M.Sc. Thesis in Business & Management

Stockholm School of Economics

Threads of Change: Innovating Sustainability in Swedish Fashion

A Comparative Case Study of Business Experimentation for Sustainability in the Swedish Clothing Industry

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Presentation: Fall 2024

Abstract

This research project investigates business experimentation for sustainability (BES) in the Swedish clothing industry, focusing on identifying barriers, opportunities, and key learning areas that emerge from sustainability experiments. The research highlights that sustainability has become a foundational principle within the fashion sector and addresses significant gaps in existing literature, notably the scarcity of multi-case studies in a specific industry context. By employing a comparative case study design, we conducted interviews with representatives from 17 diverse fashion brands to gather insights into their sustainability experimentation practices.

The findings indicate a complex array of barriers that hinder effective sustainability experimentation, including financial pressures, technological limitations, and organizational inertia. Financial constraints were identified as a substantial challenge, especially for small and medium-sized brands, which often find it difficult to secure funding for sustainability initiatives. Furthermore, the study noted the lack of suitable technology and the difficulties associated with scaling sustainability experiments as barriers that impact the implementation of circular business models. On the positive side, the research identifies opportunities arising from sustainability experimentation, such as increased collaboration among industry players and the potential for innovation spurred by regulatory pressures. Many companies reported the benefits of engaging in partnerships and collaborative forums to share knowledge and resources, which can help mitigate some of the financial and technological barriers faced individually. While some interviewees viewed regulations as a barrier, many recognized them as catalysts for sustainable practices and innovation within the sector.

Key learning areas were evident throughout the experimentation process, underscoring the necessity of constructing a compelling business case to gain internal and external support for sustainability initiatives. The study emphasizes the need to redefine success metrics beyond mere financial performance to include customer feedback and societal impact, thereby fostering a culture of continuous learning and adaptation.

Key words: Business Experimentation, Sustainability, Organizational Learning, Circular Business Model Innovation, Lean Startup, Fashion Industry

Word count: 19.957 words (excluding tables and figures)

Acknowledgements

We would like to begin by extending our sincerest gratitude to our supervisor Kathrin Reinsberger for her invaluable support and guidance throughout this process. Thank you for your constructive feedback and thoughtful advice.

Secondly, we would like to thank all interviewees from the 17 case companies as well as the five expert interviewees from the pre-study for taking the time to participate in our research and share their experiences. Without your input, this study would not have been possible. It was a true pleasure to learn from you. Special thanks to Louise Wennberg for sharing valuable insights into the Swedish fashion industry.

Finally, we want to thank our friends, family, and academic peers for supporting and encouraging us throughout this process. This project would not have been possible without your continued encouragement and support.

Hannah & Theresa

Glossary of Terms

Term	Definition
Business Model	The blueprint of an organization, consisting of its value proposition, value creation, and value capture system (Guldmann & Huulgaard, 2020).
Sustainable Business Model	An innovative approach that creates significant positive environmental or societal impacts while generating economic value by transforming how organizations create, deliver, and capture value (Bocken et al., 2018).
Business Model Innovation	An innovative approach that involves redesigning how a business generates, delivers, and captures value by transforming key components of its operational strategy (Antikainen & Valkokari, 2016).
Circular Economy	This concept emphasizes stakeholder collaboration to optimize resource use and create positive environmental and social impact. The concept has gained traction among businesses and policymakers (Geissdoerfer et al., 2020).
Circular Business Model	A CBM can be defined as business models that generate profit not from one-time sales, but rather from reused resources and products by taking advantage of value that is embedded in previously used products (Guldmann & Huulgaard, 2020).
Circular Business Model Innovation	This concept involves creating, transforming, or acquiring business models that preserve resources by changing value creation, delivery, and capture (Geissdoerfer et al., 2020).
Organizational Learning	The concept is conceptualized as routine-based, history-dependent, and target-oriented. Organizations can learn by encoding conclusions from history into routines that subsequently guide behavior (Levitt & March, 1988, p. 319).

Abbreviations

BM - Business Model

BMI - Business Model Innovation

CBMI - Circular Business Model Innovation

SBMI - Sustainable Business Model Innovation

BE - Business Experimentation

BES - Business Experimentation for Sustainability

OL - Organizational Learning

OLT - Organizational Learning Theory

MVP - Minimum Viable Product

OECD - Organisation for Economic Cooperation and Development

CEO - Chief Executive Officer

CSR - Corporate Social Responsibility

CSRD - Corporate Social Responsibility Directive

R&D - Research and Development

GDPR - General Data Protection Regulation

List of Figures

Figure 1. Outline of Research Area..... 5

Figure 2. Theoretical Framework (building on Aminoff & Pihlajamaa, 2020; Bocken & Snihur, 2020; Ries, 2011)..... 13

Figure 3. Excerpt from Data Structure (based on Gioia et al., 2013)..... 24

Figure 4. Extended Theoretical Framework..... 53

List of Tables

Table 1. Case Selection Criteria..... 17

Table 2. Interviewee Selection Criteria..... 19

Table 3. Overview of Company Sustainability Experiments..... 29

Table of Content

1. Introduction..... 1

1.1 Background..... 1

1.2 Previous Research and Research Gaps..... 2

1.3 Purpose and Research Question..... 3

1.4 Expected Contribution..... 4

1.5 Delimitations..... 4

2. Theoretical Background..... 5

2.1 Business Experimentation for Sustainability..... 5

2.2 Organizational Learning Theory..... 7

2.3 Circular Business Model Innovation..... 9

2.4 Synthesis..... 11

2.5 Theoretical Framework..... 12

3. Methodology..... 14

3.1 Research Approach..... 14

3.1.1 Methodological Fit..... 14

3.1.2 Comparative Case Study Design..... 15

3.2 Data Collection..... 16

3.2.1 Sampling Strategy..... 16

3.2.2 Interview Process..... 20

3.2.3 Pre-study..... 20

3.3 Data Analysis Process..... 23

3.4 Ethical and Quality Considerations..... 25

3.4.1 Ethical Considerations..... 25

3.4.2 Quality Considerations..... 26

4. Empirical Findings..... 27

4.1 Sustainability Strategy..... 27

4.2 Experimentation Approaches and Processes..... 28

4.3 Barriers to Sustainability Experiments..... 31

4.4 Opportunities of Sustainability Experiments 35
4.5 Key Insights Gained from Experimentation 37
5. Analysis 39
5.1 Build Stage 39
5.1.1 Barriers 39
5.1.2 Opportunities 43
5.1.3 Key Learning Areas 44
5.2 Measure Stage 45
5.2.1 Barriers 45
5.2.2 Opportunities 46
5.2.3 Key Learning Areas 46
5.3 Learn Stage 47
5.3.1 Barriers 47
5.3.2 Opportunities 48
5.3.3 Key Learning Areas 49
5.4 Critical Reflection on Extant Literature 49
5.5 Conclusion 50
6. Discussion 53
6.1 Theoretical Contributions 53
6.2 Practical Implications 54
6.3 Study Limitations 55
6.4 Future Research 56
7. References 58
8. Appendix 64
8.1 Summary of Literature Review 64
8.2 Pre-study Interviewees 69
8.3 Case Companies 70
8.4 Expert Interview Guide 72
8.5 Company Interview Guide 74
8.6 Barriers Data Structure 75

8.7 Opportunities Data Structure.....76
8.8 Organizational Learnings Data Structure.....77
8.9 Consent Form.....78
8.10 AI Disclosure.....79

1. Introduction

1.1 Background

With the rise of fast fashion, globally connected supply chains, lean retailing, and digitization, the fashion industry has drastically transformed during the past few decades (Brydges, 2021; Niinimäki et al., 2020). It represents a key environmental threat, as many natural resources are being consumed to produce cheap clothes made by low-paid workers, which consumers use for a short time before disposal (Brydges, 2021). Undeniably, the industry has huge environmental impacts and lies at the source of vast amounts of emissions and waste which contributes to the acceleration of the climate crisis (Chowdhury, 2014; Claudio, 2007; Niinimäki et al., 2020). Today, it is responsible for nearly 10% of CO2 emissions as well as over 90 million tonnes of waste that ends up in landfills around the globe, making it the third most polluting industry in the world (McKinsey & Company, 2023; Niinimäki et al., 2020; Shirvanimoghaddam et al., 2020).

The European Parliament (2020) reports that, if business continues as usual, the industry's total emissions will double by the end of the decade in 2030. While environmental considerations were historically not a primary concern for the industry, more attention has been paid to solving the global climate crisis in recent years, especially in light of increased regulatory requirements and consumer demand for transparency and sustainability (Niinimäki et al., 2020). The fashion industry must transform towards sustainability, with the circular economy concept emerging as a key strategy to minimize resource input, waste, and pollution (Geissdoerfer et al., 2020). This approach involves optimizing material and energy loops through various strategies like recycling, extending, and dematerializing resources, though a completely closed-loop system remains practically impossible (Boulding, 1966). Thus, the circular economy should be understood as a dynamic process of 'going circular' rather than achieving a static, fully circular state (Geissdoerfer et al., 2020).

In light of the transition to a more circular economy, the Swedish fashion industry, namely the focus of this research, presents an excellent case for examining these issues for various reasons (Brydges, 2021). Sweden is home to numerous globally successful fashion brands such as H&M and Acne Studios (Brydges, 2021; Hauge et al., 2009). Since the so-called "Fashion Miracle" in the 1990s, many brands with Swedish roots have gained attention internationally, fueling the

global export of Swedish fashion (Brydges, 2021). Undeniably, Swedish fashion has had a vast impact on the global fashion industry, exemplifying many of the sustainability challenges and tensions faced by the broader fashion sector (Brydges, 2021). Furthermore, the industry stands out as a circular economy leader as many brands have rolled out sustainability initiatives and are increasingly experimenting with circular business models (Brydges, 2021). The fashion giant H&M, for example, is setting the tone for the sustainable development of the industry by launching numerous sustainability initiatives, ranging from the global Garment Collecting program to the launch of rental services in local stores in Stockholm (H&M Group, 2023). Moreover, small to medium-sized brands are emerging with sustainability embedded at their core. For instance, Nudie Jeans has prioritized full transparency in its supply chains and integrated repair, reuse, and recycling programs into its core operation (Nudie Jeans Co, 2024). These are only two examples illustrating that sustainability has become a foundational principle driving the fashion industry in Sweden. Nevertheless, while the Swedish clothing industry has demonstrated notable sustainability initiatives, significant challenges and limitations persist, necessitating more transformative projects.

1.2 Previous Research and Research Gaps

One possible avenue toward a circular economy is business experimentation, an approach to business innovation, involving testing hypotheses about products, services, and business models through iterative learning processes. Especially with regard to sustainability challenges, this method is said to be of paramount interest (Bocken et al., 2021a). While business experimentation, namely the process of testing a new initiative in a small-scale setting, is a well-researched field, "business experimentation for sustainability" (BES) is an emerging concept (Bocken et al., 2021a).

BES is an iterative approach enabling organizations to develop and test sustainable business models through systematic experimentation, with a dual role of serving as an organizational learning mechanism and a strategic tool for legitimizing new business models (Bocken et al., 2021a; Bojovic et al., 2018). These roles relate to two prominent streams of literature, namely Organizational Learning Theory (OLT) and Circular Business Model Innovation (CBMI). OLT emphasizes the importance of organizational learning as a dynamic process of identifying and correcting errors, with scholars distinguishing between single-loop and double-loop learning (Argyris, 1977). Complementing this, CBMI transforms business models to preserve resources and create sustainable value (Geissdoerfer et al., 2020).

BES helps companies navigate sustainability transitions by allowing them to explore and validate new value propositions through rapid, empirical learning, particularly in industries facing significant sustainability challenges like the clothing industry (Bocken et al., 2021a). Despite its potential, implementation of BES faces barriers such as financial pressures or organizational inertia which can impede businesses' ability to conduct sustainability-focused experiments (Bocken et al., 2017; Das & Bocken, 2024).

Despite these theoretical foundations, existing literature exhibits two considerable knowledge gaps. Current studies within BES predominantly focus on single-case examples or cross-industry comparisons, leaving a significant absence of multi-case research within a specific industry and national context (e.g., Bocken & Coffay, 2023). Adding to this, existing literature has primarily examined established players, overlooking new entrants and medium-sized organizations in sustainability transitions (e.g., Bocken & Geradts, 2020). Secondly, the specific role of businesses in driving sustainability through experimental approaches remains underexplored, with a limited understanding of barriers, opportunities, and organizational learning mechanisms involved in circular business model experimentation (Bocken et al., 2021a).

Given the fashion industry's critical role in sustainability efforts and Sweden's prominent position in sustainable clothing initiatives, we explore BES within this sector, analyzing companies of different sizes. Thus, the following purpose and research question are formulated.

1.3 Purpose and Research Question

This study's purpose is to enhance understanding of sustainability experimentation in the Swedish fashion industry. Specifically, we aim to understand the barriers and opportunities for BES as well as the organizational learning areas emerging throughout the experiment process. By doing so, we aim to bring new insights into the developing research field of BES and support fashion brands in navigating sustainability experimentation. To create a nuanced understanding of how organizations can effectively navigate the complex landscape of sustainable transitions, we conducted a comparative case study based on qualitative data. Hence, our research question is stated as follows:

What are the barriers and opportunities for business experimentation for sustainability in the Swedish clothing industry, and what are the key learning areas to leverage the opportunities and overcome the barriers?

1.4 Expected Contribution

By addressing the research gaps, this study is expected to make several contributions. For academic scholars, this research seeks to contribute to the emerging field of BES by delivering comprehensive insights into a specific industry in a single country, namely the Swedish clothing industry. Furthermore, this aims to enhance the understanding of barriers and opportunities and organizational learnings of the experimentation process of a variety of players in the Swedish clothing industry.

For practitioners in the Swedish clothing industry, this paper aims to deliver concrete key learnings that emerge during the process of experimentation. These insights are meant to further the understanding of sustainability experimentation and create guidance on how to leverage opportunities and overcome barriers. We hope to inspire players in the industry to strengthen their commitment to sustainable initiatives and contribute to the sustainable transition of the clothing industry as a whole.

1.5 Delimitations

To set a manageable scope, several delimitations were made in this study. First, our research exclusively focuses on clothing brands that are both founded in Sweden and currently active in the Swedish market. We acknowledge that by doing so, we may exclude prominent players which have considerable influence, however, we argue that the selected case firms sufficiently capture the industry in Sweden.

Second, our methodological approach is cross-sectional rather than longitudinal. Instead of tracking companies' sustainability experiments over an extended period, our analysis captures the historical sustainability experiments and experiences of these brands at a specific point in time. Consequently, this study does not include prospective projections or future-oriented predictions about potential sustainability experimentation but rather provides a comprehensive assessment of past and current experimental practices. We acknowledge that by doing so, we merely capture a snippet of a firm's sustainability efforts, nevertheless, we believe that this delimitation creates a concrete and worthwhile research area.

2. Theoretical Background

This chapter explores Business Experimentation for Sustainability (2.1), Organizational Learning Theory (2.2), and Circular Business Model Innovation (2.3), addressing sustainability challenges (Figure 1). Bojovic et al.'s (2018) dual role of experimentation, as a learning mechanism and strategic tool for legitimizing new business models, serves as the conceptual backbone. By integrating these perspectives, we examine how organizations can systematically learn, adapt, and innovate to achieve sustainable business transformations, ultimately identifying research gaps (2.4) and proposing a theoretical framework for BES in the Swedish clothing industry (2.5). The key findings of the theoretical background are summarized in the appendix (8.1).

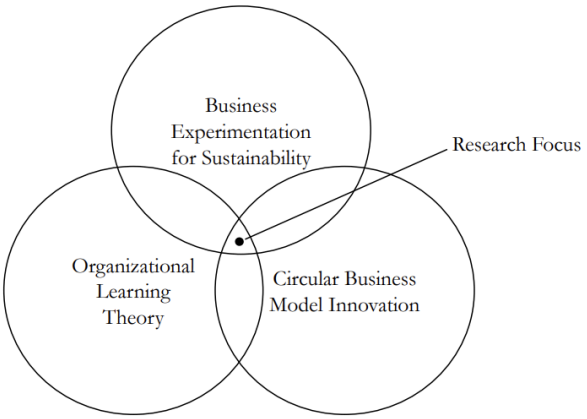


Figure 1. Outline of Research Area

2.1 Business Experimentation for Sustainability

Business experimentation (BE) has emerged as a critical strategy for organizations innovating in uncertain markets (Andries et al., 2013; Chesbrough, 2010). It involves prototyping and testing new business models in real-world settings to respond effectively to market changes (Bojovic et al., 2018). Unlike scientific experiments, BE occurs in unpredictable environments where organizations must simultaneously manage customers and market pressures (Bocken et al., 2021a). According to Bojovic et al. (2018), the essence of BE lies in its dual role: while it serves as an organizational learning mechanism, it can also be a strategic tool for legitimizing new business models in uncertain environments.

The Lean Startup methodology represents a popular framework for BE (Ries, 2011). This approach uses iterative cycles of building, measuring, and learning to quickly test assumptions

and make real-time corrections (Blank, 2013; Bocken et al., 2018; Ries, 2011). According to Bocken & Snihur (2020), the method triggers an iterative experimentation process to reduce uncertainty, engage stakeholders, and promote collective learning in the organization which can result in the emergence of new business models.

Bojovic et al. (2018) identify three key roles of experimentation: learning, signaling, and convincing. Learning allows managers to acquire knowledge about their environment while signaling and convincing help demonstrate value to stakeholders and persuade partners. Effective BE requires strong leadership support and an organizational culture that embraces learning from both successes and failures (Chesbrough, 2010). Additionally, it also necessitates careful resource allocation, including human, financial, and organizational slack (Andries et al., 2013).

In today's rapidly changing environment, BE has become crucial for organizational survival. Bocken et al. (2021a) emphasize its importance in exploring new opportunities and evaluating solutions against market dynamics. This is particularly relevant for businesses transitioning to sustainable models, as experimentation enables learning with limited risks and resources (Bocken et al., 2017, 2018).

Business Experimentation for Sustainability (BES) is an evolving research area focusing on iterative processes for developing and testing sustainable business models. Bocken et al. (2021a, p. 1) define BES as an *"iterative approach to develop and test circular value propositions in a real-life context with customers and stakeholders, starting with a shared goal"*. Similarly, Bashir et al. (2020) describe it as a systematic process enabling organizational transitions to more sustainable business models. BES emphasizes rapid learning through empirical data to validate circular initiatives, involving an iterative process that allows companies to refine strategies based on experimental feedback (Bashir et al., 2020; Bocken et al., 2018; Bocken et al., 2021a). Weissbrod & Bocken (2017) highlight the importance of developing a sustainable BE capability to navigate uncertainties in transitioning to sustainable business models.

Despite the emerging nature of BES, extant literature offers diverse insights into its application. Bocken et al. (2021a) highlight that BES can encompass various innovation types, including technology, product, business model, value chain, and ecosystem innovations crucial for sustainability transitions. They introduce Circular Business Model Innovation (CBMI) and identify the Business Model Canvas and Lean Startup as adaptable frameworks for sustainability experimentation. Baldassarre et al., (2020) approach the topic differently, connecting CBMI with

BE and strategic design, emphasizing prototyping as a method for iteratively implementing business ideas. They thus diverge from Bocken et al. (2021a) by taking CBMI as a starting point and then using both BE as well as strategic design.

As the field of BES continues to develop, existing research reveals a complex landscape of both barriers that impede sustainability experiments and promising opportunities that can drive such initiatives (Bocken et al., 2021a). BES is a crucial approach for accelerating sustainability transitions, enabling companies to transform business models and generate actionable knowledge for addressing sustainability challenges (Bocken et al., 2021a; Bojovic et al., 2018). Bocken & Geradts (2020) identify opportunities in innovation structure, people capability, collaboration, and balancing shareholder and stakeholder value. Significant barriers include financial pressures, lack of experience, market uncertainties, and organizational inertia (Weissbrod & Bocken, 2017; Bocken et al., 2021a; Bocken et al., 2021b; Bocken & Coffay, 2023; Bocken & Geradts, 2020; Das & Bocken, 2024; Guldmann & Huulgaard, 2020). Established businesses face immediate financial pressures hindering controlled experimentation, with Das & Bocken (2024) noting the difficulty of transitioning to regenerative practices in profit-driven contexts. Organizational size presents complex challenges: Bashir et al. (2020) and Bocken & Geradts (2020) argue that large firms struggle with established business models and bureaucratic structures, though they may simultaneously possess resources for comprehensive experimentation. Bocken & Coffay (2023) highlight that despite BES' potential, circular business model experimentation remains rare, with few specialized supporting tools.

Finally, while research has begun to map the landscape of BES, significant barriers and opportunities remain to be explored, suggesting ample room for future investigation.

2.2 Organizational Learning Theory

As mentioned by Bojovic et al. (2018), BE serves as a learning mechanism for organizations, suggesting that learning is a key goal of experimentation. Thus, organizational learning theory (OLT) becomes an important theoretical component for understanding the process of BES.

The theory behind this concept is vast and consists of a myriad of definitions. Argyris (1977), the so-called "father of organizational learning (OL)", defines OL as the extent to which a firm identifies and corrects errors. The author distinguishes between two types of learning: single-loop and double-loop learning. The former does not question the underlying objectives or values, whereas the latter actively investigates them. According to Levitt & March (1988, p. 219),

institutions learn by *"[...] encoding inferences from history into routines that guide behavior"*. The authors mention that organizational learning is encoded in routines and depends heavily on previous experiences. The closer a routine is associated with success the more likely it is to be utilized. Alterations to these routines can thus stem from so-called *"trial-and-error experimentation"* or from the detection of a more favorable alternative (Levitt & March, 1988). Other voices in academia define this theory as a firm's ability to preserve and advance its performance by consulting precedent experiences or as a procedure for identifying and correcting mistakes (Saadat & Saadat, 2016).

Learning happens at different levels of an organization; individual, group, and organizational level (Saadat & Saadat, 2016). Whilst these dimensions are interconnected, e.g. individual learnings influence group learning, we focus our research on learnings derived on an organizational level for the sake of simplicity. To ensure that this learning is properly channeled towards the creation of competitive advantage, establishing a supportive culture is of paramount importance (Saadat & Saadat, 2016). Characteristics of such a culture include transparency, responsibility, and commitment to learning. Saadat & Saadat (2016) accentuate that mistakes should not be punished but rather seen as opportunities to learn from. This ties back to the concept of learning from direct experience mentioned by Levitt & March (1988) who emphasize the significant role that interpretations play in organizational learning. Causality of events is not always apparent and thus individuals and companies create their own interpretations to categorize outcomes. Frames and paradigms serve as guideposts for interpretation and determine how a certain event will be collectively evaluated within the firm. Levitt & March (1988) go as far as to argue that frames are more influential on learning than history.

Regardless of the definition of OLT, there is a consensus that highlights the significance of learning to not only survive but thrive in an environment of unprecedented volatility and connectivity. Teece (2007) thus promotes the notion of dynamic capabilities, which facilitate the creation, deployment, and protection of intangible assets. Such capabilities can be channeled to *"[...] continuously create, extend, upgrade, protect, and keep relevant the enterprise's unique asset base"* (Teece, 2007, p. 1319). By developing and maintaining such dynamic capabilities, organizations are equipped to obtain "evolutionary fitness", allowing a firm to make a living by incubating assets that generate competitive advantages. The author suggests that the learning process can be divided into three distinct capacities; sensing, seizing, and managing/transforming threats (Teece, 2007).

According to Teece (2007), strong dynamic capabilities enable a firm to successfully identify and shape emerging opportunities and challenges in its surroundings. By regularly scanning the environment, investing in research and development activities, and leveraging internal as well as external expertise, organizations will be able to promptly employ these changes to their advantage. Once opportunities have been identified, firms need to move as quickly as possible by ensuring that adequate resources and capabilities are available. For this purpose, existing resources may be adjusted or, if necessary, new ones may be integrated. Through the successful application of dynamic capabilities, organizations are empowered to create and protect intangible assets, leading to increased competitive advantages (Teece, 2007). To successfully facilitate these capabilities and consequently organizational learning, Argyris (1977) proposes the development of an organizational culture that encourages constant reflection to embrace double-loop learning, and address cognitive and systematic barriers within the firm.

2.3 Circular Business Model Innovation

The second role of BE, as stated above, is legitimizing new business models (Bojovic et al., 2018). Learnings derived from these experiments combined with the tested initiative can shape an organization's business model. Business models (BM) can be referred to as the blueprint of an organization, consisting of its value proposition, value creation, and value capture system (Guldmann & Huulgaard, 2020). Innovating BMs enables organizations to mitigate environmental impacts, enhance resilience, and unlock new value potentials. Thus, business model innovation (BMI) serves as an attractive solution for organizations to capture previously untapped value. Geissdoerfer et al. (2020) define BMI as creating and implementing novel business models, ranging from entirely new models to transforming existing ones.

Circular business models (CBMs) are defined as business models that generate profit not from one-time sales, but rather from reused resources and products by taking advantage of value that is embedded in previously used products (Guldmann & Huulgaard, 2020). Through services and innovative solutions, businesses aim to retain material in their loop for as long as possible and ultimately create long-term sustainable value in an age of uncertainty, (Antikainen & Valkokari, 2016). More specifically, Geissdoerfer et al. (2020) define four strategies for CBMs, which serve to slow down and close the so-called resource loop:

1. Cycling: Reusing, refurbishing, recycling materials
2. Extending: Lengthening product life through design and maintenance

3. Intensifying: Reducing idle time and structural waste
4. Dematerializing: Substituting products with services

Putting all these definitions together, we arrive at the definition of CBMI which Geissdoerfer et al. (2020, p. 8) describe as

"[...] the conceptualization and implementation of circular business models, which comprises the creation of circular business models, the acquisition of circular business models, or the transformation of a business model into a circular one."

Thus, the authors suggest that CBMI involves creating, transforming, or acquiring business models that preserve resources by changing value creation, delivery, and capture. A prominent example of such a transformation entails a shift from providing products to providing services to customers (Antikainen & Valkokari, 2016). Bocken & Konietzko (2022) suggest that, particularly in a consumer-facing firm, it is beneficial to examine CBMI through the lens of dynamic capabilities to illustrate how organizations create competitive advantages by creating and adapting business models. While these capabilities slightly differ from the ones mentioned earlier within OLT, one can still discern the connection between these two theories.

The key dynamic capabilities that help explain BMI in a circular setting are visioning, sensing, seizing, and transforming. Visioning involves establishing long-term goals and changing customer behavior while sensing focuses on scanning markets to recognize unmet needs and evaluate novel circular solutions. The seizing capability centers on experimenting and piloting collaborative business models, which can be complex and require external capabilities (Bocken & Konietzko, 2022; Guldmann & Huulgaard, 2020). Transforming, the final step, advances approved solutions by adjusting firm structures, routines, and stakeholder mindsets across the organization's value network. Importantly, Antikainen & Valkokari (2016) argue that incremental changes are insufficient, emphasizing the need for radical innovations and disruptive business models to adapt to a circular economy effectively. Rønn et al. (2023) highlight a key challenge: generalized circular business models may be ineffective. Industry-specific complexities, such as material procurement, lifecycle characteristics, and regulations, can undermine model implementation, suggesting the need for tailored approaches in sectors like digital healthcare. The same can be assumed for the fashion industry, as it also exhibits specific characteristics such as material procurement, garment life cycles, and industry-specific regulations. Hence,

generalized CBMs may not yield the expected financial, environmental, and societal benefits (Rønn et al., 2023).

2.4 Synthesis

Drawing upon a critical literature review, we developed this synthesis chapter to integrate multiple streams of literature. In this research, we focus on how the Swedish clothing industry is using experimentation to drive sustainability, particularly looking at the development of circular business models. For simplicity, we use "sustainable business model" and "circular business model" synonymously.

Our research uses BES as a theoretical foundation, integrating OLT and CBMI. Given BES' dual role as an organizational learning mechanism and strategic tool for testing new business models, we explore these theoretical mechanisms (Bojovic et al., 2018). The goal of BES is to test and refine the viability of circular business models (CBMI), with organizational learning (OLT) facilitated through the experimentation process. This creates a virtuous cycle where each experiment builds upon previous learnings. Our integrated theoretical approach provides a robust framework for understanding how organizations can effectively experiment with circular business models while ensuring learning is captured and embedded within the organization. This holistic approach, combining methodological rigor, strategic direction, and organizational learning capabilities, is particularly crucial in the clothing industry, where companies face significant challenges in transitioning to more sustainable and circular business models.

The synthesis of literature reveals a rich, yet still evolving landscape of research around BES. During our initial research, we identified the following literature gaps:

First, existing studies lack comprehensive sector-specific research in a specific country. Current publications either focus on single case examples or compare experiments across different industries (e.g., Aminoff & Pihlajamaa, 2020). While Bocken et al. (2017) explore one clothing retailer's circularity journey, the broader industry landscape remains underexplored. Existing literature also predominantly focuses on established players, neglecting new entrants and medium-sized companies (e.g., Bocken & Geradts, 2020; Bocken et al., 2017; Guldmann & Huulgaard, 2020). To address this gap, we aim for a comparative case study approach, selecting various organizations in the Swedish fashion industry as our focus area.

Second, Bocken et al. (2021a) argue that, despite existing literature on BES, the specific role of businesses in sustainability transitions through experimentation remains underexplored. To date, scant research has been conducted on how BES is conducted and what factors are important to consider, i.e. opportunities and barriers. We address this gap by shedding light on barriers and opportunities that Swedish fashion brands face when experimenting with circular business models. Regarding organizational learning, we further investigate the key learning areas arising from BES in this industry.

With this research, we aim to contribute to the scarcely researched area of BES and deliver valuable insights into the process of experimentation within the Swedish fashion industry, shedding light on their experiences with sustainability experiments (i.e. barriers and opportunities) as well as the key takeaways for organizational learning.

2.5 Theoretical Framework

The theoretical framework used in this thesis is derived from our literature review. We built a framework that reflects the argument made by Bojovic et al. (2018), namely that the essence of BE lies in its dual role of being an organizational learning mechanism as well as a tool for legitimizing new business models. The combination of OLT and CBMI allows companies to test new circular business models systematically while incorporating the learnings from both successful and unsuccessful approaches into the organization.

Figure 2 illustrates the process of BES, from idea generation and experimentation to the integration of a new business model or the transformation of an existing model toward circularity (CBMI). Our framework is adapted from Bocken & Snihur (2020) and incorporates Lean Startup methodology (Ries, 2011) and organizational learning loops (Aminoff & Pihlajamaa, 2020). Following Ries (2011), the framework emphasizes iterative so-called "build-measure-learn" cycles where experiments are designed, measured, and reflected upon. Aminoff & Pihlajamaa's (2020) organizational learning loops are integrated to demonstrate continuous learning throughout the experimentation process.

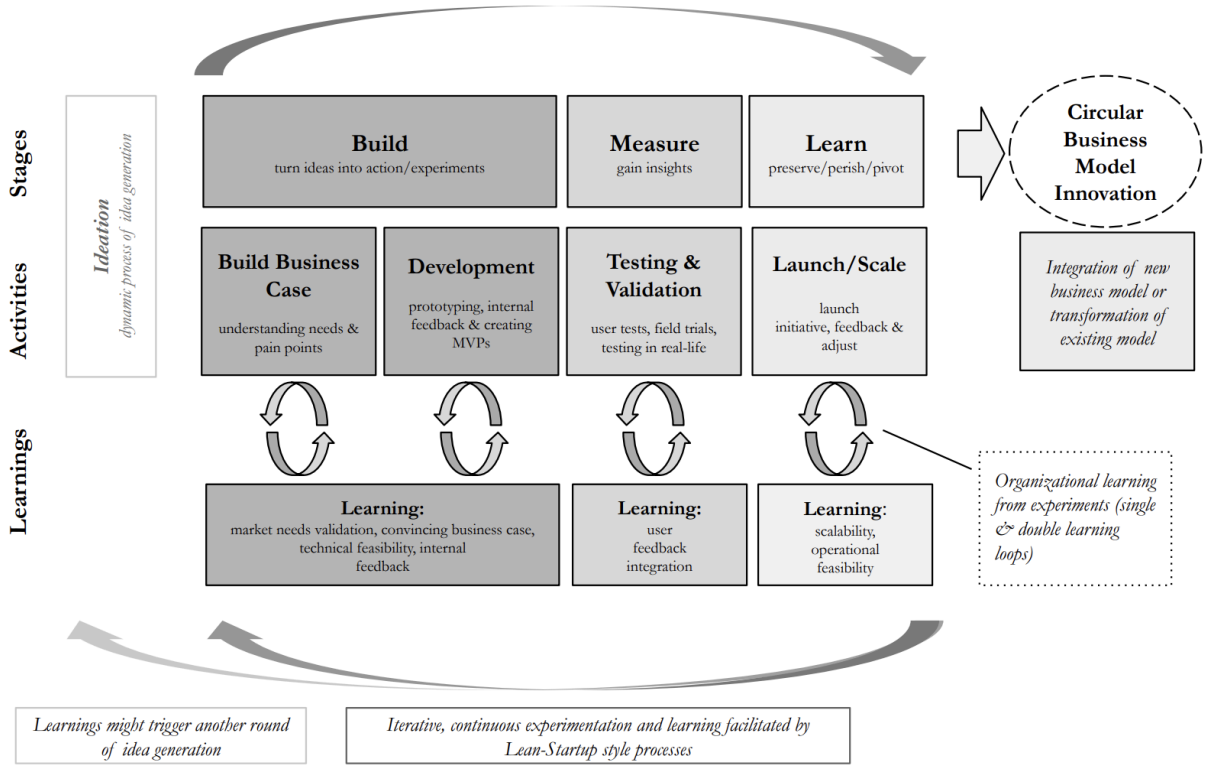


Figure 2. Theoretical Framework (building on Aminoff & Pihlajamaa, 2020; Bocken & Snihur, 2020; Ries, 2011)

The framework consists of stages, activities, and learnings. The stages of the experiment process range from ideation to CBMI. As the emphasis of this research lies in understanding the barriers and opportunities of the experimentation process, the focus of this framework is on the build-measure-learn stages of experimentation. Each stage contains different activities, ranging from building the business case to deciding whether to launch or adjust an initiative. Aligning with the perspective of Aminoff & Pihlajamaa (2020), learning happens throughout the entire experimentation process, with insights derived at the beginning of the process diverging from those obtained in later stages. Thus, the framework depicts different learning areas which suggests that each activity facilitates different key learnings. As the experimentation process itself is dynamic and iterative, each learning subsequently consists of single and double-loop learnings (Argyris, 1977).

Drawing on Aminoff & Pihlajamaa (2020), Eisenmann et al. (2013) and Ries (2011), the BES process involves a dynamic, iterative approach. The process begins with defining an idea and developing a compelling business case, followed by creating early prototypes and MVPs (Aminoff & Pihlajamaa, 2020). In line with Ries (2011), the experimentation cycle involves three

primary stages: build, measure, and learn. During the build stage, organizations develop prototypes and internal feedback mechanisms. The measure stage involves testing the experiment in real-world settings and gathering customer and stakeholder feedback. Finally, the learn stage focuses on interpreting results and making strategic decisions. After each experiment, organizations must choose between three pathways: persevere (continue the current strategy), pivot (modify the approach), or perish (discontinue the initiative) (Eisenmann et al., 2013). This decision is based on whether the MVP validates the original business hypothesis. The ultimate goal is acquiring organizational learning and incrementally developing more sustainable business models, with each experiment providing valuable insights regardless of its immediate success. This is reflected in the "learning" section of the framework. While the framework appears linear, experimentation is inherently iterative, allowing organizations to dynamically move between stages as they refine and develop their innovation (e.g., testing and validating an idea and then going back to developing a new prototype).

This framework aids us in analyzing the findings derived from our interview process and subsequently helps us determine where certain barriers and opportunities occur in the sustainability experimentation process, namely to which activities they relate. It also helps us locate where the key areas for organizational learning lie in the case of the Swedish clothing industry.

3. Methodology

This section outlines our methodological choices for this research project. Firstly, the (3.1) research approach is outlined, followed by our (3.2) data collection process, including case and interviewee selection, interview process, and pre-study. Thereafter, we detail the (3.3) data analysis process, and lastly, we discuss (3.4) ethical and quality considerations.

3.1 Research Approach

3.1.1 Methodological Fit

Identifying research gaps in BES within the Swedish fashion industry, we adopted an exploratory qualitative study approach. Given the nascent nature of sustainability experimentation and limited existing research, a qualitative method was most suitable for generating new theoretical insights (Rossman & Rallis, 2017). Qualitative research is particularly effective for analyzing

poorly understood phenomena, allowing for fresh conceptual understanding grounded in empirical data (Welch et al., 2011). To achieve a methodological fit, we avoided creating hypotheses about variable relationships, recognizing the potential for emerging, unpredictable insights (Edmondson & Mcmanus, 2007).

Our iterative research design incorporated data from multiple sources, including pre-study interviews, interviews with Swedish fashion brands, and a follow-up interview with a fabric recycling expert (Eisenhardt, 1989). We employed an inductive reasoning approach, generating theory from research data (Bell et al., 2019). In line with Bocken et al. (2018), who noted the lack of a comprehensive framework for BES, we aim to use the collected data and observations to generate new theoretical insights and contribute to this emerging research field (Bell et al., 2019).

Our research design employed a case study approach. Yin (1994, p. 13) defines a case study as "*an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident"*, which aptly describes sustainability experimentation in the clothing industry, where business practices and sustainability outcomes are deeply intertwined with organizational and market contexts. Yin's (1994) methodology emphasizes objectivity, researcher independence, and theory-testing orientation as well as the importance of developing a theoretical framework before data collection, guiding case selection, and analytic generalization. Eisenhardt (1989, 2021) provides additional rationale for this approach. First, the intersection of sustainability, business experimentation, and the clothing industry represents a complex phenomenon with limited existing theories, making it ideal for theory building. Second, the Swedish clothing industry offers diverse cases for theoretical sampling which enhances theory-building potential (Eisenhardt, 2021). Both Yin (1994) and Eisenhardt (1989, 2021) highlight the approach's ability to develop theoretical arguments and identify boundary conditions. This method enables a nuanced understanding of sustainability practices within and potentially beyond the Swedish clothing industry, justifying our case study research design.

3.1.2 Comparative Case Study Design

More specifically, a comparative case study design has been selected as the most appropriate research design to examine BES in the Swedish clothing industry. This choice is supported by seminal methodological frameworks from both Yin (1994) and Eisenhardt (1989, 2021), whose complementary perspectives provide a robust foundation for the research approach.

For multiple case selection, the study employs what Yin (1994) describes as replication logic rather than sampling logic. Cases are selected to predict either similar results (literal replication) or contrasting results for predictable reasons (theoretical replication). This approach aligns with Eisenhardt's (2021) emphasis on theoretical sampling and enables robust cross-case analysis to identify patterns and divergences in sustainability experimentation. As outlined in the next section, this study examines Swedish clothing brands of different sizes, maturity levels, product offerings, and price tiers, enabling what Eisenhardt (2021, p. 150) terms a *"common process design"*, where seemingly different cases may reveal similar underlying processes or outcomes related to sustainability experimentation.

To conclude, we believe that this comprehensive methodological approach, drawing on both Yin (1994) and Eisenhardt (1989, 2021), allows for a robust examination of how Swedish clothing companies experiment with sustainability initiatives. It enables both theoretical contributions through careful theory building and practical insights for the industry while maintaining methodological rigor and analytical generalizability.

3.2 Data Collection

Data was collected in two steps: we first conducted a pre-study followed by in-depth interviews with representatives from Swedish fashion brands. To obtain a comprehensive understanding of the Swedish fashion industry, we interviewed four industry experts. Additionally, we talked to an academic expert specializing in BES and an individual working for a company focused on recycling operations for textiles. This mixed-methods approach allowed for both breadth and depth in our data collection process, enhancing the validity and reliability of our findings. The process steps are detailed in the following sections.

3.2.1 Sampling Strategy

After having identified the Swedish clothing industry as our research focus, we selected companies that suited this purpose. During this process, we established four selection criteria according to which we differentiated players in this industry: 1) size, 2) level of maturity, 3) price, and 4) offering (Table 1). After an initial online search for Swedish fashion brands, we grouped the results according to these categories.

First, we employed the OECD (2020) organizational size categorization, defining big players as companies with over 250 employees, medium players with 50-249 employees, and small

companies with fewer than 50 employees. The second categorization focused on company maturity, distinguishing between established ventures (founded before 2000), mature ventures (established before 2016), and new ventures (founded after 2016). Our third classification addressed price tiers based on the most popular items: low-priced offerings were defined as below 500 SEK, medium-priced items ranged from 500 to 2,000 SEK, and premium pricing included items above 2,000 SEK. The final dimension examined product portfolio diversity, which we divided into three categories: broad offering (products beyond clothing), targeted offering (serving a specific customer segment like gender-specific or athletic wear), and niche offering (limited product range or targeted to a specific customer segment such as luxury clothing). These multifaceted classifications allowed us to comprehensively analyze the Swedish fashion industry's structural and market diversity.

Criteria	**Definition**	**Subdivision**
1) Size	Number of employees	• Big players (250+ employees) • Medium players (50-249 employees) • Small players (< 50 employees)
2) Level of Maturity	Age of the firm	• Established firm (before 2000) • Mature venture (before 2016) • New venture (after 2016)
3) Price Tiers	Price of the most popular products	• Low price (< 500 SEK) • Medium price (500-2,000 SEK) • Premium price (> 2,000 SEK)
4) Offering	Extent of the product portfolio	• Broad offering (beyond clothing) • Targeted offering (one customer segment) • Niche offering (limited product offering/niche customer segment)

Table 1. Case Selection Criteria

Our research began with an initial list of 33 Swedish fashion brands, to ensure at least three brands from each category to create a statistically representative sample and subsequently provide a meaningful cross-sectional view of key market segments in the Swedish fashion industry. After reaching out to all brands, our final case sample comprised 17 companies who were willing to participate in our research (Appendix 8.3). We acknowledge the sample's limited

size, which may constrain the breadth of insights. However, we strategically selected diverse cases that, while not exhaustive, provide a meaningful cross-sectional view of key market segments in the Swedish fashion industry, aligning with the objectives of our study.

In developing our interview selection methodology, we established a systematic approach to identify the most appropriate participants across different organizations. In selecting interview participants, we focused on four key criteria to ensure comprehensive and insightful research (Table 2). We targeted individuals across strategic roles (e.g., CEOs, sustainability specialists, etc.) recognizing that experimentation responsibilities vary across organizational structures. Our selection prioritized participants with at least two years in their current organization or five years of industry experience, with a preference for those involved in sustainability projects. We specifically sought individuals with decision-making authority who could initiate, approve, or influence sustainability experiments, ensuring representation from both strategic and tactical levels. Additionally, we valued participants with demonstrable knowledge of business experimentation, preferring those experienced in pilot projects, prototypes, and innovation processes who understood the nuanced sustainability challenges within their organizations. This approach allowed us to capture diverse perspectives across different organizational contexts and levels of expertise in the Swedish fashion industry.

Factor	**Criteria**
Organizational Role and Expertise	• Strategic decision makers (e.g., CEO, founder, board members) OR • Sustainability specialists (e.g., sustainability managers, CSR directors, or environmental officers) OR • Innovation leaders (e.g., innovation managers, R&D directors, product development leaders) OR • Operational experts (e.g., operations managers, supply chain directors)
Experience and Tenure	• > 2 years in the current organization OR • > 5 years of experience in the fashion industry
Decision-making Authority	• Individuals with the authority to initiate, approve, or influence sustainability experiments • Strategic decision-maker OR • Tactical decision-maker

Knowledge of Business Experimentation	• Experience with business experimentation • Understanding of innovation processes and sustainability challenges

Table 2. Interviewee Selection Criteria

As stated above, our sample consisted of 33 brands that would be suitable for this study. Hence, we targeted company representatives from this list. Our interviewee selection process was comprehensive and systematic. We initially identified potential participants through company websites, sustainability reports, LinkedIn, and industry networks, verifying suitability through preliminary conversations and email exchanges. We also employed a snowball sampling technique, asking initial interviewees to recommend additional relevant contacts both within and outside their organizations. Our final sample consisted of 17 case company representatives (Appendix 8.3). For smaller companies and new ventures, roles might overlap, hence we chose to conduct interviews with C-level individuals.

To ensure research quality, we developed tailored interview guides and regularly reviewed the interviewee mix for balanced representation. However, we acknowledged several important limitations, including access challenges with C-suite executives, potential bias towards middle management perspectives, and the risk of selection bias towards companies already interested in sustainability. The research recognized challenges such as role overlap in smaller organizations, time constraints preventing follow-up interviews, and variations in understanding sustainability concepts across different interviewees.

To mitigate these limitations, we employ several strategies including thorough documentation of constraints, efficient interview protocols, and supplementation with secondary data where appropriate. Despite these constraints, we believe that our focus on a carefully selected sample allows for deeper, more nuanced insights into BES in the Swedish fashion industry, prioritizing the quality and depth of data over quantitative representation. Overall, we believe that this systematic approach to the selection of our interviewees ensures that our data collection captures diverse perspectives while maintaining focus on our research question regarding barriers and opportunities for BES in the Swedish clothing industry.

3.2.2 Interview Process

Data was collected from semi-structured interviews with both experts, in industry or academia, and individuals working in the selected fashion companies. We chose this interview process as it fits with the cross-sectional case study design, as the presence of a slight structure allows for comparison between different cases, while still allowing the interviewer to adapt to each interviewee (Bell et al., 2019). In congruence with this project's semi-structured nature, we created interview guides based on insights gathered from our literature research. Initially, we constructed two interview guides, one for experts and one for companies, which respectively consisted of 20 semi-structured questions (Appendix 8.4 & 8.5). Throughout the interview process, we iteratively improved our interview guides to ensure capturing the data relevant to our study.

Each interview was initiated with small talk followed by a brief introduction of ourselves and the research purpose. Additionally, we reiterated the guarantee of anonymity by leaving out firm-specific and personal data. After asking for permission to record, the main questions of our interview guide were asked, while at the same time leaving room for individual follow-up questions to obtain more depth (Rubin & Rubin, 1995). All interviews were conducted in English, even though it was not every interviewee's mother tongue. Thus, we acknowledge the potential existence of minor language barriers. All interviews were conducted individually to avoid social desirability bias or group effects (Bell et al., 2019). Moreover, to increase the chance of understanding, we shared our definitions of BES and SBM (Rubin & Rubin, 1995). Both authors were present to prevent biased interpretation, with one person taking notes and the other asking questions. Finally, we transcribed each interview within 24 hours to ensure familiarity and the possibility to supplement with individual reflections. These transcripts in combination with the taken notes served as the basis for our analysis.

3.2.3 Pre-study

To validate the study's relevance and gain a comprehensive understanding of the Swedish fashion industry and BES theory, we conducted a pre-study. First, we interviewed four professionals in the Swedish fashion industry to understand current trends, challenges, and sustainability initiatives. Second, we consulted an academic expert to gain deeper theoretical insights into the BES concept (Appendix 8.2). For this purpose, we created a dedicated interview guide (Appendix 8.4). These pre-study interviews provided valuable guidance and helped shape the direction of our main research study.

All industry experts had a positive attitude toward the development of the Swedish fashion industry in regard to sustainability. A consistent narrative emerged that significant progress has been made in terms of innovation and the environmental impact of the industry. Swedish brands are increasingly embracing circular business models, with a specific focus on second-hand and take-back schemes, eco-friendly materials, and greater supply chain transparency. This trend is particularly evident among emerging brands and designers who integrate sustainability into their core business models from the outset. As interviewee 2 noted, Sweden's nature-focused national identity serves as a powerful incentive for brands to develop sustainable solutions, while interviewee 3 emphasized that being *"best in class"* is deeply embedded in the Swedish business DNA.

Furthermore, when exploring sustainable business models, the interviews revealed no unified definition. Each expert approached the concept differently: For example, interviewee 1 emphasized embedding sustainability in core strategy, while interviewee 2 focused on production, ethics, and design. This diversity demonstrates the complex, multifaceted nature of sustainability in fashion.

The fashion industry faces significant environmental challenges, with approximately 80% of its total environmental impact stemming from production processes (Interviewee 4). Historically, emission reduction efforts primarily focused on the end of the garment life cycle rather than addressing the production phase. The industry's sustainability journey has been nonlinear, with promising developments in second-hand and repair-focused brands being disrupted by the pandemic, which forced many innovative sustainable fashion brands to close due to decreased consumer purchasing power. Brands also struggle with high experimental costs, technological limitations, and knowledge gaps that make sustainable innovation challenging from both financial and operational perspectives. However, emerging trends, particularly in second-hand markets, suggest a potential recovery and renewed commitment to sustainable fashion practices.

Despite these challenges, the overarching sentiment on the prospects of the industry remains optimistic. The experts agreed that Swedish designers are emerging as global sustainability leaders. Interviewee 1 explained that large players have been very demanding of textile suppliers, effectively using their market influence to drive systemic changes in production practices. All interviewees suggested that while perfect sustainability remains an aspiration, the industry has understood the importance of taking action and has made significant progress in terms of

sustainability initiatives, with brands exploring various innovative approaches. Interviewee 4 observed that *"[...] experimentation happens all the time and in many different shapes and forms"*. Second-hand schemes emerged as a particularly popular experimental trend, where firms are exploring resale platforms and garment collection initiatives. Material-sourcing experimentation is also gaining traction, with a focus on developing more sustainable supply chains and seeking alternatives to problematic materials (Interviewee 2). Brands are also increasingly collaborating across industries and borders, demonstrating a dynamic approach to sustainable fashion innovation that goes beyond traditional business models (Interviewee 3).

Regarding regulations, all experts welcomed environmental regulations as a force for positive change. Interviewee 1 emphasized the importance of fair, comprehensive regulations that apply to all brands and highlighted the need to hold global fast-fashion companies accountable. Overall, the consensus is that regulations must be systematically applied across all markets to create a level playing field and genuinely drive sustainable transformation in the fashion industry. Finally, all experts see opportunities in local production, collaborative approaches between academia and industry, and innovative practices. Interviewee 2 critically stressed that sustainability must be integrated holistically into business strategies, not treated as a separate initiative. Interviewees 3 and 4 emphasized that the industry's future success relies on long-term thinking, openness to collaboration, and creating economic models where sustainability is a core operational principle.

The main findings of the interview with the BES theory expert (Interviewee 5) are as follows: BES is characterized by its goal orientation, output focus, and environmental emphasis, requiring strategic changes within the organization. The expert emphasized that BES is an action-based learning and innovation process that must be driven from the top management level, asserting that *"[...] experimentation is part of fundamental change"*. Despite growing sustainability concerns, current trends show a decline in sustainability experimentation. The expert explained that this reduction is primarily attributed to economic uncertainties and a continued focus on short-term shareholder value rather than long-term strategic thinking. The main barriers to BES include financial pressures, supply chain uncertainties, and regulatory compliance. While the expert agreed that regulations help raise the baseline for sustainability standards, regulatory compliance is resource-intensive which might inadvertently limit resources available for more experimentation. For successful BES implementation, three critical factors were identified: a dedicated strategic budget, organizational willingness to accept failure, and, most importantly, the

ability to learn from experimental outcomes. The expert stressed that without effective learning mechanisms, experiments become *"completely useless."* Finally, the expert highlighted the importance of sector-specific studies in specific countries, which this project aims to address.

3.3 Data Analysis Process

The data analysis process began alongside the data collection, as each transcript was proofread by both of us (i.e. dual control principle), promoting the accuracy and credibility of the captured primary data. Using an inductive approach, this study gathered specific observations and data points to analyze patterns and develop broader theoretical insights, with the data analysis method inspired by grounded theory (Bell et al., 2019).

Grounded theory, a prominent qualitative data analysis approach, was deemed appropriate for this research as it allows for the development of theory based on real-word observations (Strauss & Corbin, 1998). According to Strauss & Corbin (1998, p. 12), grounded theory is a *"[...] theory that was derived from data, systematically gathered and analyzed through the research process"*. The methodology employs key tools including open-coding, theoretical saturation, and constant comparison. Coding is a critical process that involves breaking down data into component parts and subsequently naming them. Theoretical saturation was reached by determining that there are no further meaningful insights to be gained from reviewing the data. Finally, we employed constant comparison by following Bell et al.'s (2019, p. 24) explanation of *"[...] maintaining a close connection between data and conceptualization, so that the correspondence between concepts and categories with their indicators is not lost"*. The grounded theory process generates concepts, categories, and ultimately theory. Concepts are labels allocated to emerging phenomena, such as "willingness to pay" in this study. Bell et al. (2019) argue that a concept's usefulness is determined by its frequency within the data, with higher frequency indicating greater significance. When a concept is elaborated to represent a real-world phenomenon, it becomes a category, existing at a higher level of abstraction. The ultimate outcome of grounded theory is theory and Strauss & Corbin (1998) distinguish between substantive and formal theory levels, with this research focusing on substantive theory, which relates to a specific empirical instance or area, in this case, Swedish fashion brands.

After transcribing all interviews, we independently reviewed the raw data to ensure both deep familiarity with the material and the validity of the findings. We separately identified key themes,

concepts, and important quotes that could help us answer the research question at hand before getting together and discussing the results.

Following the grounded theory approach, we conducted within-case analysis before cross-case analysis, a key step in building theory from case studies (Eisenhardt, 1989). With 17 interviews, we initially managed a significant volume of unstructured data. The within-case analysis allowed us to become familiar with each case as a stand-alone entity, enabling unique patterns to emerge before generalizing across cases. In the cross-case analysis, we focused on identifying key differences and similarities between cases, following (Yin, 1994) and (Eisenhardt, 1989, 2021). We systematically compared patterns across cases while avoiding premature conclusions, and examining data through multiple perspectives. By identifying dimensions that analyze similarities within groups and differences between established firms and emerging ventures, we uncovered novel insights, leading to more reliable and grounded conclusions (Eisenhardt, 1989).

We then began coding using NVivo inspired by the three-level data analysis structure by Gioia et al. (2013). The process was initially conducted for the first part of the research question, resulting in two data structures for barriers and opportunities (Appendix 8.6 and 8.7). We then continued with the second part of our research question, which resulted in a third data structure for organizational learnings (Appendix 8.8). For the sake of simplicity of this section, we only reference examples from the first data structure, namely barriers to BES. An excerpt of this data structure can be seen in Figure 3 below.

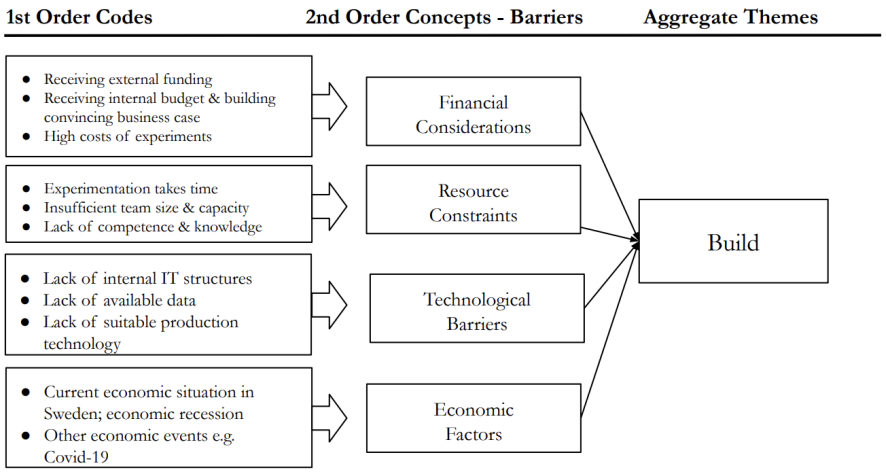


Figure 3. Excerpt from Data Structure (based on Gioia et al., 2013)

Aligned with Gioia et al.'s (2013) three-level analysis, we sorted the data and identified first-order codes in the first stage of our analysis. We utilized open codes, which are descriptive in nature

(Bocken & Geradts, 2020). By iteratively analyzing the raw data, we identified statements that are negatively related to experimentation for sustainability (i.e. barriers), such as the difficulty of acquiring sufficient funding. We then clustered the identified first-order codes under more general and abstract second-order concepts. For example, we clustered statements related to "difficulty receiving budget", "finding funds to experiment", and "high cost of experiments" into the concept of "financial considerations". In this stage, we identified 8 categories related to barriers to BES. Finally, we identified aggregate dimensions related to our categories.

During our analysis, we discovered that barriers and opportunities emerge at different experimentation stages. For example, financial considerations were most critical in the initial stage, with funding dependent on building a strong business case. We thus related aggregate themes to the Lean Start-up build-measure-learn cycle, identifying barriers influencing the build stage, including financial considerations, resource constraints, technological barriers, and economic factors.

Ultimately, we synthesized a final data structure representing the different barriers to experimentation (Appendix 8.6). As stated, we followed the same method for opportunities of BES and learning areas. All final data structures can be found in the Appendix sections 8.6, 8.7, and 8.8. In Chapter 5.5, we will connect the primary data to our theoretical framework to systematically examine and interpret the barriers, opportunities, and learning areas.

3.4 Ethical and Quality Considerations

This chapter outlines the ethical (3.4.1) and quality (3.4.2) measures taken to ensure the responsible and rigorous conduct of the research. It details the steps taken to protect participant privacy, establish credibility and dependability of the findings, and uphold objectivity throughout the study.

3.4.1 Ethical Considerations

To ensure responsible research, we strictly adhered to ethical guidelines. We anonymized personal data by assigning pseudonyms to interviewees and companies (i.e. interviewee 1, company A), complied with GDPR, and obtained signed consent forms (Appendix 8.9). Each interviewee was further informed about the study's purpose, research process, and their right to

refuse recording, thus meeting the ethical considerations outlined by Bell et al. (2019), including informed consent, privacy, and preventing deception.

3.4.2 Quality Considerations

To enhance the findings' quality, we opted to pursue an alternative way of establishing reliability and validity proposed by Guba & Lincoln (1994). This approach follows the reasoning that there is no single absolute truth about the social world and thus qualitative research should be evaluated according to different criteria than quantitative research. We deemed this method relevant for our research setting, given that our thesis takes a critical stance where there is no one absolute truth (Bell et al., 2019; Guba & Lincoln, 1994).

Transferability. Our first step was to ensure the transferability of our findings, which parallels external validity. Qualitative research is said to focus on depth rather than breadth, meaning that findings are oriented to the contextual uniqueness of the social world being studied. Thus, we employed so-called thick descriptions which allow others to make judgments about the possible transferability and applicability of findings to other contexts (Bell et al., 2019; Guba & Lincoln, 1994).

Credibility. Credibility refers to the extent to which others accept the result of research. To constitute the plausibility of our paper we utilized the triangulation concept suggested by Guba & Lincoln (1994). This process involves utilizing more than one method or source of data, which in our case consisted of the compilation of data through a pre-study, in-depth interviews, and a review of secondary data available on brands' websites (e.g., sustainability reports). This combination of data collection contributes to the robustness and thus the credibility of our findings. Lastly, to ensure respondent validation, we reiterated answers given by interview partners to validate that we correctly understood their statements (Bell et al., 2019).

Dependability. To ensure reliability, or in our case dependability, we followed Guba & Lincoln's (1994) proposed auditing approach. In line with this method, we kept complete and detailed records of all phases of our research process to ensure that peers can assess that proper procedures have been followed. The addition of appendices, including a complete interview guide and data analysis process, further increases the dependability of our data.

Confirmability. Finally, we established confirmability by mitigating potential researcher bias and acknowledging the limitations of interview data. We recognized that complete objectivity is unattainable and that interview partners might selectively represent their sustainability experiments, potentially over-reporting positive impacts or under-reporting challenges. Thus, we aim to take a critical stance when discussing our findings. Moreover, we enhanced objectivity by initially having each author individually go through the findings before discussing them with each other (Bell et al., 2019; Guba & Lincoln, 1994).

4. Empirical Findings

This section presents the empirical findings across the 17 interviewed Swedish fashion brands. We begin by providing background on how the selected brands approach sustainability (4.1). Thereafter, we list examples of sustainability experiments across cases as well as the findings on the strategy and process behind experimentation for sustainability (4.2). Then, we present the findings on barriers (4.3) and opportunities (4.4) for BES in Swedish clothing brands. The chapter concludes with our findings on key insights gained (4.5).

4.1 Sustainability Strategy

The findings show that all brands are currently taking action for sustainability in some shape or form. All interviewees recognize the importance from a strategic as well as regulatory compliance perspective. Interviewee M emphasized, "*[...] we understand how big of an impact our industry has on the environment and that's why we are trying to integrate sustainability to everything that we do from the design to the final sale [...]*". Nevertheless, some voices are more pragmatic than others and approach sustainability more somberly. Company J followed the belief that *"[...] looking at where the society is at [...] I think the best thing you can do is to make a product that actually is being used [...]"*.

Approaches to sustainability vary across different dimensions, one being the size of the company as well as its age. The majority of large brands have only recently added sustainability to their list of major concerns. Most established brands claimed that the topic of sustainability was not a prominent concern for businesses back when they were established, but awareness was said to have grown since then. The majority of smaller brands have put importance on sustainability since the beginning, namely having sustainability at or near the core of their organization. The notion among founders of new ventures is that *"[...] sustainability was a given [...] as a modern brand (sustainability) is something you just need to do"* (Interviewee O).

Other differences crystallized concerning the garments themselves. While some companies emphasize the quality of the garment to elongate its lifecycle, others predominantly focus on producing garments using sustainable materials. Interviewee F said that they have *"[...] a great belief in that we need to create long-lasting quality products and that's the best we can do to minimize our footprint in the world"*. Others mainly focus on improving the sustainability of materials used for garments, while not outright mentioning aspirations to influence customer purchase patterns. The CEO of company Q mentioned: *"[...] when we produce in terms of the actual material used, like for swimwear, it's [...] 100% recycled plastic"*.

Although the majority of interview partners stated that they *"[...] don't compromise with sustainability [...]"* (Interviewee K), financial considerations and growth are still taken into consideration when developing sustainability initiatives. Interviewee N stated that *"[...] that's the basis for every decision: does it have net benefit and can we afford it?"*

4.2 Experimentation Approaches and Processes

This section presents sustainability experiments across the garment value chain, from production to end-of-lifecycle handling, as well as company approaches and experimentation processes. Interviewed companies primarily focused on two experimental areas: developing sustainable fabrics during production and implementing secondhand or garment-takeback initiatives, demonstrating diverse approaches to promoting circularity within their business models (Figure 4).

Company	Production Experiment	End-of-life Experiment	Prominent Examples
A	●	●	Organic cotton, recycled polyester & takeback scheme
B	●	●	Second-hand scheme & customer circularity program
C	●	●	Washing processes & reconditioning program
D	●	●	Swedish wool & local production
E	●	○	Durable materials
F	○	●	Second-hand scheme
G	○	●	Repair & resale scheme
H		●	Second-hand for young customer segment

I	⚫	⚫	Regenerative wool & resale platform
J	⚫		Organic & recycled materials
K	⚫	⚫	Sustainable fibers and rental & reuse programs
L	⚫	⚫	Organic cotton & second-hand scheme
M	⚫	⚫	Digital sampling, regenerative wool & partnership to handle leftover stock
N	⚫		Organic materials & sustainable dyes
O	⚫	◯	Lyocell & recycled ocean waste
P	⚫		Recycled materials & dyes
Q	⚫		Recycled materials

⚫Experiments have been conducted; ◯ Experiments are in the pipeline;
blank No experiments were conducted/are planned

Table 3. Overview of Company Sustainability Experiments

Examples of the former experiment type focused on the garment production phase, include an initiative by company D, a large and established player. The brand recognized Swedish wool as an *"[...] unused resource in Sweden, it often gets discarded [...]"* and joined an initiative to *"[...] transform that unused resource into a valuable resource"*. The interviewee highlighted that *"[...] it's been a long journey to find stakeholders in the supply chain who can help us [...]"* since the infrastructure for the processing of the raw material was non-existent in Sweden. Interviewee D further stated that *"[...] it feels like we've been faced with a supply chain that did not exist and we had to build it ourselves [...]"*. The experiment was said to not only affect company D, rather they hope that other players may perceive the fabric as more attractive as the processing becomes more seamless.

An example of the latter type of experiment, focused on the end of the garment's lifecycle, was company L, a small to medium player. The interviewee remarked that to create a more circular business model, the brand initiated a revival program. They added that the initial stages of the program were developed within an accelerator program where participants *"[...] would have workshops and you would build the concepts over a period of time"*. It was stated that the development procedure also entailed *"[...] doing research with our customers and what are they looking for [...] What are their motivations (and) needs [...]?"* The brand then launched an MVP to determine how customers would react to the offering and simultaneously partnered up with *"[...] a partner factory that does the*

repairs and the cleanings". The current state of the project was initiated with the opening of a physical second-hand store in Stockholm.

These examples and other experiments conducted by the case firms all followed a specific process. After working out the initial details, the majority of brands aimed to create an MVP, a simple version of the intended product or service, and launch it as soon as possible. Further similarities in the experimentation process that emerged in our findings were the strong involvement of customers. Interviewee B remarked that they "*[...] always try to test it with customers directly so they can give you a yes or no [...]"*.

We found that most large players in the industry exhibit a structured approach to experimentation, while the majority of small to medium players approach experiments for sustainability in a more unstructured manner. Exceptions for this finding were two small to medium players who follow a structured process, with interviewee P stating that *"You observe and you get the data inputs you come up with hypotheses. Then you test your prototype. And [...] then you get feedback"*.

When asked about the strategy behind experimentation for sustainability, most interviewees answered that their main focus lies on *"[...] sourcing new circular materials and develop our design from an ever-growing selection of responsible alternatives"* (Interviewee I). Another crucial component of the organizations' sustainability, which was discussed in a large number of interviews, was to collaborate with actors both internally and externally. Company B commented that for them it is essential to *"[...] find the key persons internally"* while company D highlighted that they teamed up with *"[...] a community for fashion brands working with wool, and we're going to [...] work on this question together"*. The interviewees clearly attributed the responsibility for experimentation to the management team. The consensus was that "*it has to come from the owners"* (Interviewee N) and that it is essential *"[...] that (sustainability) is a rooted vision among management and leadership. Otherwise nothing will happen"* (Interviewee F).

While there was no consensus on the definition of a successful experiment, one determinant of success most interviewees agreed upon was that they refrained from initially measuring the success of experiments for sustainability in monetary terms: *"Eventually, when the business is doing what you want it to, you want to start looking into how you can make it more efficient monetary wise"* (Interviewee G). Thus, the majority of firms, regardless of their size, measure the success of a

sustainability experiment in customer feedback and sales numbers. Another measure of success highlighted in various interviews was knowledge. Interview partners stated that experiments were "*[...] more learning-based [...]"* (Interviewee K) and that "*[...] customer insights and learnings [...]"* (Interviewee B) were considered as the main KPIs. One interviewee further elaborated on this point by stating that *"we also define success in that we fully understand how complicated the supply chain is, [...]this case has been most successful in soft values [...]"* (Interviewee D). Nevertheless, the data states that, while initially, monetary considerations are not a major determinant of success, they grow in importance as the initiative matures. An interviewee working for company F noted that "*[...] if we don't take market share with our more sustainable products, we have failed as well"*.

4.3 Barriers to Sustainability Experiments

During the interviews, we directly asked our interviewees about specific barriers they and their organization encountered when conducting sustainability experiments (see Interview Guide in Appendix 8.5). The following areas were mentioned most frequently:

Financial Considerations. All interviewees highlighted the significant costs and resource requirements involved in launching new sustainable business models and projects. As Interviewee F, stated, *"[…] there's a lot of budget that needs to go into it […] if that's not allocated, your hands are tied"*. The challenge of ensuring the financial viability of sustainable experiments and making a business case out of it was a recurring theme. Interviewee P noted that *"[...] the purpose of a business generally in textbook is maximizing shareholder value"* and that being *"purely sustainable at the cost of your EBIT [earnings before interest and taxes]"* is difficult. In addition, the interviewee pointed out that securing funding can be difficult if the business case is not strong enough because *"if you're bleeding but very sustainable, they (i.e. investors) don't wanna touch you"*. Several interviewees expressed concerns about the profitability and commercial success of BES. As interviewee P stated, *"From the business perspective, there are very few cases of profitable super sustainable companies […] unit economics is super important in that part […] it has to make financial sense first"*. Interviewee M argued along the same lines, saying that *"the economic situation is important, […] we're all dependent on that, sadly"*.

Other Resource Constraints. Besides financial resources being the most frequently mentioned barrier to BES, additional resource barriers related to time, human resources, and knowledge levels were brought up frequently. As interviewee F expressed, *"[...] resources are probably the biggest hurdle we have because we have smart people, it's just that they can't do everything at the same time"*.

Interviewee D explained that for successful experimentation *"you would need a dedicated team only working on that […] because now many companies […] are doing all the normal work and then trying to come up with this as well"*. Interviewee P argued that all decisions made in the organization are *"[...] based on the opportunity cost of time"*, which often results in little to no time being spent on sustainability experiments. Additionally, interviewee E mentioned that *"[...] barriers are lack of competence and knowledge within the organization […] from top down to bottom up"*. They further explained that the first step is to *"[…] understanding knowledge and competence that's missing. That's (a) huge barrier […] because what we don't know, we can't really change, right?"*. The interviewee continued that company E has been focusing on "*[...] involving and engaging and educating the teams [...] "* about the importance of sustainability initiatives and providing them with enough knowledge about experiments. Interviewee B added that understanding new sustainable business models can be challenging and *"[…] so you need to really know what you're doing"*.

Supply Chain. Various interviewees mentioned the short-cycled production process in the fashion industry as another barrier to BES. Interviewee M explained that "*[…] the design process can start even longer than a year ahead of the final production […] So you'd really have to plan ahead a lot"*. Other supply chain issues were quality concerns and minimum order quantities. As interviewee M summarized it *"[…] when it comes to new material innovations then it's a lot about quality, minimum order quantities, etc"*. Interviewee K explained the complexities of the fashion supply chain and pointed out the difficulty of ordering small batches as part of a small-scale experiment with recycled materials, stating that

> *"The supply chain in textiles is […] crazy. […] It's really the supply chain we're in that makes it hard to prototype […] Quick prototypes are something we would dream about. [...] when we find new materials [..] we want to make a small production of that and then sell it in ecom and then see how it sells. But then we have to buy 1000 pieces that can only be delivered in one year because that's the shortest delivery time"*.

Interviewee P discussed the difficulties of finding the right supplier to order a relatively low amount of pieces, compared to the large-scale orders that most internationally operating suppliers are used to: *"[…] The best suppliers are used to working with Patagonia […] who order huge quantities. They're good at what they do, but if you ask them for like 100,000 pieces […] (they) don't have efficiency in the supply chain […] (but) a high cost"*. Interview partner N pointed at the difficulty of finding a certified supplier that is willing to produce new types of more sustainable fabrics, resulting in you having to *"[...] limit your choices a lot. […] at the moment, there are not many mills that are certified [...]"*. Additionally, as interviewee E described, continuous follow-ups with supply

chain partners about compliance and quality standards are difficult: *"[…] how do you follow up? How do you make sure that they comply with the code of conduct? How do you see their progress?"*

Technology. The lack of either internal IT structures or suitable production technology for recycled fibers was frequently mentioned. New internal IT structures are needed to handle, for example, the sale of second-hand items. In contrast to traditional IT systems, *"[...] with new business models, you need to find new processes and new system support"* (Interviewee B). As interviewee K mentioned, *"[…] the availability of out-of-the-box or easily adjustable IT systems […]"* seems to be a major barrier as these often are not advanced enough or not in place, making it difficult for brands to test initiatives. Another technology barrier mentioned was the lack of suitable production technology, reflecting a major problem in experimenting with new types of sustainable and recycled fibers. According to interviewee A, *"[…] it's a huge tech gap out there [...] to get the tech solutions for working with recycling"*. Similarly, interview partner C argued that *"[…] the infrastructure for reuse of garments and reuse via reconditioning or restoring is very underdeveloped and very under-researched"*. Interviewee P explained the problem in more detail and described that *"[…] the major issue with circularity is with the fabric recycling […] Fabrics can only be recycled if it's 100% of a certain yarn […] The technology isn't quite there for that right now in terms of mixed fabrics"*.

Scaling. Despite having identified promising BES, several interviewees described the challenge of scaling up these initiatives. Interviewee G explained that running a small pilot for initial experimentation might be easy to handle from a managerial perspective but that increasing the scale is a challenge. The interviewee illustrated that *"[…] when you expand, you need to take the product from the stores to the back, to the cleaners, or to the people who will repair it and back to the customer […]"*. Interviewee C, working for a large-sized brand, took another perspective and pointed out that interpretation of data collected from a small-scale experiment is a challenge going into scaling up, explaining that *"[…] the challenge is to actually get to interpret the data you get from the experiments. […] What belongs to small scale and what is actually transferable?"*

Consumer Behavior. According to the CEO of company O, *"[...] it's a weird time where sustainability is high on the agenda, but it's not a priority to pay for the consumer currently"*. This statement summarizes some of the interviewee responses on consumer behavior and willingness to pay to be barriers to BES. When asked why no more experiments are conducted to test circular business models, a frequent response was that it is simply not demanded by the consumers and, even if it would be, many consumers would not be willing to pay for it: *"There's a huge disconnect nowadays between what the customers say they want for sustainability and what they actually want to pay for"*

(Interviewee O). Interviewee K acknowledged that, while Swedish consumers are generally known to care about sustainability, this sentiment is often not reflected in their buying behavior, stating that *"[…] we often read that Swedish consumers are different, that we're more sustainability savvy [...]. But [...] we don't necessarily see that at all to be honest"* and adding that *"[…] we're used to getting things very cheap",* suggesting that consumers prefer lower prices, even if they might have the money to spend on more sustainable clothing items. Interviewee N was more critical and stated that *"[...] it's very few people who care. Everyone is brainwashed by fast fashion."* Similarly, interviewee P added that *" there are very many conflicting desires […]".*

Economic Factors. Several interviewees pointed to the current economic situation in Sweden as a barrier to BES. In times of an economic recession, customers do not have extra financial resources that could be spent on more sustainable clothing. And as more sustainable production, sustainable fibers, and green initiatives often cost more money, brands often decide against such experiments as they see low consumer demand. As interviewee O pointed out, *"[…] we're in extreme economic times […] People are poor compared to what they've been and that there's a lot of great brands that have gone bankrupt".* The interviewee further described that *"It's tricky in these economic times to maintain that high sustainability level. It's part of our DNA and we want to do it, but […] we need to make sure the business thrives […]".* Similarly, interviewee N described that, before COVID-19, the market for sustainable fashion was booming but that *"[…] now the momentum is gone because of COVID and then because of two wars […] and the cost of living crisis"*, which resulted in lower consumer demand and willingness to pay for sustainable clothing items and to support smaller sustainability-focused fashion brands.

Regulations. Environmental regulations were frequently discussed as a barrier. Especially during the past decade, many industries, including the fashion industry, have become more regulated as the European Union and other parts of the world have introduced many new environmental regulations. As interviewee E summarized, *[…] the biggest worry right now for all companies […] is that we need to be compliant with the new EU Green Deal and all the legislations […] everyone is stressing a lot".* Interviewee F explained that it takes a lot of work, namely in the form of time and human resources, to comply with regulatory requirements. This might leave companies not having enough capacity to conduct BES. As interviewee F put it *"It's horrendous how much time companies need to put on reporting stuff […] It's extremely challenging when it comes to the admin burden that comes with it. It's probably gonna break a few companies [...]".*

4.4 Opportunities of Sustainability Experiments

Besides acknowledging the challenges of experimenting, the majority of interviewees saw the opportunities of conducting sustainability experiments. The following opportunities were mentioned most frequently when asked about the opportunities of BES.

Industry-wide Impact. Most interviewees mentioned the positive impacts that such experiments can have on the fashion industry as a whole. Interviewee E explained that *"[...] there's an opportunity to actually contribute to something that will not destroy the planet"* and interviewee H stated that they "[...] *see many opportunities when it comes to really changing the industry [...] there are many opportunities in finding value in other ways"*. Furthermore, interviewee G mentioned that a brand conducting BES can be a frontrunner in the industry and thus inspire others to do the same: *"Sometimes all you want to do is to lead the industry by taking initiatives that the others have not taken […] then it also catches the momentum"*. Interviewee K, working for a medium-sized brand that has experimentation and sustainability at its core, added that *"[…] the fact that we do exist and that we have […] kept existing and slowly growing is […] a sign that we have had successful experiments […] and we have tons of examples of when we do things other companies follow us"*. Finally, the interviewees brought up different arguments related to how the brand size relates to the impact made in the fashion industry. Interviewee O, CEO of a small brand, believed that *"[…] the sustainability practice will always be driven by smaller brands and then the bigger brands need to imitate because they have to […]"*. Interviewee A, representing an internationally represented brand, further stated that large brands are often targeted by sustainability organizations pushing them to make more sustainable choices, explaining that *"They run after us […] I asked them "Why do you always run after us?" And they're like "Because when we run after you, you do something. You act in one way or another, you act. And that gets others to also act"*. Interviewee Q elaborated on the nature of the Swedish fashion industry and explained that it is common for brands to take inspiration from one another, explaining that *"[…] Swedish people are like members of a pack […] everyone wants to do the same things […] If one company does a certain activity within BES, […] the next one is following"*.

Collaboration. Many interviewees mentioned that they see collaboration, within and outside the industry, as an opportunity to overcome the above-mentioned barriers. Interviewee H stated that, for experiments to be successful, *"[...] collaboration is key"* and interviewee D added that *"[...] it's hard to do these things if you don't work very closely with your partners"*. Interviewee H talked about the collaborative nature within the Swedish fashion industry and explained that they *"[…] have a very collaborative field within the textile industry […] there are many organizations working for sustainability […] it*

feels like we are working a lot together to drive change". Additionally interviewee F noted that *"[…] the openness in the business is fantastic. No one's hiding anything or holding back. No one sees it as a competition".* Regarding collaboration across different industries, interviewee H explained that successful *"[...] collaboration starts already from the beginning […] it's collaboration all the way through and in the end , it's also collaboration with the customer […]".* Interviewee E mentioned that there are many external partners interested in collaborating: *"There's an ocean of different partners that could be potential solutions […]".* Interviewees A and B, both representing large brands, explained that their companies put a lot of effort into establishing relationships with academia, start-ups, and other industries. Interviewee B explained that they *"[…] have a large network from the academics (and) other industries […] and also a lot of startups that come up with new ideas. So we can test together […] we have a mix and a broad network".*

Consumer Behavior. While some interviewees expressed that there is a significant disconnect between consumers' expressed interest in sustainable fashion and their actual purchasing behavior, others had a different opinion on consumer behavior and viewed it as an opportunity for the industry to do better. Interviewee L explained that *"[…] Scandinavian markets generally are quite receptive to new concepts on sustainability […] there are a lot of brands in that direction and I think consumers are liking it".* The interviewee added that the Swedish market is a great territory for brands to test out new sustainability initiatives: *"[…] I know that a lot of international brands launch and test concepts in the Scandinavian market because it's both relatively early adopter and still representative for other, bigger markets".* Interviewee G described that consumers have become increasingly aware of sustainability and the negative impact of the fashion industry and said: *"The customer is becoming more and more aware. They want to know where it is being manufactured, who has manufactured it, […] What is the environmental outcome? […] That keeps us motivated".*

Regulations. While some interviewees argued that environmental regulations pose significant challenges for fashion companies, others viewed them as a great opportunity for change. Several interviewees agreed that regulations are needed for changes to happen. Interviewee N explained that *"[...] industries will never self regulate […] the only thing that can make positive change is government regulations"* and further that *"[...] regulations have been very positive and will speed up the process. It wouldn't happen otherwise".* Interviewee A had a similar opinion on the increasingly regulated fashion industry and said that

"[…] legislations are fantastic […] If we wouldn't have them, it could still be a haggle or different companies could down prioritize. And now you can not do that […] it's connected to fines. So it can be a really, really challenging financial situation if you are in breach because it's huge fines. […] So you don't want to fail, right?"

Company Factors. A final opportunity that was mentioned by several interviewees was individual factors related to company size as well as company culture or, in other words, the openness to experiment within an organization. Interviewee L, co-founder of a small-sized brand, believes a smaller company size is an advantage when conducting sustainability experiments as it allows for more flexibility and agility. The interviewee explained that they *"[…] have been and still are quite small and flexible. That allows us to do a lot of these things on gut feeling […] we pride ourselves in being data-driven and very strategic, but it's also a lot about just what we feel is right as a brand"*. Interviewee M talked about the process of scaling up as a company which allowed them to both onboard more sustainability initiatives as well as foster a positive experiment culture: *"[…] as we scale up […] it's easier for us to onboard new solutions. The company is also very positive when it comes to sustainability […] experimentation […] the general atmosphere is very positive to try something new"*. Interviewee P also pointed out the importance of having a company culture that allows for experimentation, regardless of the outcome, stating that having the right culture and mindset from the beginning and understanding design thinking as a tool for innovation is very important. The interviewee explained that *"[…] it comes down to organizational culture […] You want to do anything you can do to improve the business and experiments are like a no-brainer, right?"*

4.5 Key Insights Gained from Experimentation

As a last step during our interviews, we asked the interview partners for key insights in the form of advice they would give to another firm looking to start experimenting for sustainability.

Goal-setting. When building the business case and experiment, interviewee K advised that it is important *"[…] to start with the goal of the company and if that goal is truly more sustainable, then you go all in and go 100% on what you decided to change"*. Once an idea for an experiment has been formulated, interviewee G pointed out that companies *"[…] need to have a really good thought-through proposal in the beginning to really know what is the end in mind when you start with something. Where do you want to go [...]?"* Finally, interviewee O stated that ensuring a product-market fit is key for companies running experiments.

Stakeholder Alignment. Key stakeholders (e.g. C-suite, board, etc.) must be convinced of the experiment. Interviewee M emphasized that it is "*[…] important to build a business case internally that you can sell the solution to your board, the management team. It's super important to get the internal support in order to make a successful project or pilot"*. Interviewee B further noted that thinking about the first step is difficult if important stakeholders are not aligned from the beginning.

Collaboration. Multiple interviewees highlighted the necessity to collaborate with others. As stated by interviewee I, *"[…] we can learn a lot from each other. So I would advise other companies to also join collaboration forums"*. Similarly, interviewee L described that collaboration *"[…] can help both with our expertise, but also then mainly the benefit is that you commit"*.

Knowledge. As interviewee E put it, it is essential to build knowledge by *"[…] invest(ing) in people with expertise. Make sure that you have someone in all teams that can get the necessary competence needed"*. Interviewee E further elaborated on the importance of knowledge by saying that it can increase power *"[…] if you go towards your supply chain, but especially fast forwarding your knowledge level and understanding the scope of things […]"*.

Scaling Decisions. As scaling the experiment has been pointed out as a major barrier to sustainability experimentation by multiple interviewees, some interviewees advised on how to deal with this challenge. As mentioned by interviewee O, *"[...] you need to be realistic on where on the scale you want to be [...] you need to calibrate that continuously and see [...] where (you) want to be"*. Interviewee A stated that it is important to *"[...] come to big scale fast [...] if you're not moving to scale fast enough, you continue being at a higher price point [...] take one initiative at a time instead of spreading yourself thin"*.

Compliance. Several interviewees gave advice on how to deal with regulatory requirements in the industry, stating that it is important to be compliant while continuously experimenting with sustainability initiatives. As interviewee E explained, *"[...] you need to prioritize so that you can ensure that you're going to be compliant as a company"*. Similarly, interviewee F stated that companies should focus on what area they want to make a difference in and be compliant there to ensure that the foundations are right before diving into the experiment.

Embracing Failure. Finally, it was frequently mentioned that failure is a crucial part of the experimentation process. Interviewee C emphasized that "*[...] to experiment and fail is important*

[...]", which was expanded by the statement of interview partner H who said, *"[...] just continue to experiment is very important because without experimenting, you don't learn and you don't move forward"*. Interviewee Q further advised that small companies should embrace their advantage of being agile and subsequently test and fail fast.

5. Analysis

This section is dedicated to the analysis of our findings using our theoretical framework (Chapter 2.6). Drawing from this framework and Gioia et al.'s (2013) methodology, we analyzed findings through Ries' (2011) Lean Startup stages: build, measure, and learn. We systematically mapped identified barriers and opportunities to these stages, developing key learning areas based on interviewee reflections. While acknowledging the iterative nature of experimentation, we structured our analysis according to the build-measure-learn cycle, examining barriers, opportunities, and learnings in each stage (Chapters 5.1, 5.2, 5.3), resulting in a conclusion that updates our proposed framework (Chapter 5.4).

5.1 Build Stage

As depicted in our framework based on the synthesis of literature related to BES, OLT, and CBMI, the first stage of the experimentation process is the build stage, which aligns with Lean Startup thinking according to Ries (2011). This stage begins when a defined idea enters the experimentation process, starting with business case development and progressing to prototype creation and MVP development while incorporating internal feedback cycles. Based on the analysis of our findings, this section identifies the barriers (5.1.1), opportunities (5.1.2), and key learning areas (5.1.3) that can occur in this stage.

5.1.1 Barriers

We identified the following barriers in the initial stages of BES, namely financial considerations, other resource constraints, technological barriers, and economic factors.

Financial pressures are a frequently mentioned barrier to experimentation in academic literature (e.g., Weissbrod & Bocken, 2017). This notion was confirmed by our findings, as this challenge was discussed at length in every interview. While this barrier was mostly generalized as "financial

pressures" in existing literature, we found that it can be broken down into three distinctive aspects, thus adding more nuance to current theoretical understanding.

First, some interviewees mentioned the difficulty of successfully acquiring external funding for sustainability experiments as the financial outcomes of experiments are often difficult to define. This is especially challenging for startups and smaller brands as they generally do not possess financial means that can be spared for sustainability experimentation and thus they often rely on external funding. Additionally, if funds have been acquired, it is mostly spent on day-to-day business concerns such as product development, staffing, and marketing instead of being allocated toward experiments. Furthermore, it was mentioned that sustainability experiments are often conducted primarily for the sake of gaining insights and knowledge instead of generating money. Thus, as most investors are risk averse and expect financial returns, convincing them and receiving sufficient funds is challenging. Guldmann & Huulgaard (2020) confirm this, explaining that companies face significant funding challenges when developing circular business models due to banks' reluctance, limited public funding options, and unclear market demand, which is further complicated by public procurement policies prioritizing cost over sustainability.

Second, findings in both the pre and main study support that receiving a budget from within the organization is another barrier, as multiple interviewees remarked the continuous focus on short-term shareholder value instead of adopting a long-term perspective. The key component to secure a budget for experimentation seems to be a convincing business case, which is a tough determinant to get right, as the success of sustainability initiatives often cannot sufficiently be expressed in monetary terms. Moreover, sustainability projects are still mostly seen as tools for image improvement, thus, boards are oftentimes not willing to invest in initiatives that do not immediately generate a desirable image.

Third, we found that experiments often come at a high cost, especially when building novel business models. This was further reflected in the pre-study, as the experts agreed that brands might struggle with high experimental costs, resulting in the discontinuance of promising sustainability initiatives. For example, the development of sustainable wool products entails significant costs, since the raw material itself comes at a premium price and manufacturing requires specialized facilities (Interviewee D). Furthermore, initial small-scale production often incurs higher marginal costs, as manufacturers typically optimize their operations for

high-volume orders instead of small batches. This shows that the high cost of experimentation may hold organizations back from CBMI.

Our findings further show that companies face additional resource constraints, including limited time and team capacity and knowledge gaps across organizational levels, with most firms lacking dedicated teams and struggling to balance these initiatives with regular operations. Previous literature identifies the lack of experience and organizational inertia as barriers to sustainability experimentation (e.g., Weissbrod & Bocken, 2017). All interviewees discussed various sustainability experiments their organizations have conducted and are planning to continue in the future, showing that they seem to have (some) experience with BES. Thus, we did not find clear evidence for the "lack of experience" barrier identified in previous research. We do, however, believe that this closely relates to the knowledge gap barrier confirmed by our findings. Despite having experimented before, many interviewees mentioned continuously facing significant knowledge gaps. We argue that the findings of this barrier can be divided into two areas, namely internal and external knowledge. Internal knowledge relates to information that is specific to the organization (e.g., company policies, internal communication, etc.). External knowledge refers to information about outside factors (e.g., general industry knowledge, regulations, etc.). All brands seemed to have struggled with one or both of these knowledge gaps, which might be attributed to the increasingly complex regulatory landscape, the difficulty of keeping track of long supply chains, and a plethora of continuously emerging technologies.

Furthermore, although large companies possess the necessary manpower and financial capacity to hire experts, as reflected by Bashir et al. (2020) and Bocken & Geradts (2020), they often struggle with the sheer complexity of their structure. We concluded that essential knowledge about sustainability concerns is oftentimes unknown to staff outside the sustainability team, as multiple interviewees repeatedly emphasized the need to educate staff. Small firms on the other hand predominantly struggle with lacking time and people to work on projects outside their day-to-day scope. Our findings align with Bocken & Geradts' (2020) argument that operational demands and resource constraints can suffocate BMI by consuming employees' time and budget. This explains why some interviewees working for small-scale brands claimed that, while they would like to do more, they simply do not have the capacity.

The findings also show that clothing brands face significant technological barriers in sustainability efforts, including inadequate IT systems for new business models like resale and

rental and insufficient production technology for recycling complex fabrics. The former surprised both us and the interviewees, as this is an obscure challenge that was only identified during the experimentation process. While the identification only happened in later stages of experimentation, we argue that it primarily affects the building stage of an experiment, as it is a fundamental factor when building experiments. The inadequate internal technology proved to be a general problem, which we found interesting as technology, such as cashier systems that can handle both linear sales and second-hand schemes, seem to not be readily available. While this finding is confirmed in the pre-study, with experts arguing that company-internal barriers include limited technological capabilities, previous BES literature has not identified this barrier. We hypothesize that the nuanced nature of technological barriers in fashion, which might differ from those in other sectors, may explain why previous generalized studies do not capture this distinctive constraint.

The second technological barrier, namely the lack of suitable technology for recycling, was mentioned frequently. This finding was surprising as it has not been captured in the literature on BES, but was mentioned multiple times by companies of different sizes. As this seems to be an industry-wide concern, we were curious to further investigate this barrier. Thus, we interviewed a representative of a firm that is looking into offering polyester recycling on a large scale. The interviewee discounted the argument that technology is not sufficiently present, rather they stated that technology was a problem 10 years ago, but nowadays the main issue lies in scaling. Recycling was said to be the easiest part, the infrastructure is what is causing problems since there is a disconnect between waste management and recycling. Even though the production of recycled polyester is more sustainable than producing virgin material, the fact remains that polyester itself is not a sustainable fiber and that other more sustainable alternatives exist. However, the interviewee stated that they are planning to recycle other materials in the future, meaning that this technology can influence the industry significantly. Nevertheless, we were not able to conclude the statements regarding the maturity of production technology for recycling solutions. Thus, it remains an open question whether or not this is a barrier for BES or if it is just perceived as such by fashion brands.

Finally, economic factors also play an important role in the initial experimentation phase. As identified in previous literature, market uncertainties pose a barrier to BES (e.g., Bocken et al., 2021a). Our findings confirm this barrier as fashion brands struggle to maintain sustainability initiatives during economic downturns due to reduced consumer purchasing power and demand,

with companies prioritizing business survival over green investments amid financial constraints. Especially the COVID-19 pandemic had a significant impact on the fashion industry as it decreased the consumer demand for sustainable garments, resulting in lower willingness to experiment for fashion brands (Interviewee 4).

5.1.2 Opportunities

Despite numerous barriers, we identified opportunities occurring in the initial stages of BES, namely positive industry impact and collaboration opportunities.

Bocken & Geradts (2020) explain that sustainability in business requires companies to align short-term shareholder value and long-term societal and environmental needs, with successful companies viewing sustainability as a driver of both current and future performance. This shows that experimentation can be a catalyst for organizational success as well as an opportunity for positive societal and environmental changes. Our findings extend this argument by conveying that BES can positively influence the entire industry and not just the firm itself, with both small and large companies playing different but important roles in driving change. It has become apparent that smaller fashion brands often pioneer novel innovative approaches while the actions of larger brands can create broader industry-wide impacts due to their influence and visibility. This dynamic creates a *"pack mentality"* in the Swedish fashion industry where companies follow and learn from each other's sustainability initiatives (Interviewee Q). We argue that this opportunity affects the way firms build new business model ideas, thus it connects to the initial stage of our framework.

Our data collected in both the pre and main study confirms that the Swedish fashion industry stands out as a uniquely collaborative environment where brands openly share information and work together on sustainability experiments, with interviewees emphasizing that collaboration, both within the industry and across sectors including academia, startups, and suppliers, is essential for successful sustainability experimentation and overcoming common barriers. Our analysis revealed two collaboration types: fashion brands collectively developing solutions through organizational partnerships, and companies collaborating across different supply chain segments. Bocken & Geradts (2020) confirm these findings, as they explain that collaborative innovation and cross-sectoral partnerships are crucial for addressing complex sustainability challenges, emphasizing that successful BMI requires engaging multiple stakeholders both internally and externally. As collaboration was mostly mentioned in connection with idea

generation and conceptualization in the first stages of experimentation, we connect this opportunity with the build stage as shown in our framework.

5.1.3 Key Learning Areas

Based on the analysis of the barriers and opportunities of the build stage as well as the findings on advice given to companies looking into implementing BES, we identified the following two key learning areas.

Firstly, to successfully experiment, a convincing business case must be built, allowing for support from the board and investors relevant for gaining both financial and organizational support for the experiment. This is a relevant insight as double-loop learning can be facilitated by creating and presenting a convincing proposal for sustainability experiments (Argyris, 1977). Not only can the organization learn from both failed and successful experiments, but it could also force firms to critically question their organizational values, especially about sustainability (i.e. determining whether a sustainable experiment would have been accepted if sustainability was rooted more heavily in the firm's purpose). This learning allows firms to combat the barrier of financial constraints, as it aims to rally support for initiatives that contribute to CBMI. Our findings further show that it is easier to build a convincing business case when collaborating with others, as a stronger case can be built when multiple stakeholders believe in the same idea and thus exploit the aforementioned opportunity of collaboration.

The second learning area relates to the acquisition of expertise and knowledge about experimentation, underlying processes, and necessary steps to be taken as well as the integration of feedback into the experimentation process from the beginning. As reflected in both existing and our findings, considerable knowledge gaps and a lack of organizational competencies are significant barriers to successful BES, requiring companies to focus on investing in educational programs or acquiring new external expertise. Another facet of knowledge is the process of learning by experimenting often and receiving fast responses and feedback on hypotheses. As mentioned by interviewee Q, this advice is particularly essential to small firms as their key advantage in experimentation is their speed and agility. This learning is in line with Levitt & March's (1988) notion of learning from experience, as the knowledge generated during experimentation informs sustainability experiments in later stages.

5.2 Measure Stage

In the measure stage, the developed experiment is tested in a real-world setting to gather customer and stakeholder feedback, with successful trials indicating readiness for launch. This section analyzes the barriers (5.2.1), opportunities (5.2.2), and key learning areas (5.2.3) that can occur in this stage.

5.2.1 Barriers

Supply chain issues and conflicting consumer behavior have been identified as the main barriers in the measure stage of BES. As analyzed above, previous literature has defined market uncertainties as a barrier (e.g. Bocken et al., 2021a; Weissbrod & Bocken, 2017), however, it does not go into much detail nor does it investigate other barriers related to the external environment of the firm but rather focuses on company-internal challenges. Although numerous factors can constitute market uncertainty, we connected it to some of the challenges identified in the findings, thus adding more dimension to the current theoretical understanding.

Besides general economic factors, this barrier can be related to supply chain uncertainties which were frequently mentioned in the interviews. Our findings show that the industry's rigid supply chain, characterized by short production cycles, high minimum order quantities, and long lead times, significantly hinders experiments. This can impede brands from introducing new, eco-friendly materials or experimenting with small-scale production runs, limiting their ability to respond to changing consumer demands and environmental concerns. In the context of experimentation, the measure stage fundamentally centers on empirical validation through real-world testing and stakeholder feedback acquisition. Therefore, we posit that the identified barrier is relevant specifically within this phase.

Secondly, many interviewees argued that the industry faces challenges in implementing sustainable practices due to conflicting consumer behavior. While consumers express interest in sustainability, they often prioritize lower prices over eco-friendly options. This disconnect between stated values and actual purchasing behavior was argued to hinder the adoption of circular business models and limit the potential for experimentation. The pre-study findings confirm this barrier, as a key concern raised was the gap between consumers' stated interest and actual buying behavior which is particularly evident when it comes to paying a premium for more sustainable options.

5.2.2 Opportunities

Consumer behavior was allocated a conflicting role in our findings. Some interviewees highlighted that it represents a barrier to BES, while others expressed their conviction that it is an opportunity for the industry to innovate. They highlighted the receptiveness of the Swedish market to circularity concepts and the growing awareness of consumers regarding ethical and environmental issues. This positive outlook suggests that there is potential for the industry to drive sustainable change by meeting the evolving demands of environmentally conscious consumers. A possible explanation for this increasing consciousness can be found in our pre-study, where the experts mentioned that environmental consciousness is embedded in the Swedish identity. Besides identifying market uncertainties as a barrier to experimentation, which could also relate to consumers, existing literature does not specifically mention this factor as either a barrier or opportunity. Therefore, we enhance current theoretical understanding by identifying this previously unmentioned factor. Whether consumer behavior is predominantly a barrier or opportunity, however, remains unclear, and further investigation is necessary as this would go beyond the scope of this research project.

5.2.3 Key Learning Areas

The main learning derived from the measure stage is related to measuring and following up. As discussed in earlier chapters, receiving funds for BES is a cumbersome endeavor as sustainability experiments often do not generate immediate profits. A key learning here is to rethink how the success of a business experiment for sustainability is defined within the organization and find alternative ways to measure its outcomes. In practice, this general learning might look different for organizations of different sizes.

Defining different metrics to measure the success of sustainable experiments is a solution that could benefit both small and large-scale organizations. Measuring success in terms of customer feedback rather than sales numbers was a potential measure that was highlighted numerous times during the interviews. By doing so, brands can capture how customers feel about a sustainable product, which in turn allows for a better understanding of customer sentiment. For large brands specifically, our findings showed another potential avenue to combat this hurdle. By establishing dedicated sustainability budgets in separate financial accounts, firms can ensure that BES does not impact the main business's financial bottom line (Interviewee A). This further promotes the continuous development of sustainability experiments and related activities. We deem this to be a valuable learning for large companies who have the financial means, however, it must be

highlighted that small and medium-sized firms will likely not be able to realize such a measure due to their limited finances.

Another learning aimed at mitigating uncertainties involves developing robust organizational mechanisms for following up and evaluating experiments. Drawing on Argyris' (1977) conceptualization of double-loop learning, this approach emphasizes creating an organizational culture of continuous reflection and systematic knowledge generation. While this does not completely resolve supply chain or technology-related issues, it ensures that all essential stakeholders are in the loop about potential problems that could arise along the experimentation process. For example, having sufficient knowledge about specific challenges in the supply chain, such as long lead times, enables key actors to make informed decisions about how to combat these problems efficiently.

5.3 Learn Stage

The learn stage consists of evaluating the experiment's performance, deciding whether to persevere, pivot, or perish, and potentially modifying the business model to align with circularity principles. This section follows the same structure as previous sections, presenting barriers (5.3.1), opportunities (5.3.2), and key learning areas (5.3.3) that can arise in this stage.

5.3.1 Barriers

The last two barriers that emerged from our findings, namely scaling difficulties and regulatory concerns, belong to the third stage of our framework.

Scaling up sustainability initiatives from a small-scale experiment to ultimately a new CBM is arguably a major challenge for the fashion industry, as it involves complex logistical and financial considerations as well as the accurate interpretation of data collected from small-scale experiments to inform larger-scale implementations. We acknowledge that, usually, the scale-up of an experiment lies outside of the experimentation process as it goes one step further, which might explain the absence of this barrier in existing literature. We do, however, deem it to be relevant for our study as the goal of BES, as we define it, is a move towards CBMs, which ultimately necessitates the scale-up of a sustainability experiment. Additionally, the issue of scaling was frequently mentioned in our findings, thus, we opted to include it in our analysis.

Secondly, many interviewees highlighted the significant impact of environmental regulations, particularly the CSRD, on the fashion industry. Similar to consumer behavior, our findings do not clearly answer whether regulations are a barrier or opportunity, as some interviewees viewed it to be a driver for experiments while others critically reflected that it creates barriers. Some argued that regulations, while necessary for environmental protection, can impose significant administrative burdens on companies, potentially hindering their ability to innovate and experiment with sustainable practices. This finding is confirmed by Guldmann & Huulgaard (2020) who explain that companies face regulatory barriers to implementing circular business models, primarily due to labor taxation policies favoring new manufacturing over repair and reuse activities, waste classification restrictions on recaptured goods, and market structures that make virgin materials more economically attractive than recycled materials.

5.3.2 Opportunities

The learn stage further consists of two opportunities, namely regulations and company-specific factors.

As mentioned, regulations presented a multifaceted and potentially conflicting role in our research findings. Ultimately, most interviewees, regardless of company size, believe they are a necessary and positive force for change, arguing that government mandates with significant financial consequences are the most effective way to drive sustainable transformation in an industry unlikely to self-regulate. This aligns with our pre-study findings, as industry professionals also viewed regulations as a positive catalyst for sustainable practices, emphasizing the need for fair, comprehensive rules that hold fashion brands equally accountable. While regulations have been identified as a barrier in previous literature (i.e. Guldmann & Huulgaard, 2020), our findings show the duality of this factor and thus represent another contribution to current BES research. This is a significant finding, especially because regulations are becoming increasingly important, as it pushes companies to change and has proven to inspire innovation and the development of CBMs.

The interviewees also emphasized that company size and culture play crucial roles in sustainability innovation, with smaller organizations having greater flexibility to experiment, and those fostering an innovative mindset and culture being better positioned to implement and scale sustainable initiatives. Company size in particular is a factor that was attributed contradictory meaning in both our findings as well as existing research. While large firms were said to have an

advantage due to their resources available, they were also said to be rather rigid when it comes to deciding to persevere, pivot, or perish (Eisenmann et al., 2013). This finding relates to existing literature, as larger firms face unique challenges in implementing BES due to established business models and bureaucratic structures, while simultaneously possessing sufficient resources to conduct comprehensive experiments (Bashir et al., 2020; Bocken & Geradts, 2020). Small brands on the other hand, while possessing less financial means and manpower, can benefit from their agility and flexibility. In conclusion, despite individual challenges, overall, either company size can be an opportunity for driving experimentation in the organization.

5.3.3 Key Learning Areas

The final learning area we derived from our findings and existing literature is called "launch & scale" as making an informed decision whether to persevere, pivot, or perish, is a key milestone of every business experiment.

When deciding to persevere and scale as a next step, findings show that it is important to be realistic about both the scale and price point the company aims for, showcasing the importance of being knowledgeable about both internal capabilities as well as the industry and customers (Argyris, 1977; Teece, 2007). Despite perhaps not resulting in CBMI, learnings can also be attributed to the decision to pivot or perish during the experimentation process. Several interviewees emphasized failure as an essential aspect of the experimentation process. Findings show that learning, progress, and rapid adaptation are intrinsically linked to the willingness to experiment and quickly learn from unsuccessful attempts. Another component of learning resulting from our research is the necessity to experiment to avoid stagnation. This showcases an instance of a learning that occurs at the latter stages of an experiment but has an influence on the building stage of future idea generation.

5.4 Critical Reflection on Extant Literature

Despite achieving theoretical saturation through our interview methodology, some of the barriers and opportunities identified in previous literature have not been found and confirmed in this research project. Two of these will be discussed below and we aim to give an explanation for why these might not have been found in our research.

While Bocken & Coffay (2023) highlight the lack of routine for experimentation with circular business models, our findings suggest a different reality in the Swedish fashion industry. Despite varying levels of expertise and market power, all 17 brands have engaged in sustainability experiments and seem to have tools in place that allow them to systematically test ideas in a small-scale environment. This willingness to experiment can be attributed to the industry's creative and dynamic nature, its sensitivity to consumer demands, and the influence of young, environmentally conscious professionals. Additionally, as shown in our findings, the Swedish fashion industry's distinctive national identity is characterized by a deep environmental consciousness which can serve as a powerful driver for developing sustainable solutions.

Furthermore, Bocken & Geradts (2020) argue that uncertainty avoidance leads to financial risk aversion and a low tolerance for complexity, which impedes investment in an exploration of business model innovation by discouraging companies from testing new approaches. While our findings show that organizational resistance to investing in sustainability experiments can be a barrier to experimentation, as securing a budget remains challenging, all participating fashion brands have showcased a willingness to experiment despite the risk and ambiguity of the outcomes. This might be explained by the combination of the awareness that the industry needs to change and the competitive drive in the fashion industry to be *"best in class"* (Interviewee 3).

5.5 Conclusion

The purpose of our study was to enhance understanding of sustainability experimentation in the Swedish fashion industry, specifically identifying barriers, opportunities, and key organizational learning areas to support fashion brands in their sustainability journey and contribute to the developing research field of BES. Therefore, the following research question was formulated:

What are the barriers and opportunities for business experimentation for sustainability in the Swedish clothing industry, and what are the key learning areas to leverage the opportunities and overcome the barriers?

Overall, the Swedish fashion industry, with its unique contextual insights of environmental consciousness, competitive drive, and embedded cultural emphasis on sustainability, emerged as a particularly interesting and unique case study. Our research reveals a nuanced landscape of barriers and opportunities, confirming and extending existing theoretical understanding of BES as well as adding new findings to existing literature.

Our study provides a nuanced examination of barriers to sustainability experimentation in the Swedish fashion industry. We expand on extant literature by identifying more complex financial constraints, including difficulties in external funding, internal budget allocation, and high experimental costs. Contrary to previous studies, we find that knowledge barriers are more intricate than a simple lack of experience. Our research distinguishes between internal and external knowledge gaps, particularly around emerging technologies and regulatory challenges. Technological hurdles were a novel finding specific to the fashion industry, especially concerning IT systems and recycling production technologies. Market uncertainties, previously identified by Bocken et al. (2021a), are confirmed and expanded upon. We discovered that supply chain issues and consumer behavior significantly impact experimentation. Interestingly, the Swedish context revealed a paradox between societal sustainability awareness and actual consumer actions.

A novel finding was the challenge of individual brand impact, with data suggesting that collaborative approaches are crucial for meaningful industry transformation. We support Bocken & Geradts' (2020) arguments about collaborative innovation, highlighting the Swedish fashion industry's unique collaborative environment. Our research also presents a more complex view of regulations, demonstrating their dual nature as both barriers and opportunities, contrasting with Guldmann & Huulgaard's (2020) previous perspectives. Additionally, we provide a nuanced understanding of how company size influences BES, revealing unique advantages and challenges for both small and large organizations. The study emphasizes the critical challenge of scaling sustainability initiatives from small experiments to new circular business models, arguing for an expanded theoretical understanding of BES.

Next, we conclude the key learning areas for each experimental stage. For the build stage, we observed learnings related to building a convincing business case to secure financial and organizational support and acquiring expertise to overcome knowledge gaps and facilitate continuous learning. In the measure stage, we conclude that key learnings are related to redefining success metrics beyond financial performance, such as customer feedback, and establishing dedicated sustainability budgets. Additionally, developing robust organizational mechanisms for following up and evaluating experiments can help mitigate uncertainties and foster a culture of continuous learning. For the learn stage, we conclude that key learnings lie in making informed decisions about scaling, pivoting, or perishing, recognizing the value of failure as a learning opportunity, and the importance of continuous experimentation to avoid stagnation.

Finally, our extended theoretical framework, depicted in Figure 4, synthesizes the empirical findings within the established Lean Startup build-measure-learn cycle. While acknowledging the inherently iterative nature of BES, we deliberately mapped the barriers, opportunities, and key learning areas across each experimental stage to facilitate a systematic analysis. The comprehensive framework not only reproduces barriers and opportunities previously identified in extant literature (dashed line) but also delineates our novel and extending contributions (dotted line). We explicitly differentiate between:

1. Barriers and opportunities confirmed by existing scholarly discourse
2. Emergent insights that enhance or extend current theoretical understanding

As analyzed above, there are four barriers and two opportunities (see section 5.1 for more details) that significantly affect the process of turning ideas into experiments in the build phase. In the measure phase, to gain insights into the experiment, we extend the framework with two components (see section 5.2 for more details) that predominantly influence this step. Finally, three determinants (see section 5.3 for more details) help firms learn from the experiment and make an informed decision on subsequent steps in the learn stage. Finally, all above mentioned key organizational learnings were allocated to the respective stage they arise in (bottom section framed with dotted line).

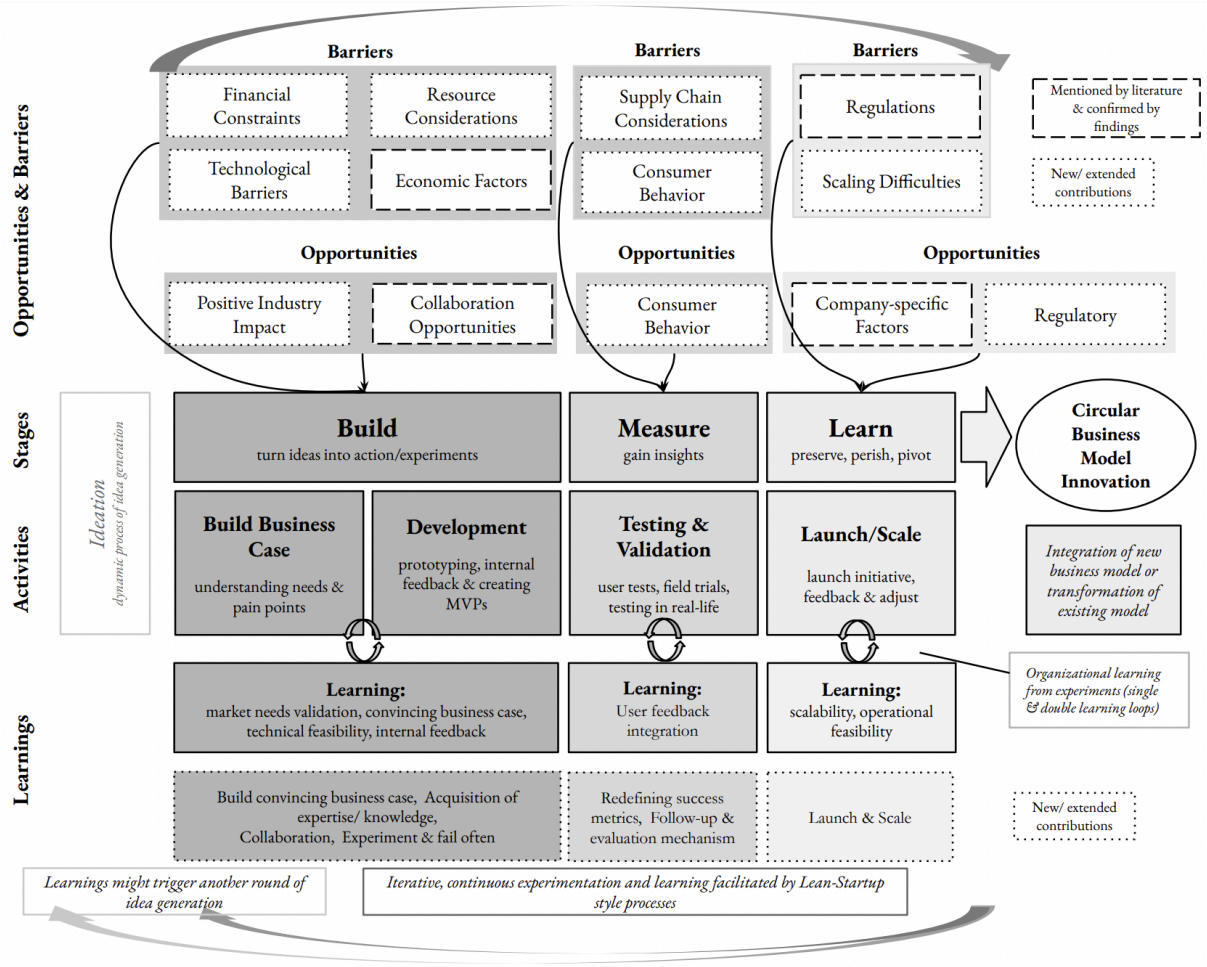


Figure 4. Extended Theoretical Framework

6. Discussion

This study concludes by presenting our theoretical contributions (6.1) and practical implications (6.2), followed by outlining this study's limitations (6.3) and suggestions for future research (6.4).

6.1 Theoretical Contributions

Our research establishes its theoretical relevance by expanding the understanding of BES, specifically by exploring barriers and opportunities, and by contributing to the comprehension of the connections between OLT, CBMI, and BES.

First, we address the lack of sector-specific barriers and opportunities to BES by identifying distinctive factors in the clothing industry. As mentioned in Chapter 2.5, the extant literature presents generalized barriers and opportunities. Consequently, we aimed to add nuance to better reflect the influencing factors faced by fashion brands (Bocken & Geradts, 2020). For example,

we highlighted that consumer sentiment acts both as a positive and negative influence on the brands' experience of experimenting. The thesis also adds depth to the financial barriers to BES, a challenge frequently mentioned in literature, by comprehensively identifying factors including external funding acquisition, internal budget allocation, and managing high experimental costs (Guldmann & Huulgaard, 2020). Furthermore, we add nuance to technological and supply chain issues as well as regulatory concerns. By using a comparative case study design with firms of different sizes, we extend theoretical implications beyond the existing focus on large enterprises, thereby increasing the generalizability of our findings on BES barriers and opportunities (Bocken et al., 2017).

Second, we highlight the dual role of BES, as both an organizational learning mechanism and a tool for legitimizing new BMs, by adding to the understanding of how BES relates to OLT and CBMI (Bojovic et al., 2018). We do so by identifying key learning areas based on both experienced barriers and opportunities as well as insights gained throughout the process of experimentation. Firms who performed numerous experiments and consequently gathered insights on how to draft a convincing business case or how to measure success were able to determine an improved way of learning from experiences and thus find themselves in a more advantageous position when building dynamic capabilities. As Zollo & Winter (2002) explain, the transformation of learning into dynamic capabilities is a structured process that involves the interplay of experience, articulation, and codification, enabling organizations to adapt and evolve their operating routines effectively. For example, our case study demonstrated how firms were able to leverage their gathered knowledge to quickly respond to emerging opportunities by launching another experiment. This showcases how BES positively affects the creation of dynamic capabilities and consequently organizational learning (Teece, 2007). These capabilities further connect CBMI to BES as dynamic capabilities created from learnings considerably determine how effectively organizations move towards circular business models (Bocken & Konietzko, 2022; Guldmann & Huulgaard, 2020). For example, learning about the redefinition of success can help organizations adjust stakeholders' mindsets and legitimize a circular transformation of the BM, which relates to the dynamic capability of transforming by Guldmann & Huulgaard (2020).

6.2 Practical Implications

This research further provides actionable insights for Swedish clothing industry practitioners, aiming to inspire and guide industry players towards more sustainable business practices and

contribute to the broader industry-wide sustainable transition. Our findings show the following practical implications.

First, successful BES requires building a compelling business case that gains board and investor support, leveraging collaboration, and double-loop learning to critically examine organizational values and overcome financial constraints. Companies must invest in knowledge acquisition, develop experimental expertise, and embrace rapid feedback loops, recognizing that learning through frequent experimentation and stakeholder collaboration is crucial for advancing CBMI. Collaboration emerges as a crucial strategy, with managers encouraged to build cross-organizational and cross-sectoral partnerships that can accelerate sustainable innovation.

Second, defining diverse metrics for measuring BES success can benefit organizations of all sizes, with a focus on customer sentiment and feedback rather than traditional sales metrics. By establishing dedicated sustainability budgets and creating robust mechanisms for experiment evaluation and follow-up, companies can promote continuous innovation, mitigate uncertainties, and develop a culture of systematic reflection and learning that enables more informed decision-making across the organization.

Finally, we highlight the importance of being realistic about scaling capabilities, embracing failure as a learning opportunity, and recognizing that experimentation itself is a key mechanism for avoiding organizational stagnation and driving continuous innovation, thus proposing developing an organizational culture open to innovation and experimentation.

By implementing these strategic approaches, fashion brands can effectively navigate the complexities of sustainability transitions, transform their business models toward circularity, and contribute to the broader systemic change needed in the industry. While this thesis focused on the clothing industry, we believe that our findings are also relevant for practitioners in other industries facing similarly complex characteristics.

6.3 Study Limitations

Our research, while providing valuable insights into BES in the Swedish fashion industry, is subject to several important limitations that must be acknowledged.

The Swedish context presents a unique sustainability-focused environment that may not be representative of the fashion industry at large. The findings, therefore, cannot be readily generalized, as regulatory frameworks, cultural attitudes, and corporate approaches to sustainability likely differ significantly between countries. While this limitation could have been mitigated by increasing the sample size, the project's time constraints impeded this approach.

Another limitation is the potential for interviewee bias. The participating companies may have been inclined to present their sustainability efforts in the most favorable light, while potentially leaving out less flattering aspects. This social desirability bias could possibly skew the perceived effectiveness and depth of their sustainability experiments (Bell et al., 2019). Also, the risk of greenwashing cannot be overlooked. Despite the case brands' apparent commitment to sustainability, the actual environmental impact of their experiments remains uncertain. There is a legitimate concern that experiments might be primarily motivated by branding opportunities, leveraging sustainability as a competitive advantage in a market where it has become a customer expectation. To mitigate these limitations, researchers could triangulate interview data by cross-referencing with sustainability reports and independent sources, integrate standardized sustainability metrics to quantify experiment effectiveness, and conduct longitudinal lab experiments to validate the authenticity of sustainability efforts.

Finally, we acknowledge our own potential researcher bias, as our personal interest in sustainability may have influenced the findings' interpretation. This subjective lens could potentially impact the objectivity of our analysis and conclusions. While we analyzed interview notes and transcripts independently to combat this bias, researchers could also consider including external reviewers to examine the interpretation of data.

6.4 Future Research

In light of our research question, several avenues for future research emerge. First, our study captured a snapshot of companies at a specific point in time, which suggests the value of conducting longitudinal research that tracks organizations throughout their sustainability experimentation journey. Such an approach would provide deeper insights into the evolution of experimental practices and learning patterns over time.

Furthermore, our findings revealed three particularly intriguing barriers and opportunities that require more nuanced investigation. The maturity of technology emerged as an ambiguous

factor, with unclear implications for BES in the fashion industry. Similarly, consumer behavior presented conflicting perspectives, suggesting the need for a more focused study examining how customer attitudes and demands influence firms' experimental practices. Regulations, which are increasingly pressuring companies and are expected to become more stringent, represent another critical area for future research. A dedicated investigation could illuminate how regulatory landscapes shape and potentially drive sustainability experimentation.

Lastly, while our study deliberately sampled a balanced mix of small, medium, and large-sized firms within the Swedish context, future research could benefit from a more targeted approach. Studies focused exclusively on either start-ups or established players would allow for a more granular understanding of the barriers and opportunities specific to different organizational sizes and stages of development.

These suggested research directions build upon our current findings and further promise to deepen the academic and practical understanding of BES in the fashion industry.

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8. Appendix

8.1 Summary of Literature Review

Author(s)	Key Points
Andries et al. (2013)	• Identifies two approaches to business model development under uncertainty: (1) focused commitment, which limits variety and risks long-term survival, and (2) simultaneous experimentation, which fosters variety and improves the chances of identifying viable business models • Experimentation may reduce initial growth but significantly enhances long-term survival prospects by allowing ventures to explore multiple business models • Simultaneous experimentation can generate variety in business models without necessitating distant searches, highlighting how a disciplined approach to experimentation balances planning and action
Chesbrough (2010)	• Business models are crucial for realizing the economic value of technologies and can significantly affect market outcomes • Companies face barriers to business model innovation, including cognitive biases and conflicts with existing assets • Effective business model innovation requires experimentation and organizational processes that support trial and error
Bojovic et al. (2018)	• Identifies three roles in business modeling experimentation: learning, signaling, convincing • Distinguishes between purposeful interactions and experimental projects as two forms of experimentation • Highlights how experimentation serves as a strategic action for legitimacy, enabling firms to engage with stakeholders and validate business models
Bocken et al. (2021a)	• Identifies BES as emerging research field, focusing on experimentation practices in businesses to develop sustainable products and services with limited risks and resources • Experimentation is influenced by values and the business environment, impacting sustainable value creation and innovation • The role of business experimentation in sustainability transitions remains underexplored, highlighting the need for empirical studies
Ries (2011)	• Startups focus on learning what customers value through frequent experiments • Build-Measure-Learn Loop: The core activity is turning ideas into products, measuring customer response, and learning to pivot or persevere
Blank (2013)	• Introduces the Customer Development model: a four-step process (Discovery, Validation, Creation, Building) for startups • Stresses the importance of engaging early customers to validate product-market fit • Highlights that startups should focus on learning and discovery rather than executing predefined plans
Bocken et al. (2017)	• Business model experimentation is crucial for large retailers to address sustainability challenges and drive circularity initiatives • The process is emergent and iterative, requiring adaptability and collaboration • Confidence in experimentation as a business capability increases through practical engagement and academic-industry partnership

Bocken et al. (2018)	• Experimentation fosters internal and external engagement to initiate sustainability transitions in businesses • It enables the testing of assumptions across all building blocks of a business model • Collaboration with external partners facilitates the experimentation process, which is iterative and requires ongoing learning and sustainability checks
Bocken & Snihur (2020)	• Lean Startup facilitates iterative experimentation, promoting continuous learning and reduces uncertainty in developing novel business models • Involving various stakeholders enhances the novelty and impact of BMI • Lean Startup can lead to radical innovations through serendipitous discoveries during experimentation
Weissbrod & Bocken (2017)	• Emphasizes the need for firms to integrate economic, social, and environmental value through radical innovations for sustainability • Identifies experimentation as a crucial capability for established firms to overcome barriers to radical innovation • Highlights the challenges of applying lean startup principles within large firms, noting that a corporate mindset focused on economic value often dominates, hindering rapid experimentation
Bashir et al. (2020)	• Investigates BES in fast-moving consumer goods (FMCG), focusing on refill-based business models for products aimed at reducing plastic waste • Consumer habits are difficult to change, with price, convenience, and functionality being significant factors influencing the acceptance of sustainable solutions. • Shows that behavioral interventions, such as message framing that emphasizes environmental friendliness and safety, can effectively increase consumer willingness to adopt sustainable solutions
Bocken et al. (2021b)	• CBME is an iterative approach to develop and test circular value propositions in real-life contexts with stakeholders, focusing on empirical data and rapid learning • Key characteristics include designing and testing new propositions and contributing to broader transitions towards a circular economy • Experimentation is essential for overcoming inertia in established firms and facilitating the transition to sustainable and circular business practice
Baldassarre et al. (2020)	• Addresses the significant gap between conceptualizing sustainable business models and their actual market implementation • Emphasizes using prototyping to test and validate sustainable business model ideas through small-scale pilots, integrating aspects of desirability, feasibility, viability, and sustainability • SBM Pilot Canvas tool to support organizations in planning and executing sustainable business model pilots effectively
Bocken & Coffay (2023)	• Combines lean startup and effectuation principles to support circular business model innovation • Develops a practical tool to inspire and guide businesses in experimenting with circular economy concepts • Effectuation enhances lean startup methods by focusing on available resources and stakeholder collaboration, aiding in low-cost experimentation
Bocken & Geradts (2020)	• Strong dynamic capabilities (sensing, seizing, transforming) are essential for sustainable business model innovation (SBMI) in multinational corporations

	• Organizational design factors (institutional, strategic, operational) affect the development of dynamic capabilities needed for SBMI • Identifies interconnected barriers (e.g., short-termism) and drivers (e.g.collaborative innovation) that impact SBM
Das & Bocken (2024)	• Develops typology of six regenerative business strategies: leadership, nature & social regeneration, responsible sourcing, human health, and employee focus • Emphasizes collaboration with stakeholders for effective regeneration • Highlights the necessity of transparent impact measurement to avoid greenwashing

Table 1. Summary of Key Points in BES

Author(s)	Key Points
Argyris (1977)	• Types of Learning: Single-loop learning vs. double-loop learning; error correction without questioning underlying assumptions vs. re-evaluating objectives and values • Inhibiting Factors: Organizational learning systems suppress double-loop inquiry; reliance on abstract data and control creates barriers to effective learning and error correction
Levitt & March (1988)	• Organizations learn by encoding historical inferences into routines that guide behavior • Direct experience and organizational search drive changes in routines; trial-and-error experimentation and learning from others are crucial
Saadat & Saadat (2016)	• Organizational Learning is a strategic tool for competitive advantage; enhances employee knowledge, fosters growth, builds dynamic learning organizations • Types of Learning: Differentiates between hereditary, experiential, vicarious, monocyclic, two-cyclic, and three-cyclic learning • Strong organizational culture necessary for learning; encourages commitment, transparency, risk-taking, and viewing mistakes as learning opportunities
Teece (2007)	• Dynamic Capabilities: Sensing, seizing, and reconfiguring capabilities essential for sustaining competitive advantage in rapidly changing environments • Importance of collaboration with external entities to enhance innovation and market responsiveness

Table 2. Summary of Key Points in Organizational Learning Theory

Author(s)	Key Points
Guldmann & Huulgaard (2020)	• Highlights significant variation in barriers encountered based on factors beyond size, industry, and customer segment; emphasizes the importance of internal settings and ambitions • Empirical findings correspond well with existing literature on sustainable innovation barriers, yet introduces new barriers specific to CBMI not previously reported
Gleissdoerfer et al. (2020)	• Overview and synthesis of definitions for circular business models (CBM) and circular business model innovation (CBMI) • Identification of four circular business model strategies: cycling, extending, intensifying, dematerialising
Antikainen & Valkokari (2016)	• A structured approach for sustainable circular business model innovation, integrating macro, meso, and micro levels • Emphasis on interconnected stakeholders and value co-creation within circular business models • Importance of systemic and radical innovations for overcoming challenges in transitioning to a circular economy
Bocken & Konietzko (2022)	• Utilizes visioning, sensing, seizing, and transforming stages to understand and enhance circular business model innovation (CBMI) practices • Identifies specific practices and tools employed by corporations (e.g., Design Thinking, Lean Startup) to facilitate CBMI, emphasizing sustainability validation • Highlights the importance of shaping locally adapted circular ecosystems through collaboration and experimentation for effective implementation of CBMs
Rønn et al. (2023)	• No agreement on circular business model design for digital health solutions; need for tailored approaches • Inclusion of hardware, software, and data; contamination risks complicate circularity in healthcare • Different product categories necessitate unique circular business model adaptations due to varying life cycles

Table 3. Summary of Key Points in CBMI

8.2 Pre-study Interviewees

Interviewee	Role or Job Title	Interview Date	Duration
Interviewee 1	CEO of an organization for Swedish fashion brands	10.10.24	35 minutes
Interviewee 2	Project Director for a member owned trade association in the Swedish fashion industry	11.10.24	40 minutes
Interviewee 3	Professor for Fashion Science	11.10.24	60 minutes
Interviewee 4	Team member of a research program focusing on circular economy in the fashion industry	08.10.24	55 minutes
Interviewee 5	Postdoc, Junior Professorship in Sustainability Assessment & Policy	09.10.24	30 minutes

Table 4. Overview of Pre-study Interviewees

8.3 Case Companies

Company	Size	Maturity Level	Price Tier	Product Offering
Company A	Large	Established	Low price	Broad
Company B	Large	Established	Low price	Broad
Company C	Large	Established	Low price	Broad
Company D	Large	Established	Medium-high price	Broad
Company E	Large	Established	Low price	Broad
Company F	Large	Established	Medium price	Targeted
Company G	Large	Mature	Medium price	Broad
Company H	Large	Mature	Low price	Broad
Company I	Medium	New venture	Medium price	Broad
Company J	Medium	Mature	Medium price	Broad
Company K	Medium	Established	Medium price	Targeted
Company L	Medium	Mature	Medium price	Targeted
Company M	Medium-small	Established	High price	Niche
Company N	Small	New venture	Medium price	Targeted
Company O	Small	New venture	Medium price	Niche
Company P	Small	New venture	Medium price	Targeted
Company Q	Small	New venture	Medium price	Niche

Table 5. Selected Companies Overview

Interviewee	Job Title	Interview Date	Duration
Interviewee A	Sustainability Manager	15.10.2024	45 minutes
Interviewee B	Business Innovation Lead	23.10.2024	39 minutes
Interviewee C	Vice President Sustainability	18.10.2024	38 minutes
Interviewee D	Sustainability & Innovation Manager	31.10.2024	40 minutes
Interviewee E	Sustainability Project Manager	14.10.2024	55 minutes
Interviewee F	Chief Brand & Product Officer	28.10.2024	35 minutes
Interviewee G	Business Expert Sustainability	15.10.2024	38 minutes
Interviewee H	Sustainability Coordinator	15.10.2024	32 minutes
Interviewee I	Head of Production & Sustainability	15.10.2024	43 minutes
Interviewee J	Co-founder	22.10.2024	40 minutes
Interviewee K	Business Innovation Analyst	17.10.2024	35 minutes
Interviewee L	Co-founder	14.10.2024	43 minutes
Interviewee M	Sustainability Coordinator	14.10.2024	41 minutes
Interviewee N	CEO	15.10.2024	31 minutes
Interviewee O	CEO	18.10.2024	40 minutes
Interviewee P	Co-founder	16.10.2024	51 minutes
Interviewee Q	Co-founder	17.10.2024	45 minutes

Table 6. Overview of Interviewees

8.4 Expert Interview Guide

Topic	Questions
Introduction	*Brief introduction and explanation of the research project*
Background	• Can you briefly describe your role as **insert role**? • What is your experience with environmental sustainability in the fashion industry? How has the Swedish fashion industry evolved in terms of sustainability over the past few years? How does it stand out? • How would you characterize a sustainable business model (SBM) in the fashion industry? *SBM - Definition used in the thesis: We define sustainable business models as an organizational framework that creates, delivers, and captures value while maximizing resource efficiency and minimizing environmental impact through circular principles.*

Business Experimentation for Sustainability	*BES - Definition used in the thesis: Business experimentation for sustainability is a process that enables companies to transition to more sustainable business models through systematic experimentation, allowing them to test and refine sustainable practices and value propositions.*
	
	• Have you observed sustainability experiments (or prototyping/A/B testing/MVPs, etc.) in the Swedish fashion industry?
	  ○ If yes, what have you observed? Can you provide an example? How was sustainability implemented in this experiment?
	  ○ If not, what are some initiatives that could be related to sustainability?
	• What has the general approach of clothing companies been? Did you observe any trends?
	• How has the willingness to experiment for sustainability developed over the last years? Why do you think this is the case?
	• What are the differences between established companies and new entrants?

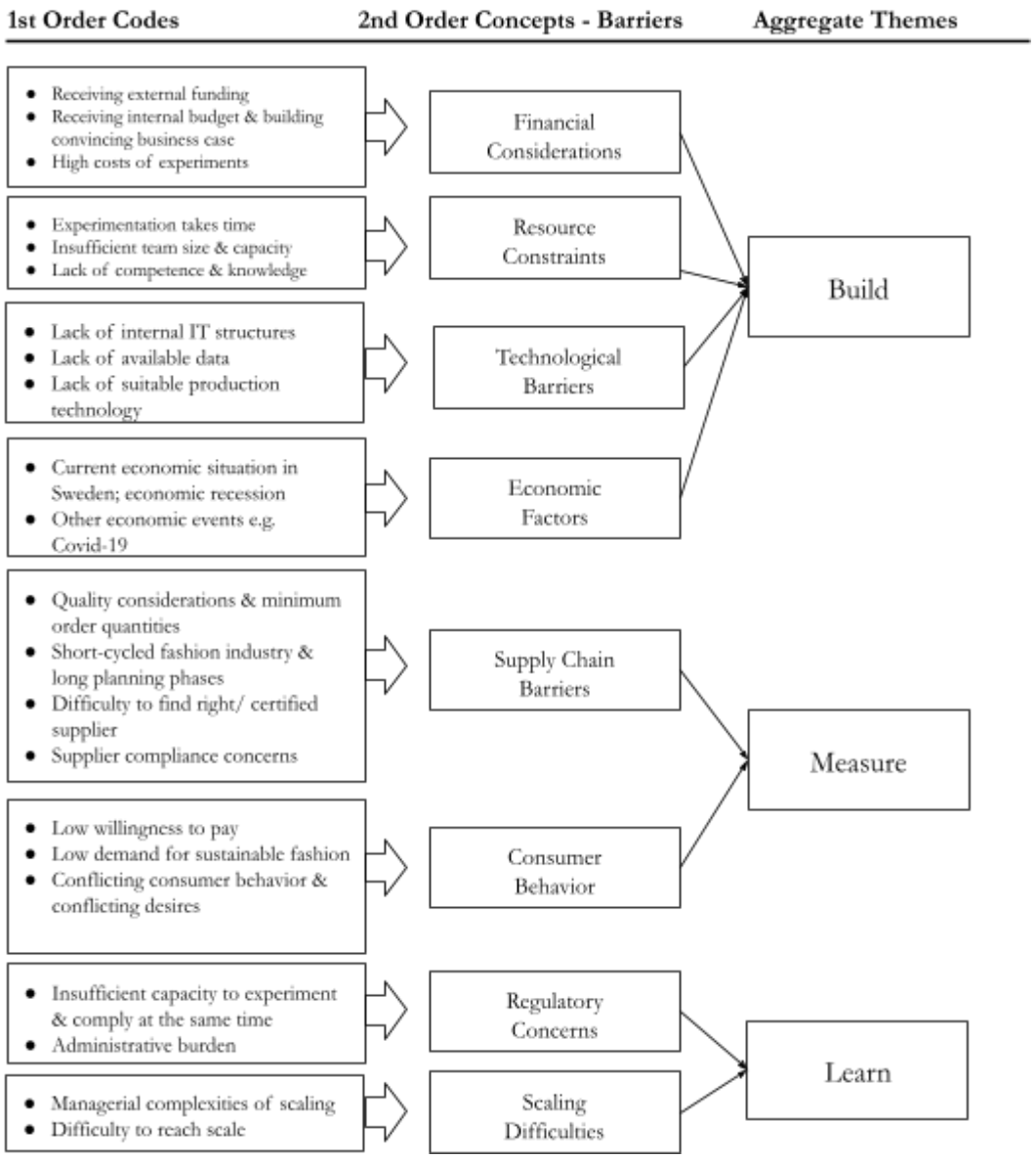
Barriers to BES	• Why are there not more companies using experimentation to test sustainability strategies? What do you think prevents them from doing so? • How do these barriers differ for established companies versus new entrants in the industry? • What industry-specific challenges are there in the Swedish context?
Opportunities for BES	• What do you see as the main opportunities for BES in the Swedish clothing industry? • What are the unique advantages that Swedish companies have in implementing BES? • What can we learn from clothing companies that are using experimentation? Are there any other examples/cases (think internationally) that are good role models?
Ensuring Positive Impact	• What factors do you think are crucial for the successful implementation of sustainability experiments? What should the environment look like to support companies to experiment for sustainability? • How could a company measure the societal and environmental impact of sustainability experiments? Could data-driven decision-making in business strategy be useful in sustainability considerations?

Closing	• Based on your experience, what advice would you give to companies looking to implement BES? • Is there anything else you would like to add?

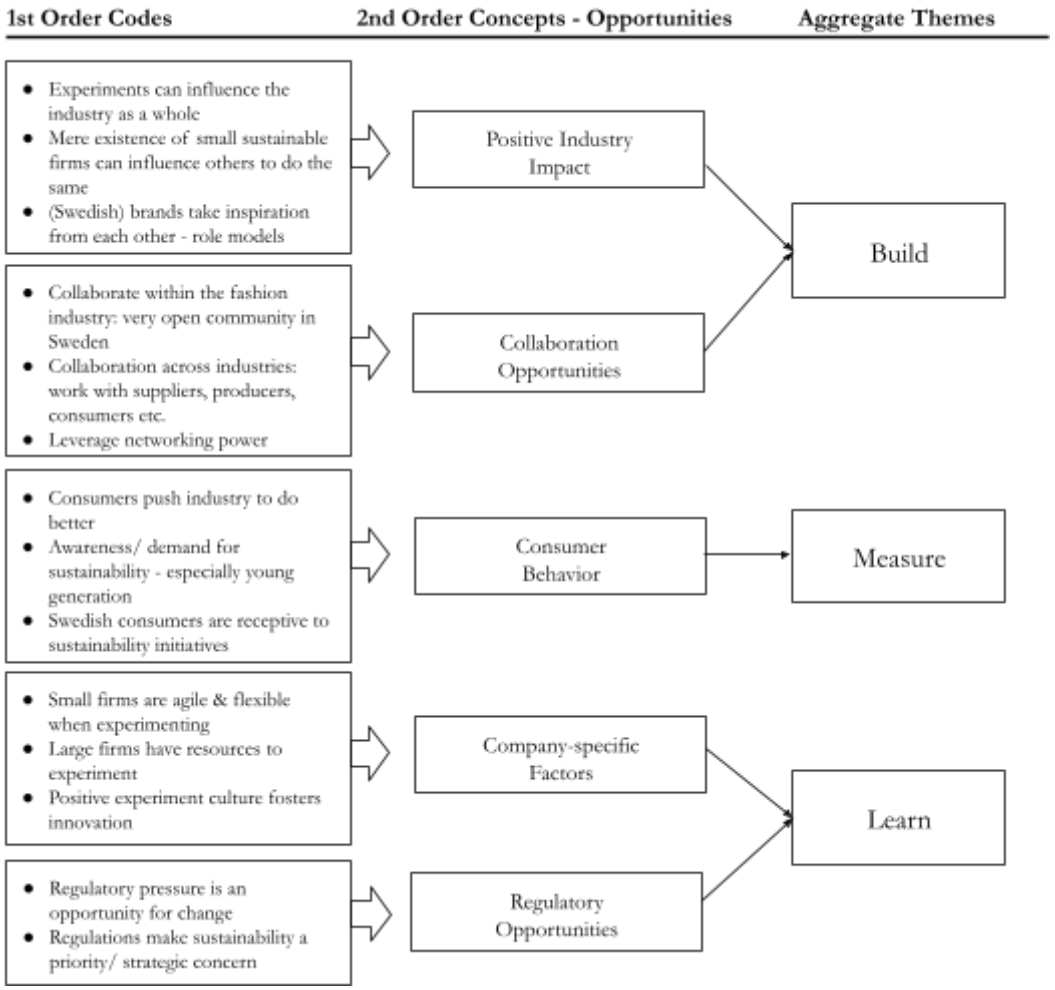
8.5 Company Interview Guide

Topic	Questions
Introduction	*Brief introduction and explanation of the research project*
Background	● Can you briefly describe your current role and position at **insert company**? ● How would you characterize your company's approach to environmental sustainability? ● What was your company's initial business model? *SBM - Definition used in the thesis: We define sustainable business models as an organizational framework that creates, delivers, and captures value while maximizing resource efficiency and minimizing environmental impact through circular principles.*
Business Experimentation for Sustainability	*BES - Definition used in the thesis: Business experimentation for sustainability is a process that enables companies to transition to more sustainable business models through systematic experimentation, allowing them to test and refine sustainable practices and value propositions.* ● Does your company engage in experimentation/prototyping/A/B testing/MVPs etc.? ○ If yes, are any of these directly related to sustainability/circularity? ○ If not, think about testing/experimentation in general. On what topics/with what purpose are you conducting these? ● Can you provide an example of your company's recent sustainability experiment? Where does the responsibility for such experiments lie? ● What was the process like? Is there anything that particularly stood out to you? Were these experiments successful? How do you define success? ● What positive societal and environmental impacts are embedded in these experiments?
Barriers to BES	● When implementing such experiments, what worked and what did not work? Why not? ● What are specific barriers for an organization of our size/age? ● What are specific challenges for the Swedish clothing industry?
Opportunities for BES	● What specific opportunities or benefits did your company's experiments reveal? ● What do you see as the main opportunities for BES in the Swedish clothing industry? ● How can companies in the industry better capitalize on these opportunities? ● What are the advantages that Swedish companies have in implementing BES?
Ensuring Positive Impact	● How does your company measure the societal and environmental impact of your sustainability experiments? How is sustainability embedded in your company's vision/mission? ● What strategies have you found effective in ensuring these experiments lead to positive outcomes?
Closing	● What is your overall conclusion of the experiments you have conducted so far? What is the future outlook? ● Based on your experience, what advice would you give to other companies looking to implement BES? ● Is there anything else you would like to add?

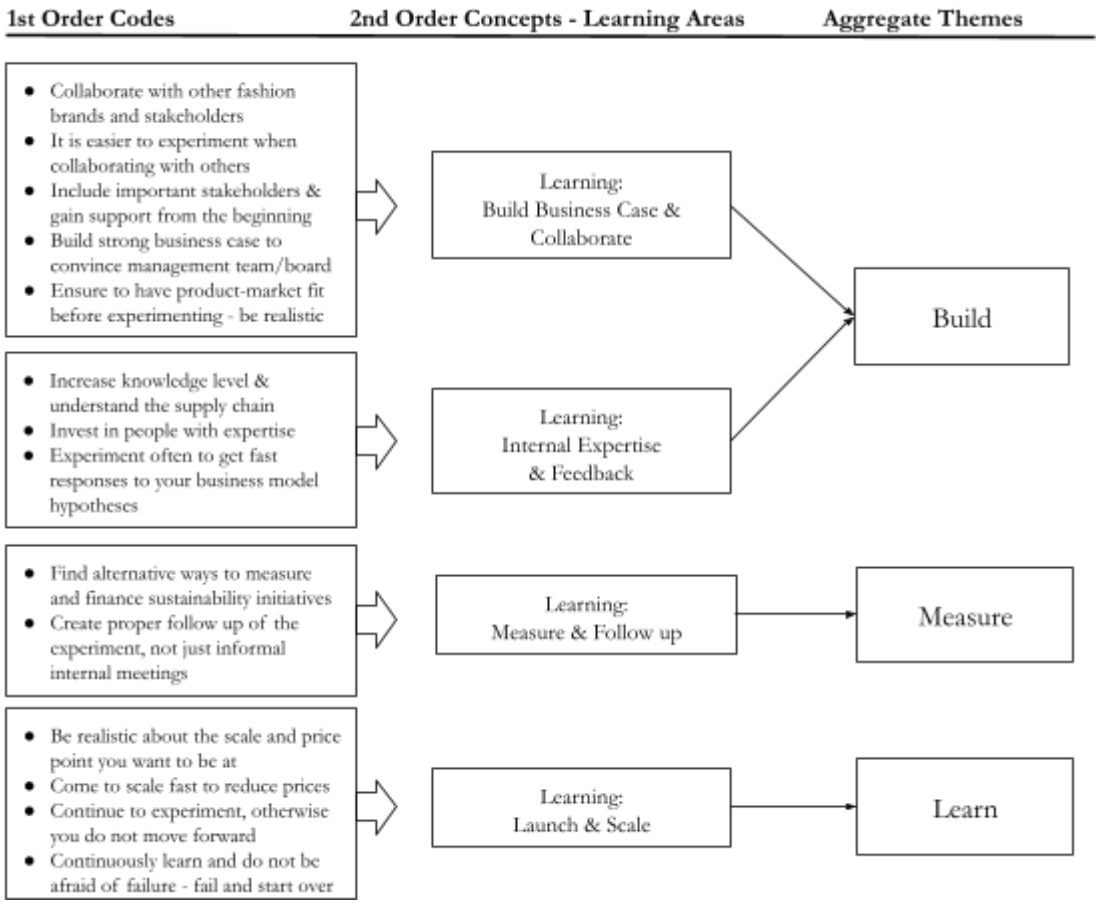
8.6 Barriers Data Structure



8.7 Opportunities Data Structure



8.8 Organizational Learnings Data Structure



8.9 Consent Form

Standard text and consent to participation student's survey / interview

The student's project. As an integral part of the educational program at the Stockholm School of Economics, enrolled students complete an individual thesis. This work is sometimes based upon surveys and interviews connected to the subject. Participation is naturally entirely voluntary, and this text is intended to provide you with necessary information about that may concern your participation in the study or interview. You can at any time withdraw your consent and your data will thereafter be permanently erased.
Confidentiality. Anything you say or state in the survey or to the interviewers will be held strictly confidential and will only be made available to supervisors, tutors and the course management team.
Secured storage of data. All data will be stored and processed safely by the SSE and will be permanently deleted when the projected is completed.
No personal data will be published. The thesis written by the students will not contain any information that may identify you as participant to the survey or interview subject.
Your rights under GDPR. You are welcome to visit https://www.hhs.se/en/about-us/data-protection/ in order read more and obtain information on your rights related to personal data.

Project title	Year and semester
Business experimentation for sustainability (BES) in the Swedish clothing industry	2024, Fall Semester
Aim of the study: What are the barriers and opportunities for business experimentation for sustainability (BES) in established and new companies, and how can companies ensure that positive social and environmental impacts are embedded in these experiments?	
Students responsible for the study or interview: Hannah Beckenbauer and Theresa Pöll	
Supervisors and department at SSE: Kathrin Reinsberger Department of Entrepreneurship, Innovation & Technology	Supervisor e-mail address: kathrin.reinsberger@hhs.se
Type of personal data about you to be processed: - Names - Job title - Information about your company's approach to business model innovation and business experimentation - information about your company's sustainability values	

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

Name	Place and date

8.10 AI Disclosure

During this research project, we used basic AI-assisted writing technologies, specifically Claude AI and Grammarly, to enhance linguistic precision and refine our manuscript. Our technological interventions were primarily limited to grammatical correction, stylistic refinement, and textual condensation within strict word-count constraints. The use of AI was strictly confined to improving textual clarity, coherence, and correctness, including eliminating unnecessary linguistic redundancies, ensuring grammatical accuracy, and optimizing language for academic readability.

Importantly, no AI technologies were employed in generating original research ideas, producing substantive academic content, developing research methodologies, analyzing empirical data, or drawing conclusions. All contributions, theoretical frameworks, methodological approaches, and analyses were exclusively developed by us through rigorous academic research and critical scholarly reflection.