented in relation to the research goals and research questions that were presented in the introduction of this thesis. This chapter argues for an abductive way of reasoning and an exploratory research approach



to be suitable for the study's aim being located in the specific research tradition in entrepreneurship studies.

3.2.1 Abductive reasoning

Deductive, inductive, and abductive are the most prevalent research designs according to Saunders et al. (2016) and Bell et al. (2022). The application of theory affects a study's methodology, including whether it is focused on developing or testing hypotheses. The selected research approach is also greatly influenced by the investigation's goal or purpose. The three methodologies are in that sense utilized for various goals. While deductive reasoning is applied mostly within the natural sciences, because it generates theory which is then to be empirically tested, the inductive method is mostly used in social sciences, as it draws on empirical material to generate theory (Saunders et al, 2016; Bell et al., 2022). Abductive reasoning is commonly used in management and business administration research, and it combines features of both inductive and deductive methods. New data is gathered through abductive research, which is then compared to hypotheses already in existence. Hence, the abductive method can validate information by supporting it with hypotheses and it is employed to develop new ideas or to alter current hypotheses. With this method, information is gathered to investigate phenomena and discover or explain themes and patterns. Often a conceptual framework or model is developed which is then combined and enhanced with the new ideas coming from the empirical evidence. In this case, both previously acquired theory and newly discovered data are employed to generate new insights into a specific topic and to enhance already existing research findings. The abductive approach also includes adding theory after collecting the empirical data in order to have all suitable theories for analysis at hand. This is also done in this thesis (ibid.).

As explained in the previous chapters and especially in the introduction, the chosen research topic is one that has not been studied before in this constellation. The combination of bottom-up and top-down approaches consisting of intrapreneurship and corporate entrepreneurship, the connection of these to the sustainability context and the contribution of a Swedish perspective in this research field are the main novel aspects of this study. Because of this threefold new approaches to existing gaps in the current research with an at the same time existence of contributions from numerous disciplines, an abductive approach can be deemed to be the most suitable for our research



purpose in this study. The reason for this is because abductive reasoning draws conclusions that are tested based on known premises as it generalizes from the interrelations of between general theory and specific empiric reality. In this approach, data gathering is done to investigate a phenomenon, spot themes and patterns as well as set them into relation to already established theory with the result of the modification of existing theory (ibid).

3.2.2 Exploratory research

In the case of the research purpose, Saunders et al. (2016) and Bell et al. (2022) state that exploratory, explanatory, descriptive, evaluative and combined study approaches exist. Exploratory research is a useful tool for posing open questions in order to learn more and build understanding about a particular subject of interest. If one wants to better understand a topic, issue, problem, or phenomenon, or if the exact nature of a topic of interest is unclear, an exploratory research purpose can be helpful (ibid). Gaining a precise profile of events, people, or circumstances is the goal of descriptive research, while explanatory research refers to studies that demonstrate the causal links between various variables. Evaluative research seeks to determine the effectiveness of a given concept and combined approaches seek to combine aspects of different research purposes (ibid.).

As the goal of this study is to better understand how and with what limitations and possibilities corporate entrepreneurship and intrapreneurship contribute to understanding organizational sustainable development, the choice of an exploratory research is adequate because it helps to better understand the now unclear and often interchangeably used terms of corporate entrepreneurship and intrapreneurship. Additionally, the purpose is to abductively employ already existing theory while also altering and enhancing them with new insights due to a new combination of theory and empirical data, which makes an exploratory research purpose suitable for this study.

3.3 Research approach

In this chapter, the multi-method research approach and the case-study method that are adopted in this thesis are presented. They are further connected to our research goals and research questions as well as to the remaining methodological choices.



3.3.1 Multiple method approach

When it comes to research approaches, Saunders et al. (2016) and Bell et al. (2022) highlight the fact that different methodological categories can be differentiated: Mono or multiple method quantitative, mono or multiple method qualitative and mixed methods simple or complex. Typically, a deductive method is employed in quantitative research, with the goal of using facts to evaluate hypothesis while it could also adopt an inductive strategy, in which theory is developed from facts (ibid.). However, because we opt for an abductive approach, qualitative methods are employed, because as an interpretative philosophy is frequently linked to qualitative research, it requires interpretation as researchers must make sense of the varying, socially created interpretations of the event under study. In order to build trust, engagement, access to meanings and in-depth knowledge, researchers must conduct their work in a natural environment, or research context, which is why this type of study is frequently referred to as naturalistic. In practice, a lot of qualitative research develops theories using an abductive technique, where inductive inferences are generated and deductive ones are verified repeatedly during the investigation (ibid.), which is also the case for this thesis. In order to provide a conceptual framework and theoretical contribution, qualitative research examines participants' meanings and their interactions utilizing a range of data gathering methodologies and analytical approaches. Data collection is non-standardized such that throughout a study process that is both realistic and participatory, questions and techniques may change and arise in the process of data collection (ibid.).

Because this study also contributes by developing and enhancing a conceptual model and because it employs an abductive approach of reasoning, a variety of methods of data collecting in the form of semi-structured interviews, direct observation through a study visit to the case-company's production site, posing follow up questions in person and via mail as well as collecting secondary data from the case-company's website was applied. A related qualitative analysis process in the form of thematic analysis is used here to analyze the data gained from this multi-method qualitative study design. In short, we adopt a multi-method qualitative approach, because it corresponds well to the scope, research design and purpose of this study.



3.3.2 Case study

Based on our study being exploratory and on the emphasis of our research approach being on connecting intrapreneurship and corporate entrepreneurship with the sustainability context of an organization, we adopt an abductive way of reasoning and a case-study approach. According to Saunders et al. (2016) and Bell et al. (2022), a case study is a detailed investigation into a subject or phenomenon in its actual environment that aims to comprehend the dynamics of the subject of inquiry within its environment or context. In case study research, the term "case" can refer to a variety of case subjects, including a person such as a manager, a group such as a work team, an organization or business, an association, a change process or an event (ibid.). Case studies typically derive data for analysis from varying and complementing methods (ibid.), which we respected by employing semi-structured interviews, study-visits to the case-company, asking follow-up questions and exploring secondary data to provide a frame and context for the primary data.

In our case, with the case study approach, we aim to analyze the empirical data by finding themes and patterns in the first step, linking these to existing literature in order to improve and extend existing theory in the second step and creating and gaining new aspects and insights in the third step. In order to reach this goal, we aim to investigate one case in depth in order to contribute to the existing literature more robustly and to substantiate our findings in a richer and more holistic way, including a single-case approach to our study. As for time horizon, we choose a cross-sectional in contrast to a longitudinal approach (ibid.), because the time resources for conducting the study are limited due to the nature of the study being a master's thesis.

Furthermore, for this study, different perspectives from one case were chosen to analyze, making the methodological choice for this study an embedded case study. An embedded case study focuses on distinct sub-groups or departments within an organization (ibid). We focus on investigating the strategic and corporate-level top-down approach of corporate entrepreneurship in connection with sustainability, while we also concentrate on the individual, everyday work and employee-level bottom-up perspective of intrapreneurship in relation to sustainability issues. Therefore, interviewees from leading management positions, as well as employees on lower hierarchical levels were chosen as respondents. Moreover, the area of work of the interviewees focuses



on engineering and product as well as sustainability and strategy in order to understand the main purpose, production processes and operations of the case-company in the context of the case-company facing sustainability challenges.

3.4 Data collection

In the data collection chapter, the detailed ways of gaining data for analysis are explained. They consist of semi-structured interviews, study visits and secondary data. Moreover, the sampling strategies, the interviewing process including timeline and participants as well as the case-company and the interviewees are presented. Finally, more detailed information about the practical interview conduction is given.

3.4.1 Semi-structured interviews

For data collection, Saunders et al. (2016) and Bell et al. (2022) argue that different methods can be used. Structured, semi-structured, and unstructured interviews are the three types of interviews most frequently employed in academic research. Semi-structured and unstructured interviews usually suit a qualitative approach, while the structured interviews are more of a quantitative nature. In an unstructured interview, there is often no planning or preparation, no interview guide, and no set list of questions. A structured interview employs a standardized interview guide that guides the interviewer's questions, but this has the major downside of precluding the possibility of further inquiries. By employing an interview guide and enabling the interviewer to ask follow-up questions to elicit more information from the responder, a semi-structured interview combines the advantages of both methods, as finding subjective ideas and experiences can be helpful when doing this kind of interview (ibid.).

To gather data for the kind of research we aim for in this study, semi-structured interviews are conducted, because they are helpful to understand the situation and to find out about the context of the case study (ibid). As employing this method provides crucial background or contextual information for the study, it fits the chosen abductive exploratory approach. Semi-structured interviews are not standardized, which means that the researcher has a list of themes and perhaps some essential questions to cover in semi-structured interviews, however, their application may vary from interview to



interview. This method of data gathering is suitable for an exploratory abductive research approach because it provides important contextual information as well as insights into the underlying reasons for attitudes, decisions and processes (ibid.).

Following Saunders et al. (2016) and Bell (2016), a semi-structured interview is frequently carried out with the use of a list of questions covering a limited range of subjects. These questions are compiled in an interview guide, which is used as a general guide that at the same time allows for follow-up questions and flexible reactions to the changing and dynamic interview situation. For the purpose of ensuring that the direction, the covered topics and the general quality of the semi-structured interviews are given (ibid.), an interview guide (see Appendix 2) was developed and used. Because it is crucial to keep the theoretical framework in mind when developing the questions for the interview guide, the theories, goals, and research questions were taken into account to help design congruent and logical interview questions that are linked to the previously compiled findings from prior research and employed theoretical frameworks. A special focus was laid on basing the interview questions on the conceptual model to ensure and facilitate the theoretical categorization of the collected data and to ensure the abductive theoretical contribution of the analysis findings (ibid.). The semi-structured interviews cover areas such as intrapreneurship, corporate entrepreneurship, sustainability, sustainable development as well as the chances and limitations of entrepreneurship in organizations in relation to sustainability issues.

3.4.2 Study visit and secondary data

To follow up on the interviews and to gain more direct insights, a study visit to the production site is organized and conducted in collaboration with interviewees 3 and 4 after the semi-structured interviews were held. Additionally, an employee from the area of test engineering that at the same time holds a position as innovation coach takes part in the study visit. Both authors of the study take part in the study visit, and a more informal and smaller set of follow-up questions was prepared beforehand. The study visit has the goal of getting an overview of the local context, to be able to get deeper information due to being able to ask follow-up questions and to secure additional as well as more direct information sources. To complement the insights generated by the semi-structured interviews and by the study visit and to ensure the case study to be



more in-depth, secondary data is collected from the website, press releases and documents of the case-company. According to Saunders et al. (2016) and Bell et al. (2022), this overall approach of complementing the semi-structured interviews with a study visit and secondary data is useful to contextualize, deepen and fact-check primary data gained from the semi-structured interviews. This approach has also the purpose of deepening the case in order to get more reliable, diverse and fruitful insights for analysis.

3.4.3 Sampling strategies and interviewing process

For the semi-structured interviews, strategic sampling is argued by Saunders et al. (2016) and Bell et al. (2022) to be an appropriate strategy for this study since it intends to analyze corporate entrepreneurship and intrapreneurship activities within an existing firm and their relationships to sustainability contexts (ibid.). Because of this, the interview partners are required to be diverse in their hierarchical level and position, because we are interested in corporate entrepreneurship on managerial and strategic level, in intrapreneurship on the individual employee level and all the different connections and stages between both. The interviewees were aimed to have a positioning product, engineering or sustainability in order to gain insights that are relevant for our research goals and diverse in their perspectives to get a holistic and deep understanding of entrepreneurship in the case-company. The method of strategic sampling is therefore suitable because it is an appropriate method to use when interviewees are required to meet certain criteria, which is the case in this study. Moreover, snowball sampling was combined with the approach for the aforementioned strategic sampling. Saunders et al. (2016) and Bell et al. (2016) define snowball sampling as securing a primary contact, who then refers to other potential interviewees. This approach was used to get more interviewees to participate in the data collection and to gain a more holistic and comprehensive perspective on the case. The initial interviewees were secured via personal contacts of the authors and contacts from the supervisor. After securing these initial interviewees, they referred to other potential interview partners by receiving contact details, we reached out to these interviewees and arranged interview appointments. In total, five interviews with five different interviewees from the case-company



over a timeframe of five weeks were conducted. Details about the sampling and interviewing process as well as about the position of the interviewees can be found in the following overview:

Data collection	Date	Medium	Sampling	Participant(s)
1	21.03.2023	Online	Contact from supervisor	Manager in sustainability and public relations
2	03.04.2023	Online	Contact from author 1	Employee in design engineering
3	06.04.2023	Online	Referred by interviewee 1	Manager in product platform and architecture
4	17.04.2023	Online	Referred by interviewee 2	Employee in sustainable design engineering
5	18.04.2023	Online	Contact from author 2	Test engineer consultant from external company working fulltime for case company
6	25.04.2023	On-site	Study visit organized by authors and interviewee 3	Interviewee 3 and 4, innovation coach employee from test engineering

Figure 3: Primary data collection overview

3.4.4 Portrait of the case-company and interviewees

The case company is located in the manufacturing business of heavy machinery. The organization was chosen to provide the case and empirical data for this study due to several reasons. First, as the organization has a strong heritage and a deep embeddedness in the Swedish context, it provides exactly the Swedish perspective we iden-



tified to be missing when researching about entrepreneurship in organizations in connection to sustainability. Second, as this organization is located in the more conservative manufacturing business in the heavy machinery industry, it faces an especially severe need for adapting to changing public demands and expectations as well as regulatory requirements from policymakers regarding sustainability aspects. This makes this case particularly interesting to research with regard to the chances and limitations of entrepreneurship to face sustainability challenges, as it is described in our second research question. Third, the chosen organization is not only deeply embedded in the Swedish context and society, but also part of a bigger, internationally active corporation with many different sub-companies. This fact provides fruitful starting points for discussing and exploring the different aspects of corporate entrepreneurship as well as intrapreneurship, as it is stated in our first research question.

In general, it is the goal to gather as diverse data with as many different perspectives and insights as possible to take the complexity of the topic and the organization into account. Therefore, interview partners from different hierarchical levels and from different departments were invited. However, we concentrated on engaging with interviewees from the areas of sustainability, product development or engineering in order to align the research questions, overall study topic and purpose with the selection of the interview partners. An overview of the interviewees and the sampling process can be seen in the table above. The first interview partner, a manager in sustainability and public relations, was accessed via private messages on a business network website and via email to establish a first contact and to schedule the interviews. The second interview partner is a personal contact from one of the researchers and works as design engineer in technical improvement and maintenance. The third interview partner, a manager in product platform and architecture, was identified and contact was established with the help of the first interview partner. The fourth interview partner was referred by the second interview partner and works as design engineer with a sustainability focus. The fifth interview partner is a test engineering consultant from an external consulting company who works full-time for the case company. This interviewee is a personal contact from one of the authors. The sixth respondent took part in the study visit, together with interviewees 3 and 4, and is a test engineer employee who also holds a position as innovation coach.



3.4.5 Interview conduction

Interviews are conducted through virtual meetings via online solutions in order to facilitate participation (Saunders et al. 2016, Bell et al. 2022). Prior to the interviews, the interview questions, the areas of interest for the interview, the topic of the thesis as well as the research purpose and goals were communicated in written form to the interviewees, in order to enable the interviewee to prepare and in order to increase trustworthiness and transparency which leads to an improved quality of the collected data (ibid). Both authors of this study are present during the interviews, and both equally are responsible for taking notes and conducting the interviews. The notes are complemented by recording the interviews, which was agreed upon by all parties prior to the interviews. The study visit was conducted by the authors visiting the production site in person, where the local production facilities were shown to the authors. Additionally, the authors conducted a focused group talk (Saunders et al. 2016, Bell et al. 2022), where respondents 3, 4 and 6 as well as the authors of the thesis engaged in a discussion about entrepreneurship, innovation and idea management processes in the case-company. During the talk, the authors were able to ask follow-up questions based on what was said in the discussion as well as on the insights generated before in the semi-structured interviews. During the study visit, data was secured by both authors by taking notes. In general, the best practice recommendations for preparing and conducting a semi-structured interview established by Saunders et al. (2016) and Bell et al. (2022) were respected at all stages of the data collection. Some questions could not be answered during the interviews, because they had to be discussed with other colleagues or supervisors due to differing opinions, the complexity of the question or the missing knowledge of the interviewee. These questions were then answered via a follow-up mail after the interview. The final thesis is sent to all interview participants in order to let them take part in the insights generated by this study and to increase transparency and fairness.

3.5 Data analysis

As semi-structured interviews are stated by Saunders et al. (2016) and Bell et al. (2022) to provide in-depth and rich information, a thematic analysis approach is employed to analyze the collected data. Thematic analysis examines document information, and it unravels themes and patterns by seeking to investigate the underlying meaning of what



is said in the collected data, which makes this method especially suitable for analyzing and understanding great amounts of qualitative information, integrating data from various data sources, identifying key themes or patterns, creating descriptions of themes of data, explanation and theory development as well as arriving at conclusions (ibid.). Because these goals and consequences of thematic analysis suit the abductive and qualitative approach of this study, it was deemed to be the most appropriate to gain reliable and valuable insights that are relevant to the chosen research topic. First, the data was transcribed from the interview recording using a transcription tool. The transcription is enriched by the notes that were taken during the interview were necessary and suitable. The collected data is then categorized into different groups by coding the information according to aspects and notions from previous research, from the developed conceptual model and from terms and words the interview partner used. After the coding is done, patterns, themes, similarities, differences and underlying assumptions, values and attitudes can be observed (ibid).

The data gained from the semi-structured interviews is finally presented according to each interview to highlight the individual responses. It is also at the same time allocated and coded to the different themes and topics of entrepreneurship in general, sustainability and sustainable development, intrapreneurship, corporate entrepreneurship and chances and limitations of entrepreneurship within organizations for facing sustainability challenges. The collected secondary data is also presented under each topic to contextualize and to relate to the insights from the semi-structured interviews. It is important to note that according to Saunders et al. (2016) and Bell et al. (2022), the coding process and the analysis process often overlap and depend on each other in a recurring matter (ibid.). Additionally, the analysis is made by relating these identified patterns and themes from both the secondary and the primary data back to the conceptual model as well as to prior research and theory in order to take into account the abductive reasoning approach that was chosen for this study and to make a theoretical contribution. This approach has the goal to find similarities, differences, patterns and reoccurring themes in both data sources by comparing them to the already presented findings from the theoretical framework, the literature review and the conceptual model. Ultimately, the analysis results in a refined and updated conceptual model, where the analysis results and insights from data collection are taken into account.



With this, a conceptual and empirical contribution is made by enhancing and deepening the concepts of intrapreneurship and corporate entrepreneurship with new findings from a sustainability context.

3.6 Scientific credibility and data quality

As Saunders et al. (2016) highlight, data quality issues when using semi-structured interviews cover aspects such as reliability, forms of bias, cultural differences, transferability and credibility. Reliability issues mainly consist of the problem that results cannot be successfully reproduced in similar research due to the complex and dynamic nature of the context of semi-structured interviews. One way to overcome this issue is to transparently and thoroughly describe the methodology and context of a study that uses semi-structured interviews, which is done in this methodology chapter. Bias and cultural differences can be present on the interviewer's or the interviewee's side and it can be avoided by respecting certain steps in interview preparation and conduction. These can be being aware of knowledge, culture, local and attitude differences between interviewee and interviewer, paying attention to research context and prior research, communicating the themes of the interview to the interviewee beforehand as well as being aware of the impact of appearance, behavior, tone, topics, data recording and much more when conducting the interview. Transferability problems of having a single-case study and of employing semi-structured interviews can be countered by inquiring into the nature and overarching patterns of the case that allows drawing generalized conclusions to some extent. This is done in this study by observing the patterns and reoccurring themes in the data through thematic analysis and by relating the identified themes back to already existing literature and theory. Although the chosen methodology has some shortcomings concerning transferability, credibility is often given to a higher extent compared to other methodological approaches due to the close and direct source of data collection that is provided by a thoroughly prepared and conducted semi-structured interview. To ensure this high degree of credibility, specific measures to guarantee a qualitatively well-prepared and conducted interview were undertaken as described in the sections above (Saunders et al., 2016).



3.7 Ethics

Saunders et al. (2016) state that every research needs to be based on an ethical code that consists of ethical principles. This is to ensure that the research process, findings and all involved persons and parties of interest are treated ethically and according to human rights. The ethical principles on which this study is based are first integrity and objectivity of the researcher, meaning behaving honestly, supporting correctness and acting openly while staying away from fraud, dishonesty, misrepresentation, bias, rash commitments and false promises (ibid). This principle also includes that any business affiliation or conflict of interest is mentioned transparently. Second, respect for others consists of social obligations and responsibilities to those involved or impacted by research, where every person's rights should be acknowledged, and their dignity should be upheld. Third, the avoidance of harm is about protecting all research participants from any kind of harm, be it physical, mental or emotional. It means avoiding all occurrences of, for example, pain, stress, discomfort, social pressure, discrimination, harassment, violation of confidentiality and so on. Fourth, the principles of the privacy of those taking part and of ensuring confidentiality of data and maintenance of anonymity connect to this because it is one of the basic principles that underpins all other ethical implications. As research is about facts and as attributable data may cause harm, this principle is also key to the reliability of data. These principles also entail the principles of the voluntary nature of participation and the right to withdraw as well as the informed consent of those taking part. Fifth, the principles of responsibility in the analysis of data and reporting of findings as well as compliance in the management of data and ensuring the safety of the researcher are important principles to abide to data laws and regulations (ibid). All of these principles were actively executed and respected by the authors at all stages and processes of the research undertaken for this study.

4. Empirical Data

In this chapter, the empirical data gained from the semi-structured interviews, from the study visit and from the secondary data sources are coded into themes. These themes include entrepreneurship, sustainability and sustainable development context, intra-preneurship, corporate entrepreneurship and chances and limitations facing sustainability issues with entrepreneurship. All these themes are divided into sub-categories.



Themes and sub-categories are based on a combination of the patterns, topics and recurring motives that can be observed in the collected data as well as the aspects that are presented in the conceptual model and in the literature summary table (see chapter 2.3).

4.1. Entrepreneurship

Here, the primary as well as secondary data is coded under the topic of entrepreneurship within the case-company. The chapter deals with entrepreneurship in general, the understanding of entrepreneurship as ideas and innovation and with the different notions of entrepreneurship on company and employee level.

4.1.1 Entrepreneurship in general

One respondent with a managing position stated that there is no formal definition of entrepreneurship in the company. Matching this observation, another employee respondent emphasizes that entrepreneurship is not directly incorporated into the case-company's strategy, but that it is more indirectly strategically recognized as innovation. Therefore, informally, entrepreneurship is mainly considered to be a type of innovative owner's mentality, including that every employee should take care of the company as if was his or her own as well as driving continuous improvement and progress in for example financial and commercial aspects as well as regarding customers, stakeholders, and the society in general. For this respondent, entrepreneurship in the context of sustainability often takes form in new ventures and subsidiaries. Two interviewees define entrepreneurship as starting a new company or new projects, while one of them states that entrepreneurship is "to start something new (start-up), new ideas, change, new people with other skills, speed in development, being brave, risk-taking, looking outside the box". For this respondent, who is located on a higher management level, sometimes not following the existing standards, for example searching for additional knowledge outside the case-company, is essential in entrepreneurship because only following the established rules would lead to ending up with already existing technology and not with innovation or something new. More in detail, the entrepreneurial process here is stated as having all the benefits of the company's group, such as knowledge and sources on the one side, and not having to follow specific processes on the other side. This opinion is shared by another respondent without leading responsibilities, who understands entrepreneurship as finding new ideas and solutions



as opposed to going with the established processes. It is also about being bold in trying out new ideas and taking options when they arise.

4.1.2 Entrepreneurship as ideas and innovation

The case company defines entrepreneurship within its organization mainly as innovation. According to their company website, innovation plays a central role as it is described as a company mindset and way of working. Especially in the realm of product development, innovation is key for the whole development process starting at early conceptual exploration and ending in full-scale production. Here, product development means the development of totally new solutions as well as optimizing and improving already existing technologies. The core innovation progress happens within the advanced engineering team, which the task to forecast up to 30 years into the future to explore the case-company's technological opportunities that are in their early stages today, but which could make a big difference and accordingly for which a great demand could come up in the future (Case-company (4) and Case-company (5) 2023).

Another innovation facility within the case-company is the Concept Lab, which is a joint visionary communication platform for the case-company as well as the mother company. On this platform, new ideas and innovative concepts are presented with a special focus on meeting the customer's future needs and fostering the transition to a sustainable future with these (Case-company (4) 2023). Examples of such ideas are hydrogen-fueled, autonomous driving, remote-operated, electric, or self-learning prototypes (Case-company (5) 2023). In that sense, innovation mainly takes place in the electrification of the products, which results in less to no noise and exhaust pollution as well as increased productivity, longevity, and power. Other innovations include products with remote operating and autonomous driving functions. Other examples are smart and connected products or hybrid and hydrogen-fueled engines (Case-company (4) 2023).

Another important innovation driver is partnerships and collaborations, where innovation and research and development activities go hand in hand. The innovation projects fostered by partnerships range from electrified and emission-free excavation sites over implementing a test site with 5G to test remote-controlled and autonomous products to developing self-learning machines that are able to independently make decisions,



perform tasks and interact with humans. Additionally, the case company hosts innovation events, for example in the form of innovation summits where the focus lies on technology development in the area of electromobility, automation and connectivity with the goal of making the construction industry more sustainable. Another example of such an innovation-centered event is the Xploration Forum, where customers, international press, government representatives and academics can witness and explore different futuristic concepts and innovations ranging from electromobility over intelligent products to total site solutions (Case-company (4) 2023).

It is also highlighted in the interviews that due to the case company being in a shift from a hierarchical and traditional company to being more agile and adaptable, employees are encouraged to come up with and follow new ideas. This notion of ideas being crucial to entrepreneurship is shared by two other interviewees from differing hierarchical levels, who interpret entrepreneurship as trying out and investing in new ideas and as fostering innovation. This manifests in the existence of two innovation coaches for each production plant, who motivate employees to develop and try out new ideas. Also, “innovation days” where innovation projects are brainstormed, rewarded, and conducted are frequently organized. Additionally, the case company operates a platform for idea management and innovation that serves the purposes of strategic innovation communication, generating ideas and sharing or interacting with them. However, it also becomes clear that there are some artificial innovation bottlenecks in the idea management platform because not all ideas are entered into the platform by the idea owner because of the extra work or simple lack of knowledge. Instead, often ideas are more informally discussed by the idea owner and their manager. It is further stated that other employees have acted entrepreneurially by introducing ideas that have been patented and have been later successfully implemented on machines.

4.1.3 Entrepreneurship on company and employee level

Additionally, one interview partner from a higher hierarchical level highlighted individual and corporate traits such as taking action, embracing failure to learn from it, reaching beyond company borders as well as an increased collaboration with stakeholders and society in general as being crucial characteristics of entrepreneurship within the case company. Another respondent without leading competencies sees entrepreneurial activities more on the company strategy and management level than on



the individual employee level because the strategic goals of the case company largely influence what kind of innovations are desired. According to them, on the individual level, small-scale ideas are tried out for example in new planning methods or work approaches, but big-scale innovations and fundamental changes are rarely initiated by employees. This view is shared by another respondent with a managing position, whose opinion is that entrepreneurship is more of a company strategy, but the management does not work with it because often they do not need to handle changes in their positions. They are furthermore afraid of failure and to take risks. Still, there are a lot of individuals in the company willing to take risks, but they are often not encouraged enough by the management. Yet, the same interviewee states that the company management would encourage creativity, ideas, and initiatives from employees who have outstanding personalities, look outside the box and have a supportive team in the background. This is also perceived by an employee respondent because it is stated that everybody is encouraged by the upper management to act entrepreneurial, innovative and to be creative. Especially to meet the goals of the Paris agreement to be fully fossil-free by 2035, the case company takes any ideas from the lowest level very seriously and supports them by providing the resources needed to follow them further. The connection between management and employee-level concerning entrepreneurship can be illustrated by the story of one of the respondents: The participant himself once encountered a problem within a sustainable innovation project where the knowledge of that field was based on another site. Hence, the participant got allowance, time, and room to grow and develop himself independently in that field. As a result, the issue could be solved, and the knowledge is further used on other ongoing projects, which can be seen as a personal entrepreneurial action by the participant.

4.2 Sustainability and sustainable development context

Here the data concerning the sustainability and sustainable development context is presented. The empirics are coded under the sub-topics sustainability industry context, sustainability measures within the case-company and sustainability challenges in relation to entrepreneurship.

4.2.1 Sustainability industry context

Several interview participants underline the importance of innovation and creativity to keep up with the new challenges especially related to sustainability and especially in



such a conservative and usually slow-changing industry. In this connection, it is challenging to balance sustainability innovation with what could work in this traditional industry. When it comes to adapting to external changes that come from sustainability challenges, the participants answered that the company would try to adapt as much as possible within the line of the market. The science-based targets that the company commits to, and the sustainable product innovations are fundamental for keeping competitive advantage and technological progress. Still, these innovations must go in line with what the markets require, so that sustainable and economic goals do not contradict each other. Across the participants and the different hierarchical levels, it is emphasized that the company is in a complicated situation, where it has to forecast the demands by knowing the market and adapting and developing to it before it is actually demanded. Therefore, it is difficult to find a balance between maintaining the profitability of the current production and adapting and developing new technology because of future changing market needs and external requirements. One of the interviewees stated that today, most of the production is commercial and therefore profit-orientated where only a small part is about changing and adapting technology to sustainability aspects, but in the future, it is aimed to achieve an equal balance between both.

4.2.2 Sustainability measures within the case-company

According to the sustainability website, the case-company recognizes rapid change because of the climate crisis, population growth, increased urbanization, and novel consumer behaviors. The case-company regards this as the primary driver of the dynamic and radical transformation of the construction industry. To address this change, a holistic view is adopted where the case-company sees itself as part of a society that works together in order to shape these sustainability challenges. This entails improved technology to act against climate change, the responsible use of the earth's limited resources and how every part of society acts in specific communities. The case-company aims for an active role to shape and drive these dynamic changes by recognizing the long-term meaning of present decisions. Additionally, the case-company commits to the Sustainable Development Goals by the UN and since 2012, it has cooperated with the WWF Climate Savers Program. The cooperation of the case-company with the WWF Climate Savers Program includes a set of goals, which are the further im-



provement of the product's fuel efficiency, the development of new advanced technologies for a reduced environmental impact of the products, playing an active role in the international standardization work for machine fuel efficiency, striving for energy efficiency improvement of the production site and selected suppliers, providing increased customer support for efficient product use and sustainable development promotion, supporting research in climate change countermeasures and leveraging environmental awareness and initiating a dialogue with suppliers about energy efficiency (Case-company (1) 2023 & Case-company (2) 2023).

The action framework to achieve this active role in addressing sustainability challenges includes three aspects: climate, resources, and people. In the climate realm, the case-company commits to Science Based Targets that are in line with the global goal of reducing global warming to 1,5° Celsius and to the goal of net-zero greenhouse gas emissions by 2040. In this frame, developing products and solutions that reduce the CO₂ footprint is prioritized. To achieve these goals, close collaboration with different stakeholders such as municipalities, cities, suppliers and customers, sustainable power solutions, improved efficiency, efforts to implement fossil-free solutions such as electric, hydrogen and liquefied biogas solutions, making the manufacturing sites CO₂ neutral and reducing direct and energy indirect emissions from our operations, internal transportation, goods and services (Case-company (1) 2023). The climate efforts of the case-company are subject to third-party assurance (Case-company group (1) 2023). Moreover, information about the environmental impact, the carbon footprint and the life cycle assessment of the case-company's products can be transparently and easily accessed (Case-company (3) 2023).

In the area of resources, a complete life-cycle approach is applied to all aspects of the company's activities in order to change existing production methods and consumption patterns by implementing reuse, reduce, remanufacture and recycle' approaches across the whole value-chain, especially in product design, purchasing, materials and substances. Another initiative in this realm is to replace fossil fuels with renewable energy sources where possible and strive for the realization of zero global landfill waste. In the people area, the health, safety and wellbeing of everyone in the case-company and in the value chain is prioritized. Other aspects of social sustainability in the case-company include diversity, inclusiveness, empowerment, an unconditional commitment to



and defense of human rights as well as an active position against corruption (Case-company (1) 2023). Examples of the societal engagement of the case-company are education and skills development in emerging and established markets, increasing local employment by offering vocational training, partnering with and donating to selected local charities and non-profit organizations and engaging in projects that foster female involvement in technology and engineering (Case-company group (2) 2023).

According to several interview participants from varying levels, the organization follows a holistic approach to sustainability. The company manages three pillars when it comes to sustainability strategy: First, the organization recognizes the climate and related emissions as crucial sustainability aspect. In this realm, the case-company commits to science-based targets and the focus lies on reducing carbon emissions by implementing change and improvement across the value chain and on all company levels. However, a focus lies on reducing the number of machines working on fossil fuels. Therefore, the products are aimed to have 30% less CO₂ emissions by 2030, the site operation is aimed to have 50% less CO₂ emissions by 2030 and the production facility where the respondents work went carbon neutral a few years ago. Additionally, possibilities to increase the sustainability of the supplied materials are explored, for example in a project where machines made of fossil-free steel are built. It is also stated that greenhouse gas protocols by the government and the European Union as well as guidelines by the organization WWF are followed. Another employee underlines that generally, the company puts the Paris Agreement targets as their priority in their overall strategy. According to the respondent, this is motivated through not only the company's but also the Swedish way of handling and perception of importance regarding international agreements. Furthermore, sustainability has long been in the overall strategy of the company, and it is present in its operations through the extensive attempt to automate most parts of the production line to increase production reliability and decrease waste.

The interviewees also recognize ecological sustainability to be the main focus of the case-company when it comes to sustainability, but the careful and responsible use of earth's resources is also part of the sustainability strategy of the case company. To reach this goal, for example, circularity and waste management systems are implemented. Moreover, people and society are also considered to be an important part of



the organization's sustainability strategy. Here, dimensions such as safety, human rights and overall societal responsibilities come into play. Several interviewees stated that the company wants to improve socially by reaching a percentage of at least 35% of female employees. Especially in the conservative field of construction equipment where the company is situated, the workforce is currently dominated by a higher percentage of male employees.

4.2.3 Sustainability challenges and entrepreneurship

The interview participant emphasizes the importance of implementing innovation and out-of-the-box thinking in all steps of the value chain, in all hierarchical levels as well as in every product and department in order to fulfill the sustainability strategy. Research and development as well as entrepreneurship are stated to be crucial for generating innovation that enables the organization to live up to the growing challenges of the sustainability context and to the therefore changing market needs. Examples of innovations generated by research and development to meet challenges from the sustainability context are the transformation of fossil products towards renewable solutions and the implementation of a globally organized innovation management department within the case company. One interviewee from a lower organizational level has the opinion that innovation and creativity play a big role in achieving these sustainability goals and in complying with external sustainability regulations and demands. Before this background, the case-company actively integrates itself and sees itself as a part of the bigger societal movement toward a sustainable future. However, the respondent also criticizes that the case-company adapts only slowly to changing sustainability requirements because of the size of the organization. Although sustainability is frequently internally discussed and although sustainability is an important topic for management, actual implementation and operational change happens takes time to happen.

4.3 Intrapreneurship

Here, the data with relation to intrapreneurship aspects as identified with the help of prior literature is presented. More detailed, the chapter is further about intrapreneurship agents and idea ownership as well as knowledge sharing, organizational learning and cross-functional collaboration. Furthermore, data about job design, team diversity



and reward systems as well as company culture, employee encouragement and inter-hierarchical communication is enclosed.

4.3.1 Intrapreneurship agents and idea ownership

According to the interviewees, not only does one group or department work with intrapreneurship aspects, but the whole organization tries to integrate intrapreneurial activities in a broad and dispersed way. At the same time, for technology sustainability-related opportunities intrapreneurial approaches are quite new and not many are working with it, while operationally orientated departments are more experienced in working with intrapreneurship-related processes. Most interviewees claim that the company platform gives the opportunity for every employee to involve themselves in the innovation process by bringing up and talking about their new ideas. There is no specific department or group, but it is up to everyone to come up with ideas. Moreover, in general, ideas arise from a running process and not from one specific meeting, so that would be why everyone is encouraged to publish their ideas. The group or specific department is rather responsible for focusing on publishing, following, and realizing those ideas. However, it is also underlined and criticized by one participant that not every idea has been followed further. According to another interviewee, the major institutions that focus on intrapreneurship are the departments of innovation and patent as well as advanced engineering which focuses on identifying and exploring opportunities for the company. These departments are active in basic technology research up until critical experimental proof of function or concept. Those departments are not limited to specific groups or functions, but they are rather open to everybody within the company who wants to try and explore new areas. Rather, individual engineers like some of the respondents would work independently next to the advanced engineering process on their own until the project is ready to be implemented into the ordinary production process.

Ownership of new ideas depends on the organizational level on which the innovation occurs and in which stage of development the new idea is currently located in. Often, in an early stage, the single employee owns the idea and when the idea is getting implemented and developed and furthermore when it becomes interesting for the whole organization, the department takes ownership. Here, for one interviewee it is important



to keep in mind that ownership is mostly about product platforms and not about single products.

4.3.2 Knowledge sharing, organizational learning and cross-functional collaboration

Knowledge sharing and organizational learning mainly take place via formal and informal as well as local and global networks. Interviewees state that organizational learning and knowledge sharing are enabled through cross-functional collaborations between the different departments, where the advanced engineering and innovation departments once again play a crucial role. Cross-functionality is even underlined as the company's "backbone" principle for the future. For example, advanced engineering and innovation are supporting the creation of new ideas, and different product platforms within the technology and product development organization. On each platform, there are cross-functional teams with setups of engineers, purchasing, operations, and salespersons. In each team, the budget and spending for future products are discussed and decided. Another example of cross-functional and inter-organizational collaboration is the joint engagement of other production plants and the case-company's local plant in developing sustainability-related innovations, such as sustainable hydrogen fuel solutions. For exploiting sustainability-related opportunities and for sustainable innovation, it is stated by all participants that cross-functional collaboration and partnerships with other organizations are of utmost importance. Another participant from a lower position recognizes the procedures of knowledge sharing as very disciplined. According to this respondent, the fact that some products and projects are handled and worked on within several companies outside the group leads to challenges of knowledge sharing and lack of time because of policy reasons and communication issues between those companies. Internal learning and knowledge sharing within the test engineering department however is well organized, argue some interviewees.

One example of learning institutions within the case-company is "company group university" which provides innovation-, creativity-, and entrepreneurship-aimed education, training, and knowledge sharing with a lot of courses. In addition to the university concept, a research and development session is provided virtually in the mornings where specific topics concerning innovation can be addressed. Those sessions are fur-



ther an important tool for communication between management and employees. Another example of organizational learning is the company's learning platform, which offers general knowledge sharing about the products. Some interviewees from lower hierarchical levels are not sure about the extent to which intrapreneurial aspects such as innovation and creativity are existent among the learning contents. However, according to one participant, most specific questions are asked directly to the responsible persons and are not entered into the formalized learning platform. Additional coaching shall encourage employees to bring up their ideas. One interviewee from a higher management level also mentions a workshop on the site where employees from the whole company come together to work on certain problems. Further, this respondent highlights the existence of an inventor club where a group of people (the interviewee included) come together that are continuously having and sharing out of the box ideas.

4.3.3 Job design, team diversity and reward systems

In general, job positions are experienced by most interviewees as being more broadly defined, and people would have a holistic view and general understanding of the business, product use and operations. In the case of an employee being interested in another field or subject, he or she therefore gets the opportunity from the company to follow it and to discover it in more detail. Opposed to that, one interviewee claims that if an employee is interested in another field, there is little freedom given by the management to do so. When looking more into special positions such as product development or test engineering, there are specialists and experts, and the focus is narrower. In this regard, most interviewees state that the job design becomes broader the higher a position is in the company hierarchy, and vice versa. Matching that, one interview partner from a lower position states that the job description is quite narrow and so is the work itself focused on a daily routine.

Rewards and salaries are not only based on direct performance but also based on values when it comes to continuous improvement and development. A generous employee reward is existent for generating ideas that can be patented. Further, the interviewee states that most engineers themselves are highly motivated by trying to invent something by themselves. There is a one-time reward in cash for special inventions as well, a company technology award that whole teams can apply for a concrete product, and innovations awards for individuals or teams that apply for patents.



Diversity is valued by all of the employees, and it is recognized that diversity that goes beyond gender diversity is important to the company. Therefore, it is claimed that the company would try to mix engineering teams to have both different skills and different personalities. As the company is acting internationally, the support of external colleagues abroad is described as supportive, and internal, the company tries to focus on being very cross-cultural and as diverse as possible. Therefore, the company tries to make the once male-dominant field more attractive for females and further opens itself to acquire more international people from different backgrounds. Regarding diversity in the company, one respondent reports that in the past three years, a lot of new people, especially women and people from other countries have been hired, in order to meet the company's 35% diversity target. But still, the company's average is around 75% men in middle-to-higher age due to the conservative industry and rural location of the company, claims the interviewee.

4.3.4 Company culture, employee encouragement and inter-hierarchical communication

The management transition from formerly being a traditional, hierarchical system towards now trying to be more people-oriented and encouraging people to take their own actions and be innovative is motivating the employees, especially in the innovation and advanced engineering departments. The process also includes removing hierarchical levels towards being an "open door" company where everyone can talk to and with everybody. As a global company, with its heritage in Sweden and Europe, the management is based on the Swedish and Scandinavian culture. The company is trying to merge the Scandinavian way of doing things with a more global and diverse way with different cultures and genders.

Most interviewees underline the openness and flat hierarchy of the company, which makes it possible to reach out to everyone. There is no extensive middle management and there are no more than three levels above regular employees, which helps to have fewer communication barriers. Nevertheless, the middle management is important, precisely to provide resources, the freedom and time to be more innovative and creative. Therefore, the middle management is the mediator between the employees and the higher management. New ideas and innovations have to be presented to the middle management as a clear business case with KPIs in order to be approved and in order



to get access to resources. The role of the middle management level is therefore to support, push and help in managing new ideas. As there are no ideas owned directly by middle management according to one employee interviewee, middle management only plays a mediating and fostering role in idea management. When it comes to new ideas, middle and higher management often does an analysis to find a business-related objective for it and to find sustainable environmentally related values. Thus, opportunity exploitation is highly appreciated and further supported by encouraging PhD students working on projects within the company to exploit opportunities. If an employee has an innovative idea that is in line with an existing product of the company, it is most likely immediately supported by the middle management, most participants argue.

In support to the flat hierarchy mentioned, the company offers a CEO-employee dialogue in the annual meeting, and every three weeks a so-called “open-house” meeting is held, where the management is presenting news and relevant information to the employees and in turn employees can present what they are working on. Alternatively, information is communicated through the intranet and direct personal communication with the management as well as generally via e-mail. However, one respondent states that communication in the company regarding processes is more formally structured, but everyone in the company is reachable. Other methods of communication between the hierarchical levels are, for example, infrequent short internal webinars on higher levels in the single divisions and more in-depth meetings that are more about technology once a month. Both types of inter-hierarchical communication meetings can be attended by everyone in the case-company, although the complicated and extensive organizational structure makes it difficult for lower employees to keep an overview of the different possibilities to take part in information from top management.

Jobs are defined more broadly so that in the case of an employee being interested in another field or subject, he or she gets the opportunity from the company to follow it and to discover it in more detail. As the company is acting internationally, the support of external colleagues abroad is described as supportive, and internal, the company tries to focus on being very cross-cultural and as diverse as possible. Therefore, the company tries to make the once male-dominant field more attractive for females and further opens itself to acquire more international people from different backgrounds.



4.4 Corporate entrepreneurship

In this chapter, data concerning prior researched aspects of corporate entrepreneurship is shown. This includes competitive advantage, strategy and long-term goals of the case-company as well as aspects such as autonomy, management style and failure tolerance. Moreover, data with relation to research and development activities, resources, ideas and innovation as well as about market environment, industry and external requirements is presented.

4.4.1 Competitive advantage, strategy and long-term goals

According to some interviewees, the competitive advantage of the case company lies in the decarbonization of products. It is an integrated part of the company strategy to become a leader in the industry in the realm of decarbonized heavy machinery. Other respondents locate the competitive advantage more in being part of a big automotive group, which facilitates knowledge sharing, joint venture creation, cross-functional collaboration and high-quality products. One interview partner from a leading position locates the organization's competitive advantage in the great value of teamwork, the friendliness and openness of employees and the democratic understanding of working together between different hierarchical levels, departments and teams. Another respondent from a lower position claims that the case-company stands out from the competitors through its high-quality products and at the same time the lead in new technologies and innovations. Another participant regards maintaining a good connection to the customer, answering the customer's challenges and needs with suitable solutions and providing a qualitatively high degree of service to them as crucial aspects of the case-company's competitive advantage. This interviewee also claims that for developing new or more sustainable products, partnerships with other companies are increasingly important for maintaining long-term growth.

According to some respondents, the organization's strategy to achieve long-term survival, growth and renewal is to concentrate on the climate as the core pillar of the business strategy, because this enables the organization to align itself with the growing sustainability expectations from society and demands from customers. This strategy is tied to science-based targets. To reach these targets, the approach of backcasting is applied to ensure that innovation and resource investment are in line with the strategic



targets in the long term. Also, the urgency of sustainability-related innovation is actively recognized by the interview participants as well as the importance of strategic innovation to reach these goals. Another participant claims that the organization strives to secure long-term survival, growth and renewal by recognizing the problems of the demographic change for keeping and recruiting a skillful workforce: Because very competent and experienced employees are retiring, it is difficult to find suitable talent to fill this knowledge gap. Moreover, the organization secures long-term growth by acquiring new competitors and upcoming startups as well as by establishing partnerships. For example, the opportunity of hydrogen fuel was explored by partnering up with several different organizations that were experts in special aspects of doing business with hydrogen fuel, for example, the fueling process, taxes, or regulations.

4.4.2 Autonomy, management style and failure tolerance

Most interviewees point out that in terms of decision-making autonomy, the organizational structures and management aim for an as high as possible degree of decision-making autonomy. They encourage the individual employees to first act themselves, and if that does not work or if more expertise is needed, cross-functional collaboration to solve a problem or to make a decision is encouraged by the organization. Only if these two first steps fail, the last option is to address the issue to the higher management. All in all, it is aimed at empowering single employees to be as independent as possible from higher hierarchical levels, especially on the operational level. One interviewee from a leading position claims that theoretically a lot of autonomy is being given by the management, but in reality, it is limited, and, depending on the position and the manager's personality and attitude, restrictions are often interfering with the individual employee's entrepreneurial behavior. Another respondent from a lower level describes that the organization encourages everyone to make their own decisions as long as it is not affecting the whole company or a product in general. Most respondents claim that work is often independent and project-oriented and that processes are formalized to some extent, but without being extremely regulated. One interviewee also states that the degree of decision-making depends on the scope and size of the innovation or idea. Autonomous decision making decreases the more impact and size an innovation entails and vice versa, therefore permission and consultation from the supervisor or from management must be given for ideas with great scope and impact.



In terms of management styles, most interview participants highlighted that there has been a change in management style from being more formalized, controlled, hierarchical and authoritarian to a more open, democratic, flexible, agile, and approachable management style. One interviewee also differentiates between different situations, where the management and leadership styles change: The interviewee mentions that the management style is more *laissez-faire* in the daily work tasks, but when challenges or problems arise, the management style can be better described as supportive, and solution-orientated.

According to some participants, the tolerance of failure is characterized by allowing trial-and-error approaches in smaller scales or prototype product development phases. This is intended to foster experimenting and innovation in order to improve the current status of processes or products regarding not only sustainability aspects but also when it comes to general profitability, scalability, quality and reliability. At the same time, on bigger scales or in later stages of product development, there are certain limits to failure as this affects the overall survival, growth and profitability of the company. One interviewee suitably states that failure, trial-and-error and experiments are generally encouraged and allowed up to some extent, but that depends on the type, scope and impact of the innovation, the overall current situation and context of the case-company as well as the opinion of the supervisor. Also, most respondents highlight that culturally in Sweden flat hierarchies generally prevail. Regarding hierarchy levels, the production site of the case company has two management levels.

4.4.3 Research and development, resources, ideas and innovation

The advanced engineering unit is described by most respondents as hosting many research and development activities. There, mostly research and PhD students work in cooperation with universities, where new technologies and prototypes are developed and tested. Additionally, competitions are organized in the company where employees can build teams to find a solution to an existing problem. The solutions are evaluated by a jury and after that, the winner is announced with a small reward, often the winning ideas apply for a patent. The respondents further describe the research and development activities as being a balance between developing new things and keeping and improving what has been done. This is important regarding the market environment and the fact that it is very competitive and not many units are sold (compared to the



automotive market). Other innovation facilities are, for example, a workshop only for the purpose of experimenting, building prototypes and testing new ideas. One respondent says that resources are managed and distributed to specific projects and ideas through the company's idea management platform.

However, research and development activities are not restricted to specific departments or facilities. Rather, according to almost all respondents, all people's contributions to exploring new technologies are equally important and encouraged. According to the interview participants, ideas from all departments and hierarchical levels are valued and equally analyzed, no matter where in the company they came from. Therefore, a holistic perspective on the whole innovation process from idea to implementation is adopted and the interviewees even deemed the product development process as probably the most cross-functional activity of the whole company. In contrast to the opinions above, one participant even defines research and development as the first phase of a new idea, where the value, technological aspects, manufacturing processes and implementation issues are explored.

One respondent from higher management emphasizes that resource availability and accessibility for new ideas are dependent on the relationships with people in power and the abilities of the employee to sell the idea to the higher management. Moreover, according to another respondent, the resource distribution for new ideas and innovations is managed depending on the required type of resources. According to the interviewee, for example, time is a more restricted resource than additional financial resources if the innovation's value can be successfully sold to management.

4.4.4 Market environment, industry and external requirements

Regarding the market environment and its dynamics, all participants emphasize that in general, the market and heavy machinery industry are very conservative. This is the reason for quality, cost and availability being the most important product attributes at the moment, but the interviewees expect this to shift in the current and future market development because new requirements and demands arise especially in the use phase of the product. These requirements and demands mainly are about reducing emissions due to the intrinsic motivation of the customers, but also because of external regulations and governmental policies. Competitors of the case company also head towards the decarbonization of products and an increased demand after decarbonized products



of big customers are signs that this trend towards products with reduced emissions is longer lasting and encompasses the whole industry. All in all, the interview participants highlight that the industry and market environment was stable and conservative for a very long time, but that this is changing now even more rapidly.

One interviewee describes the market environment as especially traditional, routinized and slow changing. Challenges occur mostly through external aspects, such as many regulations and requirements. In addition, the participant adds that it might be difficult in the future to have the people and resources to handle those challenges and to fulfill all, present and future requirements. Further, technology needs to adapt to faster changes and environments while balancing the customer's willingness to pay for it. It is highlighted that in some way the company has to adapt to the changes, but it can also lead it to some extent, especially as partnerships in particular become more and more important. One interview partner recognizes a challenge or threat in the case-company's production dependence on global supply chains which have proven to be fragile to some extent during the covid crisis.

4.5 Chances and limitations facing sustainability issues with entrepreneurship

Here, data with regard to the case-company identifying chances and limitations of entrepreneurship within organizations answering to sustainability challenges is presented.

4.5.1 Chances

Facing strong sustainability requirements, especially in climate, resources, and materials is leading the company to buildup innovations and explore new ideas. According to some respondents, this is the driver for innovation and change, as entrepreneurship is a driver to move forward to become more sustainable. Moreover, most respondents see chances of entrepreneurship within organizations for identifying and exploiting opportunities that arise from changing demands and new technological possibilities. Another positive factor can be research and development as well as data-driven statistical insights generated by entrepreneurial initiatives within an organization. Some interviewees see more opportunities in investing in new technology on a bigger management scale, while on the small employee scale, sustainability challenges may be too



encompassing to be answered with individual entrepreneurship alone. Other interviewees regard the involvement of every single employee as the most important. Everyone must understand the motivation and need for it and further must accept and commit to the journey to change. However, the participants add that the conditions and structures in the company must allow the people to change.

One respondent from a higher position sees chances and possibilities of answering sustainability challenges with entrepreneurship both on organizational structure as well as on individual level. He sees the most chances in the dynamic and mutually trusting relationships between single employees, lower levels, middle management, leading positions and higher management. For another employee, it is important that everyone in a company gets room for developing ideas and solutions related to sustainability. This respondent shares the opinion about entrepreneurship being beneficial and dependent on the mutual relationship between top management and a single employee. The focus in this connection should be put on the top management where the vision is established, as well as on each individual employee who will bring the answers to the vision, and less on the middle management. The middle management should further concentrate on facilitating the connection between top management and employees as well as supporting and providing the resources needed because the middle management is not directly working on the answers. One more interviewee claim that entrepreneurship within organizations lies in the bottom-up and top-down connection of the overall organizational structure, strategy and higher management and the individual employee level.

4.5.2 Limitations

There is currently a strong need for change, but the traditional, conservative environment and the big company size are limiting the company in its speed to change and to become more change-oriented. The traditional company culture together with doing things in a specific way, in certain areas like finance, and built-in-resistance through specific requirements are restraining the company from change. At the same time, some interviewees think that individual intrapreneurship has the lowest chances of success because of the overwhelming guidelines the size of the case-company brings. However, other respondents deem corporate entrepreneurship on a strategy and management level to be least promising because they are hesitant to implement change as



they think this is followed by instability and insecurity. One interviewee from a lower position sees more limitations than chances, for example, that external regulations and company internal policies limit the possibilities of getting creative and fundamentally innovative. There are also a lot of old and over the time grown structures and processes that every entrepreneurial initiative needs to adapt to, which may be a challenge when aiming to implement holistic sustainability-aimed innovation. Due to the very competitive field the company operates in, the practical considerations of being profitable inhibit entrepreneurship from addressing sustainability issues: For example, aspects such as the transportability of the product, existing manufacturing processes, or the robustness to fulfill the customer's demands hinder entrepreneurship to address sustainability in the case company in a fundamental, cross-functional and company-wide way.

Another respondent from a leading position sees the root of entrepreneurship in trusting relationships. Therefore, the interviewee sees limitations for it in the management if it does not believe and trust in the autonomy of the employees. Further challenges are seen in higher management where a clear picture of how things are done is generated, but it is noted that higher management is not working at the base. Hence, it occurs that decisions for specific technology are being made, but those might not be the right ones according to people working on the base. Another limitation is claimed by a respondent from a lower hierarchical position, where time and other resources might also limit entrepreneurship in organizations answering to sustainability because of resource scarcity or inaccessibility.

5. Analysis

In this chapter, we analyze the above presented empirical data with the help of prior literature findings (see figure 2) and by relating back to our conceptual model (see figure 1). In the first part, we concentrate on answering our first research question by analyzing the data with regard to defining both corporate entrepreneurship and intra-preneurship in different aspects. These consist of leadership and management issues, organizational environment and industry issues as well as individual traits, attitudes, values and behaviors. Further, the first analysis chapter is about organizational traits as well as structures, outcomes and purposes of both corporate entrepreneurship and



intrapreneurship. The first analysis chapter about theoretical definitions ends with a short interim conclusion and an updated conceptual model, where we incorporate our analysis findings and where we promote a new term for describing entrepreneurship within organizations: corporate intrapreneurship. In the second analysis part, we focus more on our second research question. There, the empirical implications and the potentials and limitations of entrepreneurship within organizations, corporate intrapreneurship as well as of our updated conceptual model with regard to a sustainability context are analyzed.

5.1 Theoretical definitions

In this section, the analysis takes place to answer the first research question “How can intrapreneurship and corporate entrepreneurship be defined and clarified against each other in the context of sustainability?”. To do so, the empirical findings are compared to the theoretical findings from the literature review and the literature summary table in order to find the most important overlappings and discrepancies with the already existing research in this field. This ultimately results in an updated conceptual model, where the analysis findings are accumulated and discussed in a theoretical contribution of this thesis.

5.1.1 Leadership and management issues

When it comes to the leadership and management implications of both intrapreneurship and corporate entrepreneurship, it could be observed in the case-company that managers encourage entrepreneurship among their employees, motivate employees and champion ideas to top management. Also, managers identify, acquire and deploy necessary resources to pursue entrepreneurial opportunities as it is pointed out in the literature. However, this also greatly depends on the idea-owner’s abilities to sell their entrepreneurial initiative to convince higher management of the economic value of the idea. Moreover, prior research evaluated rewards and recognition for entrepreneurship activities as well as the existence of a culture of trial and error, experimenting and continuous improvement to be crucial for intrapreneurship and corporate entrepreneurship (Urbano et al., 2022; Pirhadi & Feyzbakhsh, 2021). All these aspects could be found in the case-company. Therefore, the majority of the overlapping characteristics



of both concepts can be confirmed with this thesis, while the role of the single employee in relation to management can be deemed to be more important, active and influential than as stated in prior research.

In the case of intrapreneurship, it is difficult to confirm the important role of leadership and management issues, because the case-company does not have a homogeneous leadership style throughout the company. The leadership style is more dependent on personal attitudes, personalities and preferences of single managers. The fact that intrapreneurial initiatives happen in all departments and on different hierarchical levels, even though the leadership style in the case-company is varying, leads to the assumption that the management or leadership style is of lower importance for intrapreneurship than stated in the literature (Perlines et al., 2022; Blanka, 2019). In contrast, the trusting relationship between employee and manager, the transparent communication of organizational strategies to employees, the support of knowledge-sharing and joint idea generation can be observed to be actively supported in the case-company to foster innovation and intrapreneurship. Therefore, these can be deemed to be important aspects for understanding the concept of intrapreneurship in the case-company.

For corporate entrepreneurship, prior literature defines the following aspects as detrimental to the concept: managers being involved in corporate venturing, time for employees to follow personal ideas, unidirectional and joint work of departments and hierarchical levels and a participatory, risk-taking and proactive leadership style (Urbano et al., 2022; Pirhadi & Feyzbakhsh, 2021). As stated before, the importance of leadership styles can be argued to be questionable, while corporate ventures are a strong example of corporate entrepreneurship in the case-company. The same can be said about employees having sufficient time to follow their ideas because it could be observed frequently that time was the scarcest resource for employees with new ideas. Often, in the empirical data it was stated that more time availability would be favorable for being even more innovative, which underlines the importance of this aspect for understanding and fostering corporate entrepreneurship. An aspect that has not been mentioned in prior research is the importance of filing patents, cross-functional collaboration and inter-organizational partnerships. Because in the case-company, it can



be observed that all these aspects play a huge role in corporate entrepreneurship activities, we argue to take these points more into consideration when conceptualizing corporate entrepreneurship with regard to management issues.

5.1.2 Organizational environment and industry issues

For defining both intrapreneurship and corporate entrepreneurship with regard to organizational environment and industry issues, prior research identified a dynamic market, technological change, industry growth and a demand for new product (Negasa et al., 2022; Gasbarro et al., 2017). All these aspects can be observed in the case-company's market environment and industry. For example, the industry being in a radical change from conservative to dynamic due to the rising sustainability challenges and expectations from various stakeholders is a reoccurring theme in the data. It is striking that in all of these aspects, sustainability seems to be the root of changing technology and demands: Technology changes because various intrinsic, economic, regulatory and social incentives to develop sustainable technological innovations exist.

Prior research states that intrapreneurship can be understood best by looking into creative and technological business areas, business-to-business opportunities and knowledge-intensive organizations (Perlines et al., 2022; Blanka, 2019). This can be confirmed in this thesis, as the case-company shows intrapreneurship activities while being located in the heavy machinery industry. This implies the technological nature of the case-company's operation, the knowledge-intensive type of work activities that are required to manufacture these highly technological products and the business relations that are required to sell the products, as they are not purchased by private persons. What is not recognized in prior literature is how big the industry change is, how fast the change takes place, if it only affects part of the industry or all across, to which extent the organization is linked with subsidiaries or mother companies and in what direction the industry change happens. We find that all these aspects play an important role in understanding intrapreneurship in the case-company, which means that they should be considered more in intrapreneurship definitions that aim at including the organizational environment and industry characteristics.

In the case of corporate entrepreneurship, we can only agree to prior research in so far as an environment with intensive challenges is an important aspect of that concept (Negasa et al., 2022; Gasbarro et al., 2017), as it manifests in the case-company in



growing technological challenges and in changing external requirements due to sustainability challenges. While we also acknowledge that a heterogeneous and complex organizational environment is important for understanding corporate entrepreneurship, it is questionable what degree of heterogeneity and complexity is meant. Therefore, this aspect cannot be evaluated for the case-company here. However, the literature also mentions that competitive intensity and hostility are a central part of corporate entrepreneurship measures (Urbano et al., 2022; Pirhadi & Feyzbakhsh, 2021). In the case-company, we could only observe competitive intensity, because the low numbers of sold products as well as balancing the growing sustainability requirements with keeping the reliability and quality of the product lead to intensive long-term competition in the industry. The aspect of hostile market environments cannot be confirmed in this thesis, because the existence and further development of inter-organizational partnerships, knowledge exchange between market actors and joint innovation activities point in another direction.

5.1.3 Individual traits, attitudes, values and behaviors

In the literature, different individual traits are deemed to be important for both intrapreneurship as well as corporate entrepreneurship. For example, those traits and behaviors include the ability of opportunity recognition, pursuit and exploitation as well as entrepreneurial and professional experience. Other characteristics are proactiveness, initiative- and risk-taking, creativity, self-efficacy, autonomy, freedom and ownership of decision-making, self-confidence, being innovative, open to change, ambitious, motivated and orientated to achievement. Furthermore, being committed to the job and organization and applying knowledge and skills across organizational boundaries is what characterizes intrapreneurial and corporate entrepreneurial behavior (Ren & Jackson, 2020; Urbano et al., 2022; Pirhadi & Feyzbakhsh, 2021). All these aspects could be found in the entrepreneurial activities of the case-company, but the most important seems to be acting cross-organizational because the development of inter-organizational partnerships often plays a deciding role in the success of entrepreneurial initiatives. Moreover, ownership, being innovative and opportunity recognition could be observed to play a major role in the case-company. Also, freedom and autonomy are central aspects, but in the case-company, the degree of freedom and autonomy changes significantly depending on the hierarchical level of the employee: Employees



from higher management and leading positions state that they have sufficient freedom to follow innovation and ideas, while most employees from lower positions without leading responsibilities wish for more autonomy, because they as well regard it as crucial for entrepreneurial initiatives within the case-company.

When it comes to intrapreneurship, more traits are identified by the literature to be important for defining what intrapreneurship is: being competitive and persistent, thinking out-of-the-box, growth-orientation, extraversion, altruism, optimism as well as brokering and championing competencies (Provasnek et al., 2016; Perlines et al., 2022; Blanka, 2019). Out of these traits, only the brokering and championing competencies as well as the out-of-the-box thinking can be deemed to be definitely relevant for understanding intrapreneurship in the case-company. Both abilities are needed for selling the idea to higher management and other employees in order to get access to resources. Those traits are also necessary for answering sustainability challenges with the help of intrapreneurially rooted innovation in the case-company. All other characteristics could not be observed to an extent that would make them central to intrapreneurship in this study. The literature also claims that an intrapreneur is a combination of thinker, doer, planner, and worker, who shows bootlegging behavior and who actively links strategic vision and operational action (Blanka, 2019; Zhu et al., 2014). This variety of roles that an intrapreneur can enact can also be observed in the case-company, where some respondents from higher positions showed this kind of behavior to act upon complex and dynamic sustainability challenges in order to turn them into business opportunities. To do so, according to prior research, intrapreneurs need to possess general human capital, potential knowledge, a personal network and social capital (Perlines et al., 2022; Blanka, 2019). We cannot necessarily observe that the respondents already have this kind of potential when starting to act intrapreneurially, but if not, they develop these networks and abilities while developing their intrapreneurial initiatives as the need arises. Consequently, these aspects are important for the concept of intrapreneurship, but a process-based and need-based perspective needs to be added in order to make these aspects more relevant for different situations.

In the case of corporate entrepreneurship, the concept is defined by individuals having a high education, high cognitive and metacognitive intelligence as well as having autonomy, budget, and time to follow their own business ideas (Urbano et al., 2022;



Pirhadi & Feyzbakhsh, 2021). In the case-company, it can be confirmed that corporate entrepreneurs are often highly educated people with a high degree of intelligence, but what we can add to this is that most corporate entrepreneurs invest in lifelong learning and in advancing personal relationships in order to keep up with for example new technological developments, industry trends, sustainability-related issues, changing stakeholder expectations and transforming customer needs. Having autonomy, budget and time to follow own business ideas can also be deemed to be crucial for understanding and fostering corporate entrepreneurship, although, in the case-company, the degree of autonomy, budget and time allocation decrease the lower the position of an employee. This can make it hard to grasp the full innovative potential of the whole workforce. The second main literature claim says that although the corporate entrepreneur takes control and responsibility, it is the organization that mainly bears failures (Urbano et al., 2022; Pirhadi & Feyzbakhsh, 2021). In the case-company, this is only true for innovations with low impact or in early development stages. For ideas with a greater scope or in later stages of implementation, the failure tolerance is lower and often the ownership for these ideas shifts from the initial employee to the company, especially when the idea leads to filing a patent. Once again, here this notion needs to be widened and opened up in order to reflect business reality in a better and more holistic way in the overall definition of corporate entrepreneurship.

5.1.4 Organizational traits and structures

For both intrapreneurship and corporate entrepreneurship, the literature states that high investments in research and development as well as the presence of entrepreneurship aimed education and training are important characteristics (Youssef et al., 2018; Brandi & Thomassen, 2020). The case-company is involved in a variety of research and development activities, such as the advanced engineering department, innovation coaches, the innovation lab, inter-organizational collaborations and partnerships with academic research in universities. Moreover, education and training play an important role in the case-company, although it is not directly linked to entrepreneurship itself, but more to innovation, new technologies and idea management. Thus, it can be said that high engagement in research and development and entrepreneurship-aimed training is given in the company. Both aspects play an important role in the general innovation activities, idea generation and opportunity management in the case company.



Therefore, these notions can be deemed to be central for intrapreneurship and corporate entrepreneurship in the realm of organizational traits and structures.

Additionally, prior research identified that reduced hierarchy and bureaucracy, high degrees of horizontal and diagonal interaction as well as multicultural and diverse team composition are important to understanding and researching corporate entrepreneurship and intrapreneurship (Hübel, 2022; Ren & Jackson, 2020; Pirhadi & Feyzbakhsh, 2021). We could observe a particularly high degree of interaction and participation between different hierarchical levels, departments and even companies. As this is also observed to be detrimental to the innovation activities in the case companies, it can be noted that this indeed plays an important role in entrepreneurship within organizations. However, the case-company itself is in a transitional state from a quite formalized and hierarchical structure to a more flat and informal type of organization. Also, it is aimed to have more diverse and multicultural teams and some measures to achieve this have been implemented in the case-company, but there is still a far way to go. This has to do with the reduced availability of a diverse workforce in the technological and still quite traditional context where the case-company operates. But, on the other hand, diversity is still only flatly understood as gender diversity by many case-company employees. At the same time, the current status of both of these aspects is recognized by the case-company as hindering them from being even more entrepreneurial and that further development in these areas would improve their innovative force significantly. Therefore, it can be concluded that diverse teams as well as informal and flat structures are indeed important for understanding and fostering intrapreneurship and corporate entrepreneurship.

When it comes to intrapreneurship alone, literature underlines that, in the realm of organizational structure, processes and structures that allow autonomy in employee decision-making and broadly defined jobs are important notions (Perlines et al., 2022; Blanka, 2019). Both of these aspects are only given to a certain extent in the case-company: for example, it is observed that only higher positions have a great amount of autonomy and broadly defined profiles. Lower positions often do not have that amount of autonomy and broadly defined tasks, but because of the different tools the case-company provides for fostering innovation and ideas, this does not hinder the case-company from being entrepreneurial in every hierarchical level. On the contrary,



it can even be claimed that the intrapreneurial activity, that comes from the high degree of cross-functional collaboration between specialized individuals with a clearly defined task range, would not be possible if the lower-positioned employees had the same amount of autonomy and varying tasks like employees from management. Consequently, broadly defined jobs and autonomy are important aspects for understanding and fostering intrapreneurship, at least in higher hierarchical levels, but if these aspects are not given, they can be replaced by equally or even better functioning organizational structures and traits. Thus, the described aspects are not decisive when trying to understand organizational structures and traits that nurture intrapreneurship.

In the realm of corporate entrepreneurship, prior research identifies resource availability and accessibility, corporate venturing units and decentralization through delegation of authority to be central to understanding the concept (Urbano et al., 2022; Schönwälder & Weber, 2022). All these aspects can be found in the case-company, but only to a limited extent: resource availability and accessibility depend on the type of needed resource, there exist only some corporate venturing cases where no special department for doing so is present and the delegation of authority only involves higher and middle management, while it does not involve employees without leading responsibilities. On the other side, the literature also states that an organization needs to be growth-based, dynamic, flexible, risk-accepting and acknowledging uncertainties (Lu et al., 2022). This is also only partly the case in the case-company, because the case-company is on a transformation path to achieve exactly these traits. For all these corporate entrepreneurship aspects, corporate entrepreneurship seems to be more a tool to achieve them and not vice versa, namely these notions being central to understanding corporate entrepreneurship. According to research, innovative and competitive aggressiveness, an agile reaction to market changes and unconventional competition methods are also important for understanding corporate entrepreneurship (Pirhadi & Feyzbakhsh, 2021). Apart from the innovative and competitive aggressiveness, none of these characteristics can be observed in the entrepreneurially active case-company. This is because of the case-company reacting slowly to market changes, which is why it tries to forecast future market developments, and because of the still traditional and conventional nature of its competitive advantage lying in the reliability and quality of its products. This leads to the realization that these characteristics are only marginally important for understanding corporate entrepreneurship.



5.1.5 Outcomes and purposes

For both intrapreneurship and corporate entrepreneurship, prior research has identified the following central aspects in the realm of outcomes and purposes: innovation and value generation, opportunity recognition and exploitation, organizational survival and renewal, better adaption to fast-changing or hostile environments, creation of new companies, new revenue streams as well as improved growth, survival and performance (Niemann et al., 2019; Blanka, 2019). Apart from the creation of new companies, which exists but is not central in the case-company being entrepreneurial, most of these aspects can be observed to be central for the entrepreneurial activities in the case-company as it adapts to the changing requirements, demands and expectations that come from sustainability challenges. For example, customers demand products with reduced or even zero emissions, society expects companies to generally act upon sustainability problems and governments require compliance with sustainability-related policies and regulations. Thus, especially in a sustainability context, these characteristics can be confirmed to be central to understanding corporate entrepreneurship and intrapreneurship in the realm of outcomes and purposes.

In the case of intrapreneurship's outcomes and purposes, literature recognizes the generation of jobs, the increased growth of smaller companies and the empowerment of employees in developing intrapreneurial traits (Perlines et al., 2022; Blanka, 2019). Due to the lack of autonomy in lower positions, the latter can only be confirmed for higher positions in the case company. But at the same time, with our current understanding of intrapreneurship and corporate entrepreneurship, intrapreneurial traits being mostly located in higher hierarchical levels makes it difficult to distinguish from corporate entrepreneurship. Thus, a weakness of the current definition approach of both concepts as being mainly differentiated by their top-down- or bottom-up approach can be identified when taking insights from the case-company into account. When it comes to the outcomes of intrapreneurship being job-generation and growth of smaller companies, these are also hard to argument for with our case-company. The reason for this is that no account of intrapreneurially generated positions can be found in the empirical data and due to the case-company being a well-established and big company, the growth of smaller companies coming from intrapreneurship cannot be evaluated in this thesis. Hence, the importance of job-generation and intrapreneurial empowerment



of employees for understanding intrapreneurship is questionable, while the growth of smaller companies is not possible to evaluate with the chosen case-company.

For corporate entrepreneurship, prior research identifies many different outcomes and purposes. One group of them is improved organizational competitiveness, proactiveness and risktaking as well as the generation of new resource combinations (Urbano et al., 2022; Pirhadi & Feyzbakhsh, 2021). All of these can be also identified in the case-company, especially sustainability-related innovations, where the case-company is very active in, lead to new technological combinations, pro-active product development by demand forecasting and improved competitiveness by tapping new customers by expanding the product range to sustainable solutions. Coming from this, the case company also shows the in the literature stated strategic renewal, sustained regeneration, domain redefinition and organizational rejuvenation, which helps the case company to achieve organizational superiority over competitors through internal change and innovation. Another group of already researched outcomes of corporate entrepreneurship encompasses improved knowledge acquisition and revitalization, improved organizational learning as well as process and service innovations (Niemann et al., 2019; Youssef et al., 2018; Schönwälder & Weber, 2022; Provasnek et al., 2016). Examples for these aspects in the empirical reality of the case-company can be found in the extensive external and internal partnerships, collaborations and knowledge exchanges that are an inherent part of the case-company's innovation activities. Hence, all of the above-mentioned characteristics that prior research identified to be central for corporate entrepreneurship purposes can be confirmed in the case-company. Another set of already researched corporate entrepreneurship outcomes can be identified in the case-company: reaching strategic and financial goals, setting standards and promoting products (Niemann et al., 2019; Urbano et al., 2022; Pirhadi & Feyzbakhsh, 2021) is especially achieved in the sustainability-related product innovations, because they often are the first of their kind in the market and therefore help the company to gain industry-wide attention with the consequently following fulfillment of financial and sustainability-related strategic goals.



5.1.6 Definitions and updated conceptual model

Prior research defines corporate entrepreneurship and intrapreneurship mainly as idea and opportunity exploitation or entrepreneurial activity within an already existing organization that aims at innovation and general improvement of the organization (Perlines et al., 2022; Blanka, 2019; Urbano et al., 2022; Pirhadi & Feyzbakhsh, 2021). While this is exactly what we observed to be empirically realistic in the case-company, the characteristics for intrapreneurship that were defined in the literature can only be confirmed in connection to the main notions of corporate entrepreneurship and vice versa. Intrapreneurship is mainly defined as a bottom-up approach to entrepreneurship within an organization that mainly happens at the individual employee level (Perlines et al., 2022; Blanka, 2019). Corporate entrepreneurship on the other hand is characterized as a top-down approach to entrepreneurship within organizations that mainly takes place at higher managerial or structural levels (Urbano et al., 2022; Pirhadi & Feyzbakhsh, 2021). However, because the majority of the similarities between both concepts and only a minority of the differences could be observed in the analysis, the main contribution of this study to the definitions of intrapreneurship and corporate entrepreneurship is that bottom-up and top-down perspectives on entrepreneurship in organizations are dependent on each other. More so, especially in the context of the case-company within sustainability, they are sometimes even two sides of the same medal. Therefore, our result for the first research question of this thesis “How can intrapreneurship and corporate entrepreneurship be defined and clarified against each other in the context of sustainability?” is that corporate entrepreneurship and intrapreneurship are intertwined concepts that result in and initiate each other. They can only conceptually be divided, and even that needs to be subject to further research, but not empirically in the sustainability context and the operational reality of the case-company. Additionally, in the analysis chapters above, we can mostly confirm aspects to be central for intrapreneurship and corporate entrepreneurship definitions that derive from their conceptual overlappings, while only a minority of the differences between both concepts could be identified.

As corporate entrepreneurship could not be observed without intrapreneurship being in place at the same time and vice versa, and because we mostly confirm the similarities of corporate entrepreneurship and intrapreneurship in the empirical reality of the case-company, we promote an updated conceptual model that takes our findings into



consideration. In this model, we coin the term “corporate intrapreneurship” to reflect the intertwined and interdependent nature of both concepts without losing the different empirically existing hierarchical dynamics in the form of bottom-up and top-down relationships out of sight. The in this thesis found intertwined nature of corporate entrepreneurship and intrapreneurship is represented by the two dashed circles that overlap at the term corporate intrapreneurship. This is the major theoretical contribution of our study.

Around the combination of corporate entrepreneurship and intrapreneurship resulting in corporate intrapreneurship, the aspects we find most important for corporate intrapreneurship in the case-company within a sustainability context are presented. These aspects are innovation, learning, collaboration, initiative, ideas and ownership, and, as we observed in the case-company, they can take form as leadership and management issues, structures and processes, individual traits and behaviors as well as outcomes and purposes. In the case-company’s empirical reality, we also identify the organizational context as mainly consisting of industry issues, societal expectations and trends, economic developments and governmental regulations. These are found to be greatly influenced by sustainability challenges, and they in turn influence the case-company’s organization, also including corporate intrapreneurship and its notions: corporate intrapreneurship activities often and directly address sustainability challenges and organizational environment issues. Similarly, the industry and sustainability contexts can be altered and influenced by corporate intrapreneurship activities. Therefore, these often not clearly separable dynamics and mutual relationships between different sustainability and organizational environment aspects are reflected in the conceptual model by the arrows and by the dashed lines. They represent the complexly intertwined contexts and the not clearly separable notions that influence corporate intrapreneurship and that are influenced by corporate intrapreneurship. They represent the close and mutual relationship we found to exist between corporate intrapreneurship and the surrounding sustainability context as well as industry, society, economy and government.

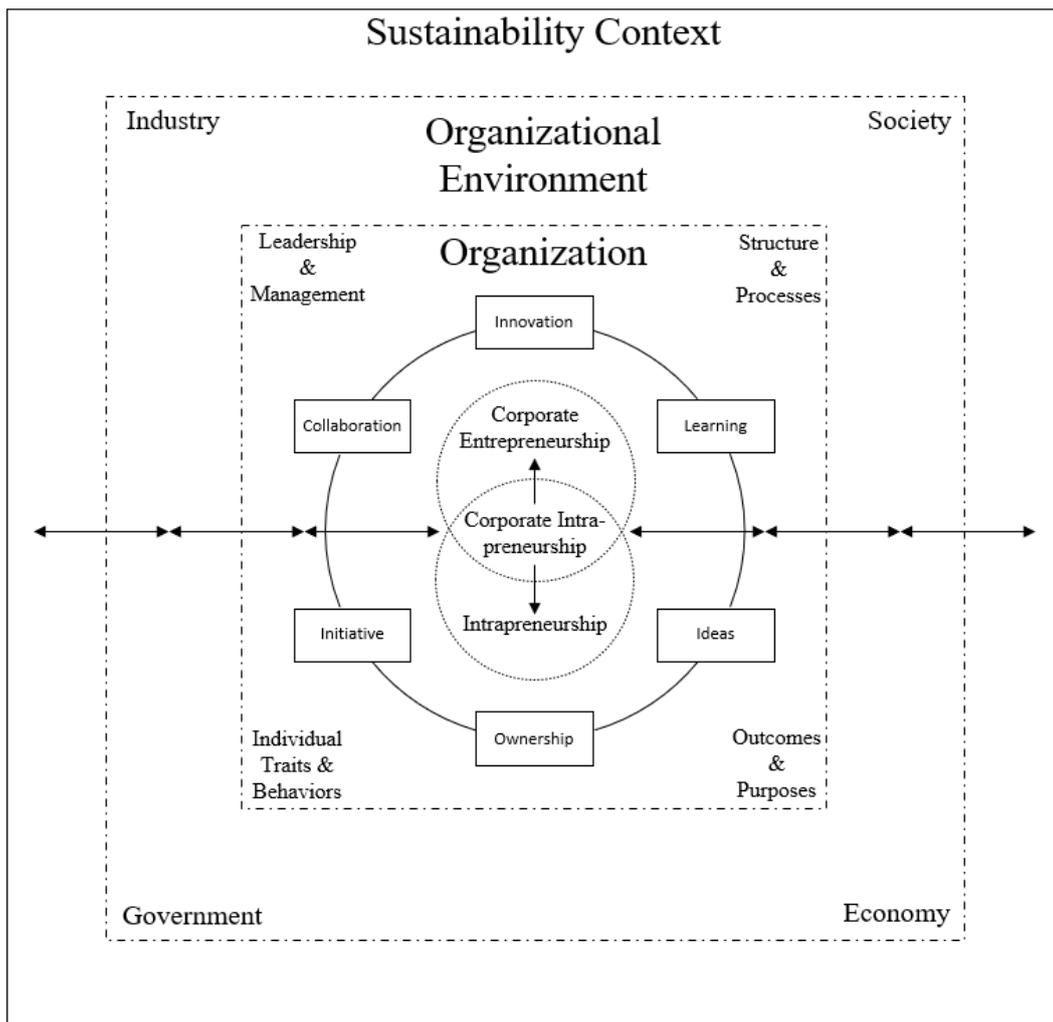


Figure 4: Updated conceptual model

5.2 Empirical implications

In this chapter, the analysis aims to answer the second research question “What are potentials and limitations of intrapreneurship and corporate entrepreneurship in the context of organizational sustainable development?”. Once again, the empirical data is matched with the literature to emphasize the most important potentials and limitations of corporate intrapreneurship as the result of combining intrapreneurship and corporate entrepreneurship in a sustainability context. The analysis in this chapter results in and deals with the empirical contribution of this study.



5.2.1 Potentials of corporate intrapreneurship in a sustainability context

In the face of mounting sustainability challenges, organizations find themselves in a perpetual quest for innovative solutions and adaptable pathways. The prevailing consensus among experts is that entrepreneurship plays a pivotal role in driving sustainable practices forward. Numerous assertions and studies have emphasized the indispensability of entrepreneurial endeavors in achieving sustainability goals. Organizations are better able to deal with the complex sustainability landscape and successfully solve all the challenges it creates by building an entrepreneurial culture. Organizations are increasingly adopting entrepreneurial mindsets, techniques, and projects to pave the path for a more sustainable future as they become aware that conventional ways may fall short in addressing these concerns. Entrepreneurship serves as a powerful catalyst, igniting transformative change, encouraging creativity and experimentation, and fostering the exploration of novel solutions that can drive positive environmental, social, and economic impacts. In this dynamic and ever-evolving landscape, the role of entrepreneurship as a driver for sustainability is widely acknowledged and actively pursued by forward-thinking organizations across various sectors and industries.

The existing literature emphasizes the promising potential of sustainable corporate entrepreneurship as a means to facilitate transformative processes within companies and overcome market barriers, thereby supporting the advancement of sustainable innovations (Provasnek et al., 2016). This notion is exemplified through the ongoing transformation process observed in the case company, wherein a notable shift from a previously conservative stance to a more dynamic and innovative approach is being witnessed in practical terms.

Moreover, the literature provides a comprehensive assessment of the effective implementation of sustainable innovation through the utilization of sustainable corporate entrepreneurship in a conservative context. The findings indicate that sustainable entrepreneurs have been successful in generating sustainable innovations, particularly in situations where the adoption of disruptive technologies is impeded by entrenched institutional barriers (Gasbarro et al., 2017). Through a detailed examination of the case-company, it was discovered that proactive employees in leadership positions, acting as intrapreneurs, played a pivotal role in driving change. As a noteworthy example, these



individuals were instrumental in successfully implementing a novel, innovative, and sustainable construction machine that was developed entirely from scratch.

On the other hand, it has been observed that employees who do not hold leadership positions in the company often express a lack of time and resources necessary to engage in intrapreneurial activities, despite the company providing the infrastructure and employing innovation coaches. The literature further unveils the significance of incorporating organizational learning into the maintenance of corporate entrepreneurship, as it can foster sustainability practices within organizations (Brandi & Thomassen, 2020). An exemplification of this principle can be found in the case company's establishment of a "group university," which serves as a compelling demonstration of their commitment to cultivating an environment conducive to innovation through continuous learning.

However, the literature delves even deeper by introducing a conceptual model that addresses one of the most significant challenges faced by the corporate world today: how to educate employees about sustainability and seamlessly integrate it into daily operations (Brandi & Thomassen, 2020). In the case-company, this obstacle becomes particularly apparent, especially given its conservative industry setting. Nevertheless, notable strides have been made in sensitizing both employees and customers through the development of groundbreaking technologies, such as the first autonomous electrified lorry and the introduction of a hydrogen-powered articulated hauler to the market. These accomplishments not only impact the company itself but also reverberate throughout the entire industry, highlighting the potential of such initiatives to create a ripple effect.

Moreover, multiple employees from the case company have emphasized that new technological possibilities and evolving demands are catalysts for identifying fresh opportunities, which can be effectively harnessed through entrepreneurial endeavors. Previous research has established that cross-functional collaboration, particularly between sustainability managers and corporate venture experts, bolsters the emergence of radical sustainable innovations (Schönwälder & Weber, 2022). While the case company does exhibit elements of cross-functional collaboration within specific work areas across the company group, collaboration with sustainability managers is relatively less explicit.



Furthermore, the literature findings underscore the interconnectedness between a company's overall innovation readiness, its strategic outlook, and its internal corporate entrepreneurship maturity level. This linkage implies that an organization's ability to foster a culture of innovation and align it with its strategic objectives is crucial in driving sustainable innovation initiatives (Schönwälder & Weber, 2022).

Different research further revealed various approaches that can encourage intrapreneurship within an organization. These include, besides establishing an innovative culture, receiving support from leadership, and fostering collaboration between different departments (Berzin et al., 2016). The case company's effort to encourage employees and to move its leadership style towards being more people-oriented, especially in advanced engineering and innovation department is hereby an appropriate approach as indicated by the literature. As the literature further exposes, in the long term, intrapreneurship involves finding a balance between taking risks and ensuring the delivery of stable and reliable products or services. Therefore, encouraging employees to be innovative, in other words risk taking to a certain, healthy level as well as providing them with the resources needed is essential in order to foster intrapreneurship (Pellegrini et al., 2019). The role of middle management becomes, with this means, very important. Most participants from the examined company expressed consensus regarding the organization's inclination towards facilitating the decision-making process characterized by high levels of autonomy. However, it was observed that the company's tolerance for failure is restricted to a relatively narrow scope due to a fear of survival and loss of quality and profitability.

Additional literature findings by Criado-Gomis et al. (2018) have shed light on the correlation between the degree of sustainable entrepreneurship adoption within a company and the subsequent development of its business performance. It has been consistently demonstrated that as organizations embrace sustainable entrepreneurship more extensively, they tend to experience improved business outcomes. Of particular significance is the emphasis on intrapreneurship, which has been found to exert a positive influence on both green innovation and entrepreneurial orientation within companies (ibid.). In the context of the case company, this connection is particularly evident with regard to the positive impact of intrapreneurial initiatives on green innovation practices.



Earlier research revealed that implementing intrapreneurial initiatives can result in better outcomes for clients, increased revenue, and an improved reputation for the organization (Berzin et al., 2016). While the existing literature has helped us understand the connection between corporate entrepreneurship respectively intrapreneurship and sustainability, we think future research would benefit from going even further and investigating the broader entrepreneurial outcomes and their subsequent impact on overall business performance. As a result, organizations would be better able to make informed decisions and create focused strategies to promote sustainable growth and success if they had a more nuanced understanding of the interactions between sustainable entrepreneurship and business performance. Therefore, in the context of sustainable corporate entrepreneurship respectively sustainable intrapreneurship, we encourage future research to expand its focus and investigate the entrepreneurial outcomes and their wider impact on the whole business performance.

5.2.2 Limitations of corporate intrapreneurship in a sustainability context

The limitations of intrapreneurship and corporate entrepreneurship in the context of organizational sustainable development can be attributed to several factors. Firstly, the case company defines entrepreneurship mainly as a synonym for innovation. When conducting the interviews, it became clear that most of the interviewees would talk about innovation when talking about corporate entrepreneurship and intrapreneurship. As some of the participants who were from the higher management as well as the company's online presentation claim that innovation is highly prioritized and supported, other non-management respondents stated that ideas from employees often would not be entered on the company's innovation platform, mostly because of a lack of time and not being inspired or motivated to do so. Many ideas would then not be further followed and stay with the employees and their surroundings. On the other hand, an intrapreneurial approach has been proved when employees have successfully introduced ideas that have even been patented, without even using the company's innovation platform. This though is an exception rather than a rule. It can be argued that in general innovations are supposed to be escalated on the innovation platform, and therefore, we clearly see a limitation towards entrepreneurial behavior.

As earlier research by Schönwälder & Weber (2022) revealed there is a correlation between a company's innovation strategy and the extent to which sustainable corporate



entrepreneurship is implemented. Moreover, the collaboration between venture specialists and sustainability managers appears to enhance the likelihood of developing radical innovations for sustainability. This collaborative effort further facilitates the potential of sustainability transitions.

The fact that the case company does not have a specific department for entrepreneurship leads to the assumption that a company-internal strategic focus on Sustainable Corporate Entrepreneurship is not well elaborated. According to Schönwälder & Weber (2022) specifically, organizations that have dedicated entrepreneurship units demonstrate a greater focus on sustainable corporate entrepreneurship.

One interview partner with no management position perceives entrepreneurial activities primarily at the company strategy and management level rather than at the individual employee level. This perspective stems from the strong influence of the case company's strategic goals, which heavily shape the desired types of innovations. This goes along with the study by Hübel (2022). The author's findings indicate that the explicit and shared sensemaking among top and middle managers regarding structural and cognitive aspects can facilitate the alignment of their divergent "sensemaking paths" and contribute to effectively managing and expediting organizational transformation for sustainability (ibid.) A respondent in a managerial position shares this viewpoint, emphasizing that entrepreneurship is primarily a company strategy. However, the management does not actively engage with it due to a perceived lack of necessity to adapt their positions or a fear of failure and risk-taking. Despite this, there are numerous individuals within the company who are willing to take risks, but often feel a lack of sufficient encouragement from management. Niemann et al. (2019) claim when integrating corporate entrepreneurship and sustainability initiatives, it is crucial to consider the level of environmental orientation within the organization. In order to successfully implement sustainable practices, a strategic refocus and prioritization of organizational learning and corporate entrepreneurship theories and practical recommendations are necessary (ibid.). One interviewee further adds that most of the company's production is currently driven by commercial and profit-oriented motives, with only a small portion dedicated to incorporating sustainability aspects through changing and



adapting technology. However, the company claims and aims to achieve a more balanced approach in the future, where equal importance is given to both profit-oriented production and sustainability-driven technology development.

The company's commitment to science-based targets and sustainable product innovations is considered essential for maintaining a competitive advantage and advancing technologically. However, it is crucial for these innovations to align with market demands to prevent any contradiction between sustainable and economic goals. Across participants and hierarchical levels, it is stressed that the company faces a complex situation. It must anticipate market demands, adapt to them, and develop new technologies in advance, making it challenging to strike a balance between sustaining profitability from current production and investing in new technology to meet future market needs and external requirements.

Several studies and authors have emphasized how crucial it is for leaders to be committed to fostering sustainable innovation, as well as how important employee engagement and a positive organizational culture are (Pellegrini et al. (2019), Brandi & Thomassen (2020) & Berzin et al. (2016)). If this culture is not “lived” within the company on both sides, corporate entrepreneurship and intrapreneurship will be limited in their mission toward sustainable development. As Brandi & Thomassen (2020) claim, understanding and characterizing the organizational learning and corporate entrepreneurship processes are essential in order to effectively comprehend and create change with sustainability as the goal.

As previously mentioned, and in accordance with our updated conceptual model, the concepts of corporate entrepreneurship and intrapreneurship are interconnected and correlated. In order to enhance the outcomes of both concepts and to overcome the limitations, it is essential to acknowledge that organizational leadership and management, alongside a company's structure and processes, must incorporate and take into account individual traits and behaviors. It is crucial to recognize that these organizational forms, encompassing aspects of innovation, learning, collaboration, initiative, ideas, and ownership, collectively shape the concept of corporate intrapreneurship that we have developed in this thesis. Comprehending this notion aids in gaining a deeper understanding of entrepreneurship within a corporate context, particularly with regard



to external factors like sustainability. Consequently, it facilitates the targeted application of entrepreneurship within companies. In the empirical reality of the case company, we also identify the organizational context primarily comprising industry issues, societal expectations and trends, economic developments, and governmental regulations.

5.2.3 Summary of Potentials and limitations of corporate intrapreneurship in a sustainability context

To address the second research question “What are potentials and limitations of intrapreneurship and corporate entrepreneurship in the context of organizational sustainable development?” the potentials and limitations have been elaborated in sections 5.2.1 and 5.2.2.

The findings reveal that entrepreneurship plays a pivotal role in driving sustainable initiatives and innovations. Organizations are increasingly embracing entrepreneurial mindsets and endeavors to navigate the complexities associated with sustainability. The case company exemplifies this shift towards a more dynamic and innovative approach to sustainability. Existing literature highlights the potential of sustainable corporate entrepreneurship in facilitating transformative processes and overcoming market barriers for sustainable innovations. Moreover, it underscores the significance of organizational learning in fostering sustainable practices. The case-company's establishment of a "group university" serves as an illustrative example of creating an environment conducive to innovation through continuous learning. The literature further explores the challenge of integrating sustainability into daily operations and educating employees about sustainability. The case company faces additional obstacles in this regard due to its conservative industry setting. Nevertheless, the company has made significant progress in raising awareness among employees and customers through groundbreaking technologies. Collaboration, particularly between sustainability managers and corporate venture experts, is found to enhance the emergence of radical sustainable innovations. While the case company demonstrates elements of cross-functional collaboration, the explicit collaboration with sustainability managers is relatively limited. The literature findings also highlight the interconnectedness between a company's overall innovation readiness, strategic outlook, and internal corporate entrepreneurship maturity level. This suggests that fostering a culture of innovation



aligned with strategic objectives is crucial for driving sustainable innovation initiatives.

The limitations of intrapreneurship and corporate entrepreneurship in the context of organizational sustainable development are discussed. These limitations include a lack of explicit focus on sustainable corporate entrepreneurship, limited engagement-opportunities for non-management employees, and the challenge of balancing profitability and sustainability-driven technology development.

Corporate entrepreneurship and leadership commitment, intrapreneurship and employee engagement, as well as a positive organizational culture are identified as crucial factors for fostering sustainable innovation and development. Understanding and characterizing organizational learning and corporate entrepreneurship processes are seen as essential for driving change towards sustainability.

In general, this section contributes to the advancement of our conceptual model of corporate intrapreneurship by shedding light on the interconnectedness between corporate entrepreneurship and intrapreneurship in the context of organizational sustainable development. Furthermore, by emphasizing the significance of considering individual traits and behaviors in the decision-making processes of organizational leadership and management, as they navigate the complexities of industry challenges, societal expectations, and economic developments.

5.3 Summary and conclusion

With this thesis, we aimed to make a theoretical and conceptual contribution to how corporate entrepreneurship and intrapreneurship can be defined and what characteristics are crucial for distinguishing both concepts before a sustainability background. Our goal was also to make an empirical contribution by exploring what aspects of intrapreneurship and corporate entrepreneurship can be found in the practices, processes and everyday operations of organizations to help the company in answering sustainability challenges. To fulfill these two goals, we established the two research questions:

- 1) How can intrapreneurship and corporate entrepreneurship be defined and clarified against each other in the context of sustainability?



- 2) What are potentials and limitations of intrapreneurship and corporate entrepreneurship in the context of organizational sustainable development?

For the first research question, we conclude that the separation of corporate entrepreneurship and intrapreneurship is not sensible in a dynamic, complex and all-encompassing sustainability context. Therefore, we argue for the new term “corporate intrapreneurship” to reflect the strong evidence for the close connection between both concepts in a sustainability context. For the second research question, we argue that intrapreneurship and corporate entrepreneurship have great potential to help organizations in answering sustainability challenges, while also having some limitations. However, here again the most important potential lies in connecting both concepts practically due to sustainable development within organizations being a highly complex and ever-changing subject. This makes an integrated and holistic approach in the form of corporate intrapreneurship also practically relevant.

Of course, there are some limitations to these findings that offer new ways for further research. Most importantly, our newly developed concept of corporate intrapreneurship needs to be backed with further evidence from different national, cultural, economic and societal contexts as well as with perspectives from other disciplines, methods and research traditions. In this regard, it would be interesting to explore whether our findings can be reproduced in other contexts. Especially the confirmation of corporate intrapreneurship and of our conceptual model in other case-companies is needed in order to add more reliability, applicability, depth and details. Other aspects for further research in this realm would be to apply other qualitative methods or quantitative approaches to gain further insights. Moreover, our research needs to be complemented with insights from other knowledge traditions and research cultures such as innovation studies, organizational theory, leadership studies or cultural studies to deeply explore the aspects we found to be most important in understanding corporate intrapreneurship.



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Appendix: Interview guide

Introduction

- Can you tell us something about your position and responsibilities within your organization?
- What does entrepreneurship (in organizations) mean to you in general? How would you describe it?
- Are there examples of entrepreneurial initiatives within your organization?
- In the organization, is entrepreneurship more of a behaviour of single persons or is it also existent in the company strategy and management? Can you give some examples for both cases?
- How does the organization handle creativity, initiative and ideas in general (and regarding sustainability)?
- Can you tell us about a situation in which you yourself have acted entrepreneurially?
- Can you tell us about a situation where an employee of your department acted entrepreneurially?
- Are there examples where sustainability related ideas or innovation were successfully implemented? Why?
- Are there examples where sustainability related ideas or innovation were not successfully implemented? Why?
-

Sustainability and sustainable development

- What sustainability activities does your organization follow?
- What long-term and short-term sustainability goals does the organization have?
- What aspects of sustainability (environmental, social, economic) does the organization recognize?
- What role does sustainability play in the overall organizational strategy and operations?
- In your opinion, what role do innovation and creativity play in addressing sustainability challenges that the organization faces?



- How does the organization adapt to external changes that come from sustainability challenges?

Intrapreneurship

- Are there specific employees, groups of people or departments that identify and exploit opportunities for their company?
- How is knowledge sharing and organizational learning organized? Is there any cross-functional collaboration or exchange?
- Is there any innovation-, creativity- or entrepreneurship aimed education or training available in your organization (mentoring, workshops, coachings, courses...)?
- Which ways of communication are present, especially from top management to employee level?
- Are jobs more broadly or more narrowly defined?
- How are employees motivated and encouraged? Is there a reward system based on employee's innovation, creativity and ideas?
- How would you generally describe the characteristics, behaviour and way of working of employees at your organization on different hierarchical levels?
- How is ownership of new ideas or products regulated and organized?
- What role does middle management play in your organization when it comes to new ideas and innovation?
- How are the teams composed regarding diversity and cultural backgrounds?

Corporate entrepreneurship

- Where is the organization's competitive advantage located (in connection to sustainability)? How is this competitive advantage increased, renewed and secured?
- What is the organizational strategy to achieve long-term survival, growth and renewal?
- Are there examples of the organization creating new ventures or firms to exploit (sustainability) opportunities?



- What degree of decision-making autonomy is encouraged by the organizational structure on different hierarchical levels?
- What management styles are most prevalent?
- How are resources distributed in your organization? How can employees with new ideas get access to resources to follow these ideas?
- To what degree are decisions and processes formalized, centralized and controlled? What degree of hierarchy and bureaucracy does your organization have?
- How would you describe the organizational culture regarding ideas and innovation?
- Is there room for experiments, trial-and-error or even failure when aiming to improve the overall organizational performance with new ideas?
- Can you elaborate on research and development activities in your organization?
- How would you describe the market environment and its dynamics? Is it a fast-changing industry?
- What external challenges do you see in the future? How do you adapt to changing industry contexts and external dynamics?

Conclusion

- Where do you see chances of entrepreneurship in organizations answering to sustainability?
- Where do you see limitations of entrepreneurship in organizations answering to sustainability?
- In your opinion, are these chances and possibilities of answering sustainability challenges with entrepreneurship more located on organizational structure or on individual employees

