TALLINN UNIVERSITY OF TECHNOLOGY
School of Business and Governance

Viktoria Magdalena Bondegård

CHANGE MANAGEMENT FOR CIRCULAR ECONOMY PRACTICES IN SWEDISH SMALL AND MEDIUM-SIZED ENTERPRISES

Master thesis

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Supervisor: Tarlan Ahmadov, MSc
Co-supervisor: Wolfgang Dieter Gerstlberger, PhD

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ABSTRACT

The study aims to explore the motivators, enablers, and barriers to Circular Economy (CE) practices implementation in Swedish Small and Medium-sized Enterprises (SMEs). Using a qualitative research approach, semi-structured interviews were conducted with managers from 12 SMEs across different manufacturing companies. The study findings reveal that the motivators for CE practices implementation are driven by a range of reasons, including legal requirements, stakeholder pressures, personal values of top leaders, survival and competitiveness, customer demand and image considerations, and a desire to contribute to a better environment. The enablers identified include the changing preferences of customers, government policies, investor demand, and collaborations among stakeholders. On the other hand, the barriers to CE practices implementation reveal a range of internal and external barriers, including financial constraints, lack of support from parent companies, difficulties in finding suppliers who can provide sustainable materials, outdated equipment, regulatory requirements, and the need for more knowledge and technical improvements. Overall, the study highlights the need for policymakers and stakeholders to address the barriers and strengthen the enablers to encourage SMEs to adopt CE practices, thereby contributing to a more sustainable future.

Keywords: Small and Medium-sized Enterprises (SMEs); Circular Economy (CE); Motivation; Enablers; Barriers.

INTRODUCTION

In today's dynamic business landscape, companies face a myriad of challenges stemming from rapid technological advancements and unpredictable circumstances (Murray *et al*., 2015). Meaning that companies must reevaluate their current strategies and processes to overcome these obstacles (Bocken *et al*., 2016; Merli *et al*., 2018). However, the existing patterns of production and consumption are unsustainable, which is why the world's resources are being depleted and future generations' capacity to meet their needs is being diminished. As a result, companies must embrace sustainable practices in a variety of industries, and they are in a strong position to promote sustainability since they have a multitude of resources and competencies (Nidumolu *et al*., 2009; Porter & Kramer, 2011). To lessen their influence on the environment and preserve their financial stability, public and private organizations are working to include sustainability concepts in their operations. All interested parties welcome these initiatives since they tackle important environmental problems like climate change and greenhouse gas emissions (Hansson *et al*., 2022; Daugaard, 2020). For many companies, it is difficult to strike a balance between economic growth and social and environmental responsibilities (Cavallo *et al*., 2019).

In the context of the Circular Economy (CE), academics have recently focused on the social, environmental, and economic facets of sustainability (Merli *et al*., 2018). Through the closing, slowing, and narrowing of material and energy loops, the CE provides a revolutionary sustainable paradigm that aims to create a regenerative system by limiting resource input, waste, emissions, and energy leakage. Several tactics, such as long-lasting design, maintenance, repair, reuse, remanufacturing, refurbishment, and recycling are used to accomplish the goals (Geissdoerfer *et al*., 2017). The CE offers a thorough framework that seeks to address pressing global issues including pollution, waste, and biodiversity loss while fostering economic growth based on renewable energy and resources (Ellen McArthur Foundation, 2015). Moreover, it is considered a promising approach to reducing resource exploitation, waste, and emissions while maximizing economic gains (Fogarassy & Finger, 2020). The CE can lead to increased profitability and resource efficiency, less energy and material consumption, and improved labor practices and

culture of care. The Ellen MacArthur Foundation (2022) found that over half of managers believed CE strategies increase profitability and nearly all agreed that CE activities increase efficiency and competitiveness. A shift to a more CE model, according to the European Commission (2022), may result in less environmental harm, fewer greenhouse gas emissions, better raw material security, and a better understanding of barriers and challenges that organizations face when transitioning from a linear to a circular model.

Most CE practices are seen in major organizations because they have greater access to resources and a stronger position in the global market, allowing them to implement and participate in CE more successfully (Sehnem, 2019). Large corporations pursue the CE route because they believe it can provide value, improve resilience, and fulfill social and environmental goals (Ellen MacArthur Foundation, 2022). Ikea and Adidas, for example, are two significant firms that have indicated their aim to transition to a CE. Ikea has established a goal of being completely circular by 2030 and is investing in R&D programs to attain this aim (Ikea, 2022). Adidas has established the "Three Loop Strategy and Circular Loop - Made to Be Remade" to combat plastic pollution.

Small and medium-sized firms (SMEs), on the other hand, have several challenges in implementing CE practices due to limited resources (Scipioni *et al*., 2021). However, while shifting to the CE paradigm, it is critical to evaluate the impact of business size (Rodrguez-Espndola *et al*., 2022). It should be underlined that the benefits of a CE system can not be completely realized until it is extended to all sectors and sizes of organizations, especially SMEs, which are critical to long-term development and economic growth, employing over 50% of the workforce worldwide (World Bank, 2021; Tang, 2022). As previously stated, the linear production system is continuously putting strain on the globe, resulting in environmental and economic issues. As a result, there is an urgent need for enterprises to transition to more sustainable production processes that minimize waste and consumption while still producing economic advantages.

However, the CE's implementation has been restricted, and some have criticized its claims for being unduly optimistic. There is also a lack of clarity around the concept of CE, which has led to conceptual confusion and debate among scholars. Nonetheless, many scholars are now contributing to CE literature, as it has gained momentum in the academic field. (Kirchherr *et al*., 2017; Korhonen *et al*., 2018; Varjú *et al*., 2022; Han *et al*., 2023) Despite the challenges, policymakers, practitioners, and researchers continue to push for the transformation toward the CE paradigm to address the environmental and economic challenges of the current linear production

system (Corvellec *et al*., 2021). While numerous studies on the transition to the CE paradigm have been conducted from various perspectives and levels, the research area remains relatively underdeveloped, with many studies still in the exploratory stage and relying on theoretical reviews and conceptualizations with limited empirical validation (Centobelli *et al*., 2017; Barros *et al*., 2021; Yamaguchi *et al*., 2022). Academic publications typically focus on specific aspects of CE implementation, such as business model adoption strategies, drivers, and implementation barriers, with a particular emphasis on large corporations, leaving a gap in research regarding the presence and performance of CE practices in SMEs (Dey *et al*., 2020; Bhatt *et al*., 2020). Furthermore, recent developments show that SMEs are becoming increasingly conscious of the significance of shifting away from traditional linear models and toward more sustainable economic models. Academic research, on the other hand, continues to develop knowledge largely in the form of conceptualizations and specific case studies that may not be easily repeatable or generalizable (Derksen & Morawski, 2022). There is also a scarcity of studies on how SMEs learn and adapt to change in an increasingly competitive and globalized market, as well as how they acquire and use the information to adapt to their settings (Martnez-Costa & Martnez-Lorente, 2008).

This leads to the research problem of this thesis, which is that there is a lack of knowledge in regard to the Change management (CM) process when transitioning toward a CE on the SME level. Therefore, this thesis aims to conduct research to acquire a comprehensive understanding and gain insight into the barriers (resistant forces) and enablers (driving forces) faced by the SMEs during the implementation of CE practices starting from the *status quo*, and the strategies they used to manage the change toward a desired state, meaning the implementation of CE practices, which is shown in Figure 1 below.

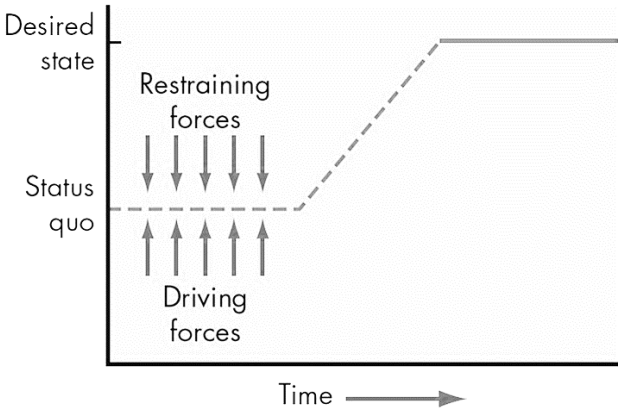

Figure 1. Movement of an organization from a status quo to a desired state
Source: Robbins (1998)

To achieve the research aim, the study will explore the source of motivation, existing barriers, and enablers that SMEs face in their change process, and how the change process is managed when transitioning toward CE. On this line, the thesis has two main research questions.

1. What are the main sources of motivation, most common barriers (resistant forces), and enablers (driving forces) for the implementation of CE practices by SMEs?

2. How do SMEs effectively manage the change process, and what are the critical success factors for managing the change process toward the implementation of CE practices in SMEs?

The findings from this research could help identify the main source of motivation, potential barriers, and enablers for implementing CE practices within SMEs and provide insights into the success factors to effectively manage the change.

The initial chapter of this study entails a comprehensive literature review that provides an overview of the concept of CE and its significance to both SMEs and the country of Sweden. The chapter also covers the transition towards CE and the various barriers and enablers. Furthermore, the chapter delves into the topic of Organizational Change Management (OCM) and explores the failures associated with it and different CM models. Moving on to chapter two, the methodology employed in the study is detailed. This chapter outlines the reasons for the selection of a qualitative approach, and how exploratory research was utilized in conjunction with an inductive method for the semi structured-interviews. Chapter three provides a detailed analysis of the study's findings, which were obtained through an inductive approach that focused on the motivation, existing CE practices, barriers and enablers, and drivers for change towards a CE. The fourth chapter is devoted to the discussion of the study's findings and provides an opportunity to interpret and analyze the results in the context of the literature review. The implications of the findings are discussed, providing a comprehensive understanding of the research outcomes and contributing to the existing knowledge base in the field. Finally, the concluding chapter presents a summary of the study's findings, discussion, and research questions. It also includes recommendations and outlines the contributions made by the research to the field, as well as limitations.

1. LITERATURE REVIEW

CE is an opportunity for companies to build long-term business practices that are sustainable and long-lasting. However, the implementation is heavily dependent on the numerous obstacles and enablers that the business confronts. To address the research topic, the following sections in this chapter introduce CE and its importance, CE and SMEs, the transition toward CE, and barriers and enablers for CE transition. Furthermore, the chapter will finish with OCM and CE, CM failure, and CM models.

1.1. Circular Economy and its importance

The notion of CE has gained increasing attention over the years at numerous levels, including politics, organizations, and science (Reike *et al*., 2018). According to Witjes & Lozano (2016), it is defined as a zero-waste regeneration system based on the concept that rubbish created within a company, is recycled, and reused by them or another company, with a viable economic path for tackling current environmental and socioeconomic concerns and fostering a more sustainable society. The CE relies on circular strategies, such as reuse, repairing, remanufacturing, recycling, refining, remarketing, and reprogramming, which are collectively referred to as the "Era of R", to preserve the ultimate utility and value of materials (Stahel, 2019). The Ellen Macarthur Foundation (2015) also defines the transition to CE as a system in which organizations consume significantly fewer natural resources because the assets used are circulated in the "Era of R". The European Commission (2019) also states the importance of becoming more circular, because it provides an economy with the capabilities to address climate change and biodiversity loss on several levels while simultaneously satisfying social needs. They also introduced the European Green Deal, with the primary objective being to capitalize on the tremendous market potential for low-emission technology, sustainable goods, and services to achieve climate neutrality by 2050 (European Commission, 2020).

The influence of government is of true importance as indicated by Kirchherr *et al*., (2018) and Korhonen *et al*., (2018), they state that the potential change should be viewed as an economic

system that can assist companies and the whole country. The government should be challenging the prevalent notion of maintaining a traditional linear model of growth and resource optimization, focusing on product design that is reducing raw material consumption, recovering waste through recycling or giving it a second life and according to Pollard *et al*., (2016) have a significant positive effect on the environment. Furthermore, Su *et al*., (2013), highlight the importance of establishing a closed-loop material flow throughout the whole economic system, which would benefit society at large. A comparison of a Linear Economy and a CE is illustrated in Figure 2 below.

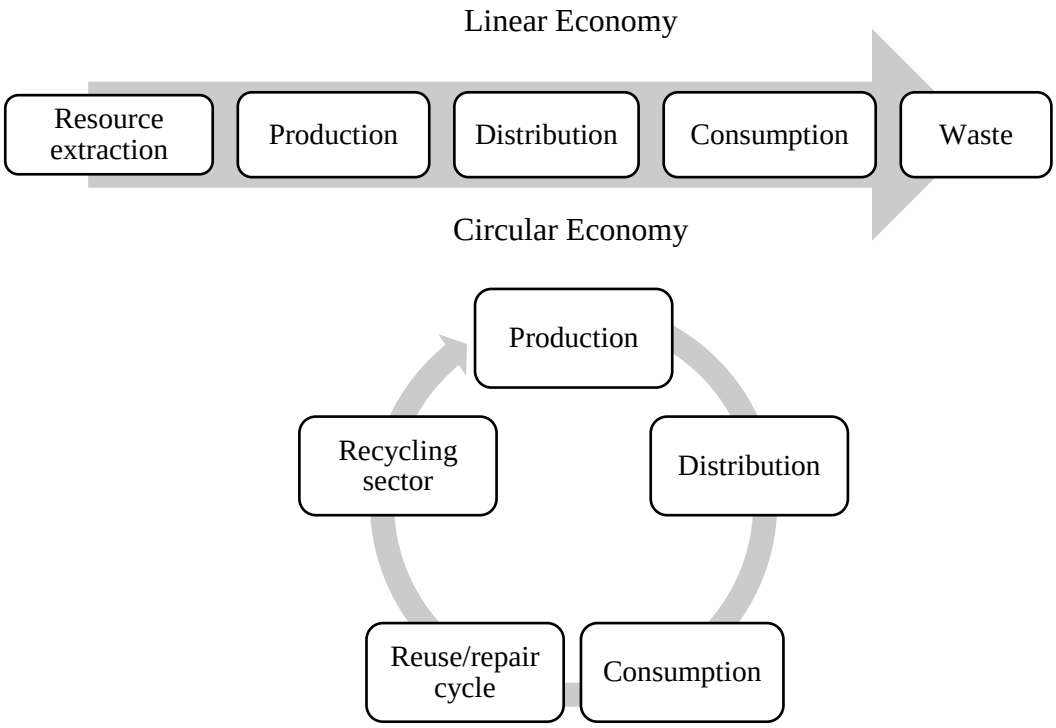

Figure 2. Linear Economy vs. Circular economy
Source: Author's own based on Fura (2020)

The concept of CE represents a major change in how we use and get rid of materials and resources. CE contradicts the traditional production and consumption practices that have been deeply entrenched in our society. While CE's principles are rooted in product planning and design, there remains a degree of uncertainty surrounding the specific measures required to effectuate and operationalize these changes, as noted by De Jesus *et al*., (2018).

Different studies show that to extend the life of a product, the first step is to design and build it in a way that fits this principle (Bressanelli *et al*., 2018). The second critical factor is a thorough examination of the materials utilized to make the product for it to become more sustainable (Rosen & Kishawy, 2012). The third phase is to consider obsolescence and how to manage materials that

are no longer usable while retaining their original properties (Pardo-Vicente *et al*., 2022). Lastly, bringing these materials back to be recycled, refurbished, and returned to society for a second use necessitates a whole infrastructure (Guldmann & Huulgaard, 2020).

1.2. Circular Economy and SMEs

SMEs are recognizing the benefits of reducing waste and enhancing resource efficiency. These benefits include material cost savings, competitive advantages, and market expansion. SMEs are crucial for economic development and job creation globally, and they account for almost 90% of businesses worldwide (European Commission, 2018). However, OECD (2018) reports that SMEs have a high environmental footprint, with manufacturing organizations contributing to 60% to 70% of industrial pollution in Europe. Although environmental management programs can assist organizations in achieving their environmental objectives, only a small percentage of industrial SMEs comply with them. However, there is an increase in adoption within the manufacturing industry today. (Acerbi & Taisch, 2020)

Narrowing it down to the country of choice, CE is becoming more important in Swedish, European, and international policymaking. The Swedish government emphasizes the necessity of contributing to and meeting environmental and climatic objectives. The government has appointed an Agenda 2030 delegation to draw up a national action plan involving political commitment, policy integration, intergenerational period, policy effects, coordination, local involvement, stakeholder participation, and monitoring and reporting. (Confederation of Swedish Enterprise, 2019) They further mention that Sweden and its business community are well-equipped to lead in CE development due to their extensive expertise in resource-efficient production and delivery of sustainable solutions and services. The Swedish Energy Agency (2022) adds that the nation has good access to natural resources, circumstances for fostering the economy, a world-class industrial sector, competent innovators, and a strong commitment to investing in a fossil-free society.

Despite positive progress according to the European Environment agency (2020) the Swedish industries produce around 33,23% of the total countries energy consumption, and 93,65% of the water use in 2017. Furthermore, it is the third highest among the European Union (EU) nations, with 24,8 tons annually per person as mentioned by the Circularity Gap assessment from 2022. Therefore, Swedish SMEs present a compelling research focus regarding the government's

regulatory guidelines and their interpretation among SMEs, given the country's status as an early adopter of sustainable modernization.

1.3. Transition toward Circular Economy

Making the move from a Linear Economy to a circular is a difficult operation that necessitates entirely reshaping industries' developmental, managerial, and operational efforts, as well as their supply chain, business strategy, and customer relationships (Frishammar & Parida, 2019). Looking at past research suggests that organizations that have implemented the CE have a competitive edge over traditional linear models (Rizos *et al.*, 2016). However, various stakeholders have highly varying understandings of the CE idea, resulting in ambiguous strategies for implementation and operationalization (Yu *et al*., 2021).

One way for implementation, according to Morseletto (2020), is a methodical approach with the development of a tool for analyzing a company's existing position and establishing a transition route toward circularity, which is also underlined by Merli *et al*., (2017). Developing a sustainable business model also known as a Circular Business Model (CBM) is defined as a business model in which the conceptual logic for value creation is based on using economic value retained in items after usage in the manufacture of novel items. This is an approach of putting sustainable strategies in focus, such as a circular supply chain. Barros *et al*., (2021) also mention that a company should collaborate, communicate, and configure across business units and organizational functions. This would close energy or waste loops, and reduce resource consumption and leakages, it is important to work together to achieve long-term competitive advantages in a circular supply chain to have a successful and long-lasting transition (Geissdoerfer *et al*., 2018).

However, Lieder & Rashid (2016) mentioned that CE should be implemented from the top down by society via legislation and regulations, or from the bottom up by industrial industries through competitiveness and profitability focusing on the environmental impact, economic benefit, and resource scarcity. Kirchherr *et al*., (2017) and Korhonen *et al*., (2018), on the other hand, suggest that the potential transition should be viewed as an economic system that can assist companies in remaining viable while challenging the prevalent notion of maintaining a linear model of growth and resource optimization, reducing raw material consumption, and recovering waste through recycling or giving it a second life.

The transition toward a CE is motivated by a range of environmental, economic, and social benefits. Environmental benefits can be to reduce waste and preserve natural resources. According to the Ellen MacArthur Foundation (2019), a CE could help to reduce global greenhouse gas emissions by 45% by 2030. Furthermore, they mention that CE can bring economic benefits by increasing resource efficiency, creating new business opportunities, and reducing costs. It can also bring social benefits such as improved working conditions and community development. For example, CBM such as remanufacturing can create jobs and promote local economic development (Lieder & Rashid, 2016). A CE can increase resource security by reducing reliance on finite resources and increasing the use of renewable resources. This can lead to reduced price volatility and supply chain risks, increasing consumer demand for sustainable and eco-friendly products is also driving the transition toward a CE. (Ellen MacArthur Foundation, 2015).

1.3.1. Barriers of a Circular Economy transition

As explained by Bocken & Geradts (2020b), the implementation of a CE can face several barriers that may hinder its success. However, identifying these barriers can also help to identify opportunities to overcome them. Bianchini *et al*., (2019) suggest that to transition to a sustainable CBM, organizations must overcome both internal and external barriers by finding the right transformation strategies for them.

For the internal barriers, organizational culture is one huge factor, risk aversion when it comes to both managers and their employees, as well as lack of motivation (Takacs *et al*., 2022). Organizations can struggle with applying CE since there is no general view today of how companies should include sustainability in their business models due to a lack of knowledge within the field (Bocken *et al*., 2014; Nazlı, 2021). This is also acknowledged by Liu & Bai (2014) that a business trying to implement a CE can struggle and not have the right set of skills, because it is an extremely complex process. However, they further argue that institutional and cultural barriers play a more key role than skills because the idea of CE needs to be accepted otherwise the skills will not be valued. Moreover, Hina *et al*., (2021) state that lack of information systems, company strategies, financial resources, technological knowledge, collaborations, product design, and internal stakeholders are the main barriers as well.

According to Kirchherr *et al*., (2017), the most fundamental barrier when transitioning to CE today is a general lack of knowledge. There is a lack of awareness of what CE is and what it is for, as

well as how companies should handle resource management and recycling. Morseletto (2020) mentions that because of the SMEs' small size, they have difficulties when trying to close loops, increase resource efficiency, and recycle. Lack of financial support, social, cultural, and environmental barriers, customer-related issues, public institutional support as legislative and economic barriers, and supply chain concerns are other difficulties. (Prieto-Sandoval *et al*., 2018; Ormazabal *et al*., 2016; Rizos *et al*., 2016) A circular product will often be a more expensive alternative when compared to linear products because they are not reflecting the adverse externalities of raw material extraction and processing (Atasu, 2021). Furthermore, Sachs *et al*., (2019) add to this by mentioning that both supply and demand issues make it difficult to develop markets for more circular products because there is no motivation on going circular.

1.3.2. Enablers of a Circular Economy transition

According to Govindan & Hasanagic (2018), the success factors when creating a CMB may be divided into two categories, internal and external, and they categorize all success variables into five groups: policies from the government, finances, environmental protection, society, and lastly product development. Seth & Rehman (2022) further mentions that the internal success factors categories consist of: finances, environmental advantages, supply flexibility, customer interactions, and the company's values, plans, and aspirations.

Rizos *et al*., (2016), on the other hand, do not address the distinction between internal and external success drivers and instead, emphasize organizational culture as the most important success component for circular and environmentally friendly models. Tura *et al*., (2019) also address this, to see the success factors as interrelated. In one environment, a factor that is perceived as a barrier may be considered a success factor in another. One factor that has been cited as either a success factor or a hindrance is the corporate culture (Rizos *et al*., 2016; Liu & Bai, 2014). The study by Lieder & Rashid (2016) also mentions the enablers being policy and regulation-related, supplier chain, societal environment, stakeholder pressure, and infrastructure drivers. Examining suppliers is essential for making the shift toward a CE, as they are responsible for providing sustainable materials (Ellen MacArthur Foundation, 2015; Lieder & Rashid, 2016). By collaborating with suppliers, businesses can achieve greater efficiency, cost savings, and new revenue streams.

1.4. Organizational change management and Circular Economy

In explaining OCM the author uses different definitions from previous scholars found in the literature. Ashkenas (1996) defines CM as implementing specific initiatives to bring about a defined change from the previous way of doing things. The goal of the CM is to develop techniques for regulating and assisting individuals in adapting to change. Hage (1999) suggests that when an organization undergoes or has undergone a transformation, it requires systematic strategies to manage the resulting changes. This is because numerous actions can alter the direction and procedures of an organization. By (2005) defines OCM as the process of continually updating an organization's direction, structure, and capabilities to meet both internal and external demands from consumers. Kunisch *et al*., (2017) argue that CM is initiated when management is dissatisfied with the present state, and the organization needs to change. Successful execution of CM is critical to an organization's success during a revolutionary moment of change. Therefore, appropriate management practices must be reviewed, as discussed by Vial (2019b), to ensure successful CM. It involves both administrative and behavioral concerns, giving managers constructive insights regarding the change. CM occurs at both the organizational and individual levels and accountability is important and assists organizations in transitioning to a more sustainable future state and maximizing organizational success. (IOSCO & OECD, 2018; Kwahk & Lee, 2008)

In today's rapidly evolving business environment, SMEs must adapt and innovate to remain competitive (OECD, 2018). This means that organizational change is necessary to discover innovative solutions and reach innovation, which is crucial for survival and growth (Bamford & Forrester, 2003). To transition to CE, organizations must understand how to create, deliver, and capture value in new ways in how they produce, and how to transform their organization (Tura *et al*., 2019). In CM and CE, the leaders play a crucial role in building a sustainable concept (McCann & Holt, 2010). Liu & Bai (2014) also notes that a leader's personality and values impact the CE process, making their role critical to success. This means that a strong leadership commitment helps SMEs when adopting CE practices, leading to a sharp vision, greater motivation, and more resources allocated to achieving the CE goals and a CBM (Yang *et al*., 2021).

1.5. Change management failure

Organizational change can be difficult, and entrenched systems and routines can hinder transformation efforts. According to Hughes *et al*., (2021), success can be undermined when there

is a lack of attention to the "how" of change, despite the typical emphasis on the "what" and "why". Without a comprehensive CM strategy, short-term decisions can delay or undermine long-term results, potentially leading the organization in an unexpected or undesirable direction (Ellen Macarthur Foundation, 2015). Furthermore, Kotter (2009) notes that a lack of strategic CM can hinder forming a strong coalition, and communication with employees, and reduce confidence in leadership. The author has also found research that shows that CE frequently stops at a single department such as those in charge of sustainability (Kirchherr *et al*., 2017). Therefore, organizational failures when establishing CE changes can impact differently amongst the departments, so Liu & Bai (2014) stress the importance of communication among the departments to succeed. Another issue mentioned is that the operating division is usually placed in a separate physical location from the department pushing CE, which implies they have less access to information about ongoing activities. This suggests that the operational department may be wary of CE due to potential concerns regarding increased responsibilities and workload.

This leads the author to the core of the organization, i.e., its employees, who play a crucial role in the implementation of CE. Chan *et al*., (2014), point out that some employees in a company may be hesitant toward sustainability because they regard it as extra labor. They also state that one of the primary hurdles for CE is a lack of commitment and enthusiasm within management which in turn affects the employees. This shows that organizational culture can be a barrier when it comes to aversion to risk-taking in the company and among leaders (Liu & Bai, 2014; Govindan & Hasanagic, 2018). Also supported by Johannsdottir *et al*., (2015), that the leader indeed plays a key role in how the organization adapts to change. The leader should influence others by serving as a role model and presenting a vision. To conclude, Awan & Sroufe (2020) further states that the quality of leadership is strongly correlated to the organizational structure, so they should have the desire to transform and educate themselves on how to transition into a CE mindset.

1.6. Change management models

Among different CM models, four were considered for implementation in this thesis and will be discussed, namely the McKinsey 7S Model, Prosci ADKAR Model, Kotter's Change Model, and Lewin's Change Management Model.

The McKinsey 7S framework, developed by Tom Peters and Robert Waterman, is a tool used to assess an organization's internal structure and design. The goal of this model is to show how the relationships between its seven elements can lead to improved organizational performance. The first element is structure, which refers to how the organization operates internally and assigns responsibilities. The second is strategy, which involves developing a plan of action. The third is systems, which encompasses the organization's infrastructure, workflows, and decision-making processes. The fourth is skills, which relate to the abilities of employees and ensuring that they possess the necessary skills to achieve the organization's goals. The fifth is style, which refers to the attitudes and behaviors of top management. The seventh and final element is the importance of shared values to sustain change. (Waterman *et al*., 1980) According to Demir & Kocaoglu (2019), for the successful implementation of this model, there needs to be a mutual understanding and connectivity between all seven elements. Figure 3 depicts an explanation of the model.

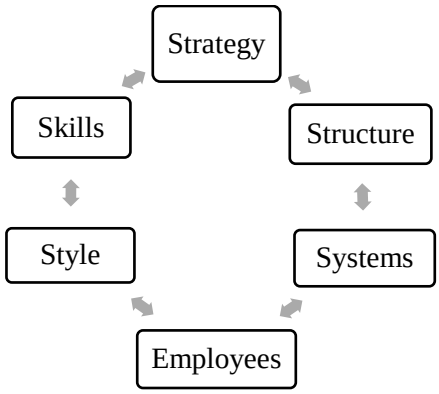

Figure 3. McKinsey 7S Framework
Source: Author's own based on Hayes (2014)

The Prosci ADKAR model is a framework designed to comprehend change at the individual level. argues that for successful organizational change, support must be extended to individual employees. Thus, this model serves to illustrate how organizations can enhance their prospects of successfully implementing change. The framework comprises five prerequisites for successful change implementation. The first requirement is to establish a comprehension of the need for change by presenting and declaring what will occur so that employees understand and are motivated to implement the change. The next step is to foster the desire to support and participate in change. Subsequently, the knowledge of how to change is developed through training, filling gaps, and gathering facts. The capacity to implement the required skills and behaviors, monitor performance, and establish objectives follows. Finally, it is important to reinforce the change

through positive feedback, incentives, and acknowledgment among employees. Hiatt (2006) Figure 4 illustrates the model's five stages.

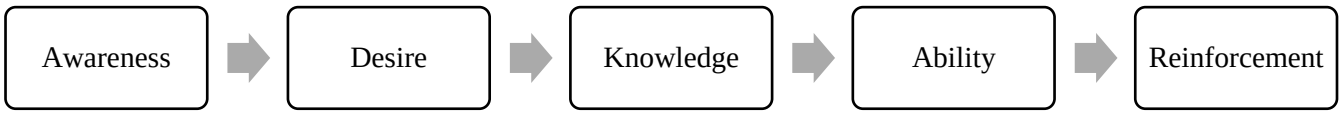

Figure 4. ADKAR Framework
Source: Author's own based on Hiatt (2006)

John P. Kotter's 8-Step Change Management Model provides guidance to leaders on how to effectively execute organizational change. This framework highlights the importance of creating urgency to initiate transformation and supports the organization in implementing, managing, and sustaining change. The first step is to create a sense of urgency by emphasizing potential risks or opportunities that motivate action. The second step involves assembling a competent team with the necessary resources. The third step is to develop an unclouded vision and strategies to establish core values. Next, the new vision should be communicated to the rest of the organization while addressing any potential concerns. Finally, any obstacles that may arise must be removed. (Kotter, 2009) The Kotter model is illustrated in Figure 5 below.

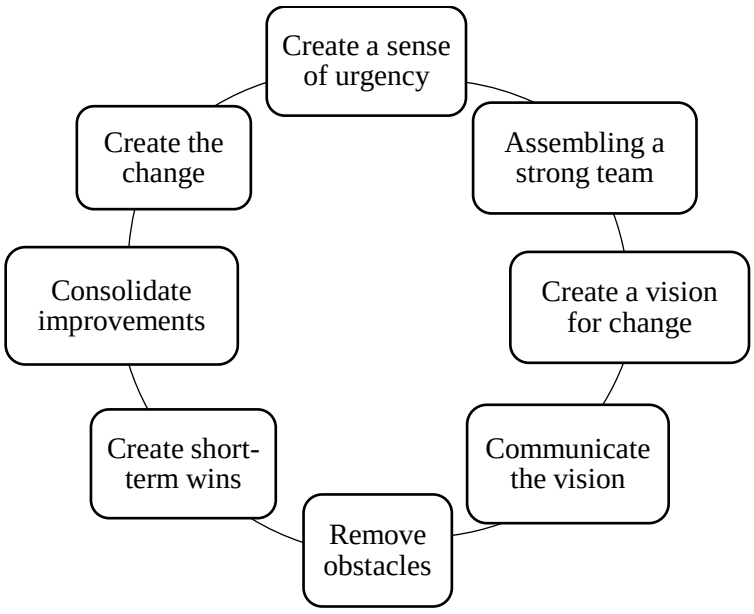

Figure 5. Kotter's 8-Step Change Management Model
Source: Author's own based on Kotter (2009)

Proceeding further, Kurt Lewin, a prominent man in the field of OCM, defined CM as a method of instilling the belief in the organization that change is necessary, then focusing on transitioning to a desired behavior, and maintaining that desired behavior until it becomes a habit and a natural part of the organization. The most widely used and popular general framework for the change process is Lewin's unfreeze-change-refreeze model and extensively cited in the literature (Weick & Quinn, 1999; Vakola, 2013; Drzensky *et al*., 2012). The model is illustrated in Figure 6 below.

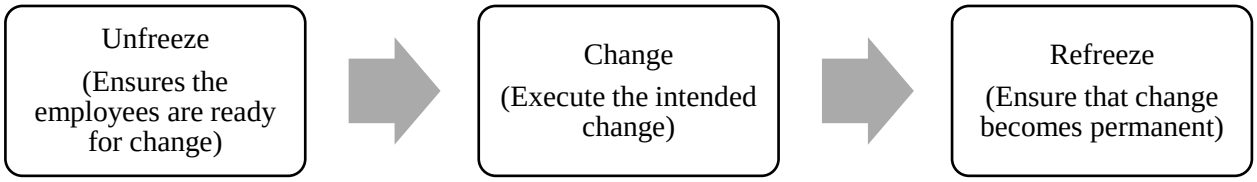

Figure 6. Kurt Lewin's three steps model
Source: Author's own based on Burnes (2020)

According to Lewin, the initial step toward transformation involves destabilizing existing behaviors and attitudes, which is commonly referred to as unfreezing. It recognizes that previous behaviors are no longer acceptable and may prove detrimental to the organization and its employees if continued. It recognizes the need for change and creates the necessary conditions for individuals to abandon old habits and patterns. It is the phase where skepticism arises, with the desire to assess new behaviors through a process called "psychological disconfirmation" (Worley & Mohrman, 2014).

The second step of the process involves making changes to the unfrozen aspects that require modification and transitioning them to a new state. It is crucial to precisely identify what needs to be altered. To effectively communicate the differences between the present and proposed states, it is necessary to provide a brief overview of the future state. Two activities that can be effective are emulating role models and pursuing customized solutions through trial-and-error learning.

The third and final phase focuses on refreezing and stabilizing the new situation by implementing policies, recognizing achievements, and establishing new norms. It involves making the change permanent by promoting initiatives that create new organizational habits. It is essential to convince the organization's employees that the innovative approach will succeed while highlighting the advantages of the new system. This process involves creating a new self-concept and identity, as well as forming new interpersonal relationships. (Burnes, 2020)

Based on the CM frameworks mentioned earlier, CM is a crucial aspect during the transition to CE. Lewin's model targets reducing employee resistance and is well-suited for transitioning to a CE because it emphasizes the importance of creating readiness for change, implementing necessary changes, and embedding them in the organization's culture to make them permanent. This approach is crucial when attempting to change an organization's behavior and mindset to align with the principles of a CE (Geissdoerfer *et al*., 2017).

In contrast, other CM models such as The McKinsey 7S Model are useful for aligning different elements of an organization, but it may not be effective in managing the behavioral and cultural changes required for a CE transition (Hesselbarth & Schaltegger, 2014). This is similar to the Prosci ADKAR Model which focuses on the individual's change process and may not fully address the systemic and cultural changes (Linnenluecke *et al*., 2019). Kotter's Change Model, while useful for engaging employees in change initiatives, may not fully address the broader organizational changes (Stahel, 2019). Overall, while these CM models may be useful in certain contexts, Lewin's 3-step model is better suited for managing the holistic and systemic changes required for transitioning to a CE. Based on the literature review, the author provides the below model shown in Figure 7, to be implemented in this study.

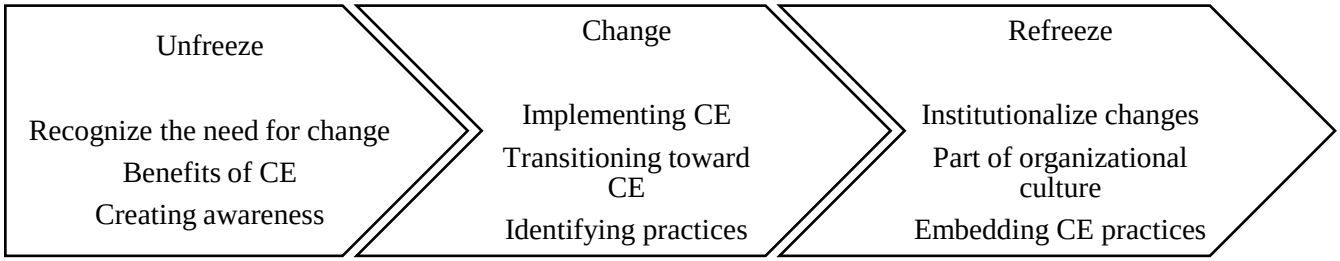

Figure 7. Lewin's change model with CE implementation
Source: Author's own based on Lewin's change model

To conclude, the adoption of CE is being encouraged across various manufacturing industries, and governments are increasingly recognizing its importance in policymaking to meet environmental and climatic objectives. Furthermore, the questions for the semi-structured interviews were developed based on the literature review. The author recalled the important aspects during the research and categorized the questions into five blocks. These blocks were relevant to the aim of the thesis, which is to explore the motivation of SMEs in implementing a CE and their overall awareness of sustainability. The questions also delved into how their existing business models were formed and where circularity was implemented or could be implemented. The literature

review was also used to identify perceived enablers and barriers. Additionally, it was important to understand the companies' capabilities and their perceived need to implement circularity. Lastly, CM questions were included to gain insight into how they perceive their organizational structure during the transition toward CE.

The author believes that there is a need for a comprehensive understanding in how SMEs in Sweden are transitioning toward CE. After reviewing the OCM models, the author decided to employ Kurt Lewin's three steps model, since it is one of the most used and agile models available and simply can be adjusted to accommodate the change process of SMEs toward CE.

2. METHODOLOGY

This part of the study shows the critical components that outline the approach and techniques used to carry out the research. This section provides a detailed explanation of the methods used to collect and analyze data and how these methods address the research questions and objectives.

Bryman (2016) suggests that qualitative research is a suitable method for exploring social reality and an exploratory study was conducted to achieve the purpose of this thesis. Silverman (2011) emphasizes the significance of selecting an appropriate research design while also taking into consideration the methods of data collection. The method design was chosen because it focuses on comprehending the implementation of CM in connection with CE adoption in SMEs, which are multifaceted and ever-changing subjects that involve several variables and factors. The area of research also needs more insight to understand, and the questions need to provide flexibility and adaptability to changed direction based on the obtained results and insights (Saunders *et al*., 2019). This can assist in identifying the crucial variables and factors and provide a diverse perspective.

Furthermore, as suggested by Swedberg (2020), an exploratory study is an ideal choice when there is limited knowledge in a research area, which is precisely the case in this study based on the literature review. Hence, this design was deemed appropriate for addressing the research gaps and objectives. Through this research, the author intended to fill in the gaps that exist in the current literature and gain insights into the attitudes, perceptions, and experiences of SMEs regarding the adoption of CE. Moreover, identifying the challenges and opportunities associated with it in Sweden, semi-structured interviews were found to be effective (Bryman, 2016).

The study included a sample of 12 SMEs in the manufacturing industry, while the total population of SMEs in this sector in Sweden being 4,425 (Statista, 2023). The limited sample size may impact the generalizability of the findings, and it should be noted that some industries were not included due to time constraints. Additionally, the manufacturing industry is particularly relevant to this study as they produce a wide range of products. Looking at the literature review there was also

found that the concept of CE practices can be in the product planning and design stage, but there is confusion on how to alter the changes and how to implement them (De Jesus *et al*., 2018). So, generating a deeper understanding in this industry was an obvious choice for the author.

For the research approach, the study adopted an inductive approach for analyzing the collected data. This allowed the author to identify patterns and themes that emerged from the data and enabled them to make sense of the findings (Braun & Clarke, 2019). The application of the inductive approach was useful in the study as it, through the development of themes, aided in the breaking down of data for detailed analysis and understanding (Thomas, 2006). Overall, the inductive approach can be a valuable method for analyzing interview data, particularly in exploratory studies or studies with limited existing knowledge on a topic. By systematically identifying patterns and themes in the data, this approach can generate new insights and ideas that can inform future research and practice. For data collection, the study utilizes a combination of primary and secondary data. The primary data collection method involved conducting semi-structured interviews with representatives chosen as a means of obtaining in-depth information from the participants about CE and CM. The block of interview questions can be seen in Figure 8 below.

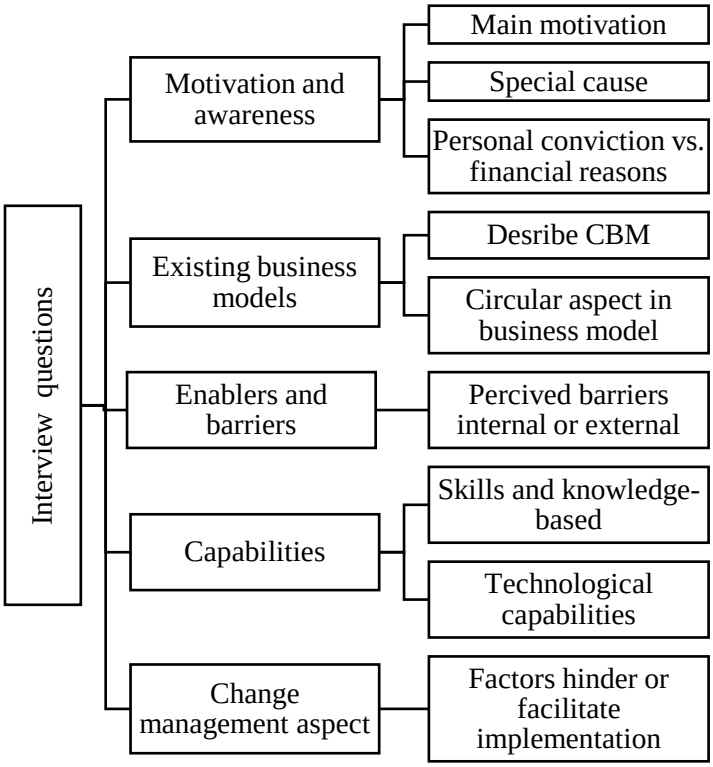

Figure 8. Blocks of interview questions addressed to SMEs
Source: Author's own on the basis of data shown in Appendix 1 compiled by the author

According to Kvale and Brinkmann (2009), semi-structured interviews are particularly useful when exploring a topic where the research question is broad and not well-defined. In the context of CE, SMEs, and CM, there is a lack of clear consensus on what these terms entail, and semi-structured interviews allow for a more open and exploratory approach to understanding these concepts. All 12 interviews were recorded using the video communication platform Google Meet, which allowed for efficient and accurate transcription of the data obtained (Braun & Clarke, 2019).

Along with the primary data collected through the interviews, a comprehensive literature review was conducted to gather secondary data. The author searched for peer-reviewed articles using the Google Scholar search engine to identify motivation, barriers, enablers and success factors associated with the adoption of CE in SMEs. This information, along with relevant concepts in change management, was used to develop the interview questions. The interview guide was designed to ensure that the interviews remained focused on the research goals (Kvale & Brinkmann, 2015).

The semi-structured interview method involves asking a predetermined set of open-ended questions that align with the research framework outlined at the end of chapter one. As Barclay (2018) emphasizes, it is crucial to develop an interview guide to ensure that the questions are relevant and the conversation flows smoothly, leading to more comprehensive responses. The interview guide includes both primary and secondary questions that guide the discussion based on the interviewee's willingness to participate and readiness to engage in dialogue. This set of predetermined questions focuses on the research objectives and allows the interviewer to maintain the thematic line of the interview while adapting to the unique characteristics of each interviewee (Bernard *et al*., 2009).

The interview questions designed for this study aimed at understanding the implementation of CM in relation to the adoption of CE within SMEs. The interview guide was tailored to elicit in-depth responses about the motivation, barriers, enablers and success factors identified in the literature review, and CM concepts related to CE implementation, ensuring that the interview process aligned with the research objectives (Kvale & Brinkmann, 2015). The choice of participants for the interviews was based on the size of their respective companies and their role, as the primary goal of the research was to address the research question at the level of SMEs and the implementation process of CE.

During the selection of the sample, the SMEs in this study were identified based on the standard set by the EU, which defines small enterprises as having fewer than 50 employees and a turnover of fewer than 10 million euros, and medium enterprises as having fewer than 250 employees and a turnover of fewer than 50 million euros (Eurostat, 2022).

The individuals selected were mostly logistic managers or held positions that were related to the company's sustainability affairs. To ensure that the respondents were capable of providing relevant information, their level of knowledge regarding sustainability implementation within their company was considered during the selection process. It was deemed important that the selected respondents possessed sufficient knowledge to be able to answer the interview questions effectively.

Since this research deals with social aspects, it is important to abide by ethical codes and standards. The author have carefully considered ethical concerns associated with the study and their ability to conduct it ethically, as recommended by Blaike (2009). Participants were provided with information about the research and their rights, and they were required to sign consent forms, which are in the author’s possession and can be made available upon request. Prior to the interviews, participants also gave their consent for the interviews to be recorded. The author believes that her education at Tallinn University of Technology has equipped her with the necessary competencies and ethical principles to carry out the research in accordance with the prescribed methodological standards. At the time of completing the study, the author is not aware of any conflicts of interest. A list of all the interviewees can be found in Table 1 on the next page.

Table 1. Participant overview showing relevant information

Participant Overview						
Company	Position	Industry	Time	Date	Company size	Year Founded
A	head of logistics	agricultural	29:54	05.01.2023	small	1980
B	site manager	machines, cables, motors, generators, and ventilation	35:66	05.01.2023	small	1974
C	sustainability manager	manufacture of motor vehicles, engines	37:05	09.01.2023	medium	1957
D	product manager	manufacture of pipes, wires, plastic	35:36	20.01.2023	small	1986
E	sustainability manager	manufacture of heat pumps, water heaters, solar cells, electric boilers	49:13	25.01.2023	medium	1989
F	director of technology	manufacture of metals	43:49	26.01.2023	small	1940
G	sustainability manager	manufacturing of lifting and goods handling devices	27:58	27.01.2023	medium	1959
H	head of sustainability	manufacture of steel barrels	33:05	27.01.2023	small	1907
I	head of logistics	manufacturing of plastic parts	25:41	30.01.2023	medium	1941
J	head of logistics	manufacturing of rubber goods, accessories and engines	28:18	30.01.2023	medium	1963
K	head of logistics	manufacturing of different metal	24:61	02.02.2023	medium	1995
L	head of logistics	manufacture of trucks, heavy motor vehicles	29:43	02.02.2023	medium	1917

Source: Author's own on the basis of data shown in Appendix 2 compiled by the author

3. FINDINGS

This chapter is an essential part of the research as it presents the results of the study. The data from the interviews have been analyzed and evaluated into different subchapters' motivation, existing CE practices, factors influencing the implementation of CE practices, and the change management process.

3.1. Motivation behind Circular Economy implementation

Motivation is a critical factor in driving successful organizational change toward CE practices, as individuals need to be inspired and committed to the change effort for it to be successful. Understanding and addressing motivational factors is essential for effective CM. To gain insights into the role of motivation in driving organizational change toward CE practices, interviews started with questions regarding the source of motivation for circular initiatives. Through these interviews, the author aimed to understand the key motivational factors and the following section outlines the findings from these interviews.

12 companies were asked why the CE matters to them. Their responses indicate that they are increasingly aware of the impact of their activities on the environment, and they are motivated by factors such as legal requirements, customer demands, and the desire to have a positive impact on future generations. Many companies are taking action to implement CE principles, such as reusing energy, developing better insulation, and working with sustainable materials. Some companies see CE as a way to increase profit, while others emphasize the need to eliminate unnecessary plastic items and ensure that the plastics, they use are reusable, recyclable, or compostable. Overall, the responses suggest that companies are recognizing the importance of CE in creating a more sustainable future. One company stated, "Circularity is better...we seek a lot of money from innovation, i.e., the state's research oriented. In all search processes today, you must be a company that thinks about sustainability" (D). Another mentioned, "Mostly a demand from the customers to be sustainable, because our main material is plastic. What drove it the most for the company? It

is actually a customer requirement, so to speak, so that's where it comes from. Absolutely. There will be an environmental interest as well" (I).

Several companies also emphasized the importance of being seen as a "Decent" or "Nice" company (Company C) and of participating in creating a sustainable future (Company F). One company mentioned that public opinion can influence their impact on the environment (Company G). Another company acknowledged that they need to be more intelligent in their resource use and lack knowledge regarding circularity (Company F).

More than a few companies mentioned outside pressure as a driving force for sustainability efforts, such as customer demands (Company B, H), government regulations (Company D, I), and the need to control emissions and waste (Company J). One company noted that linear manufacturing is becoming outdated, and that recycling is highly valued (Company J).

Once asked about the first push to implement or consider the CE practices, the responses are varied and complex. Some interviewees note that legal requirements and stakeholder pressures are crucial factors in driving their organizations to adopt more sustainable practices. For instance, interviewee E states that legal requirements will partially affect their organization's approach to sustainability, while interviewee G argues that laws are forcing their organization to use more recycled raw materials and reduce their carbon footprint. Other interviewees suggest that internal factors, such as the personal values of top leaders, are also important drivers of sustainable practices. Interviewee B, for example, notes that their organization began to focus on sustainability after top leaders became interested in the topic. Similarly, interviewee G reports that individuals within their organization pushed for sustainability and helped to create a culture that values environmental responsibility.

Other interviewees suggest that the need to survive and remain competitive is a key driver of sustainable practices. For instance, interviewee H argues that their organization pursues sustainability because "We will not survive if we do nothing." This sentiment is echoed by interviewee L, who notes that sustainable practices are becoming increasingly relevant for their competitors as well. Interviewee D also suggests that considerations of customer demand and the company's image are key factors driving their organization to adopt more sustainable practices.

In terms of specific actions taken to promote sustainability, several interviewees noted that their organizations focus on reducing waste and recycling materials. For instance, interviewee A states that their organization is conscious of waste and tries to implement materials that can be recycled. Interviewee G also notes that their organization is being forced to take better care of waste and reduce its carbon footprint due to legal requirements. Additionally, interviewee F notes that their organization is looking to contribute to a good environment and Agenda 2030 has provided a framework for their CE efforts. The source of motivation is shown in Figure 9 below.

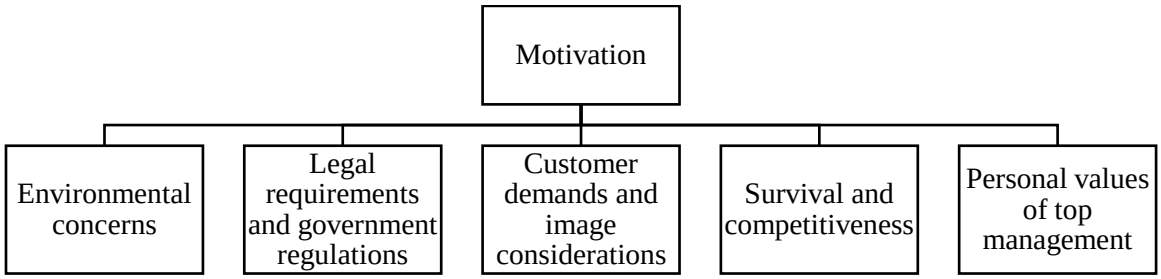

Figure 9. Source of motivations for driving Organizational change toward CE practices
Source: Author's own on the basis of data shown in Appendix 3 compiled by the author

Overall, the interviews suggest that organizations pursue CE practices for a range of reasons, including legal requirements, stakeholder pressures, personal values of top leaders, survival and competitiveness, customer demand and image considerations, and a desire to contribute to a better environment.

3.2. Existing Circular Economy practices

The companies studied have varying levels of engagement in CE practices. Asked if they have any specific CBM model, all the participants said no. However, asked about the CE practices, it showed that they in fact had specific CBM in place, and others are in the process of developing strategies toward circularity. Based on the given statements, the companies mentioned are taking steps toward CE, particularly in reducing waste and emissions. They are also looking at using wise material choices, refurbishing products, and implementing a closed-loop system where they take back their products to recycle and reuse them. Some are also focused on using recycled materials, such as steel and plastics, and are working toward having their products recyclable.

They are also using renewable energy sources and trying to be more energy efficient. However, they may not have a fully established CBM, and some are still exploring ways to improve their sustainability efforts. More details on the business models of each company are presented in Table 2.

Table 2. Details of CE business practices/business models

SMEs business practices/business models	
Company	CE practices and business models
A	conscious of emissions, working to reduce waste, and trying to be more sustainable
B	focusing on wise material choices, making products more environmentally friendly, and considering the entire life cycle of products
C	working in the second-hand market, refurbishing products, and assessing where they have the most impact
D	trying to use, reuse, and recycle products, using renewable electricity and eco-labeled district heating, and trying to get suppliers to use externally extracted fractions
E	occasionally reusing a part of components and grinding down materials to make new materials
F	managing materials to recycle most of them and keeping everything internal, with a focus on steel and having a closed system
G	focusing on recycled materials, particularly steel, and updating old machinery to make new one
H	producing recyclable products, focusing on sustainability goals for 2030, buying green electricity, and reporting their climate footprint
I	reuse plastic scraps and materials, make machines more energy-efficient, and recover heat
J	rebuilding pipes with parts from a car company's scrap metal and considering how to reduce costs
K	melting down scraps of metal to produce new ones, buying back scrap metal that other companies do not want to use, and focusing on what can be reused
L	buy back parts and scraps of the machines they build to produce something new and more, making use of what can be reused

Source: Author's own on the basis of data shown in Appendix 3 compiled by the author

3.3. Factors influencing the implementation of Circular Economy practices

The successful implementation of CE practices is influenced by several factors, including enablers, as well as barriers. Moreover, the roles of various stakeholders such as customers, government,

universities, and investors play a crucial role in shaping the adoption and implementation of CE practices, with their support, demands, and expectations impacting the overall sustainability efforts of organizations.

3.3.1. Barriers of change toward Circular Economy

The responses reveal a range of internal and external barriers, including financial constraints, a lack of support from parent companies, difficulties in finding suppliers who can provide sustainable materials, outdated equipment, regulatory requirements, and the need for more knowledge and technical improvements. The responses highlight the challenges of balancing economic considerations with environmental concerns and the importance of finding solutions that are both financially viable and environmentally sustainable.

Some companies feel that they lack the necessary resources or knowledge to make significant changes, while others believe that education and more openness to innovative ideas are needed. Communication and organizational issues were also cited as potential obstacles, as well as financial concerns and a lack of clear direction from leadership. One company representative suggests that employees are not engaged with sustainability due to management's failure to prioritize it. The representative noted, "Maybe it's us in management who haven't implemented that kind of thinking and made it an important factor." Lack of knowledge is another obstacle cited by several respondents. One representative state, "There is some lack of knowledge when it comes to [handling waste material]," and another note that "Not many have the knowledge when it comes to a bit more general sustainability components."

The findings of the interview data regarding external stakeholders are diverse. While some companies have been able to check the sustainability of their suppliers by researching them before entering contracts, others find it hard to check and end contracts with unsustainable suppliers. There is a growing awareness of the need for circular suppliers, but most companies do not have enough information about their suppliers to make the choice fully circular. Although some companies discuss circularity with their suppliers, they are still heavily dependent on them, and it is difficult to put pressure on them. Some suppliers are more sustainable than others, and it is important that the entire supply chain is interested in circular solutions. The main challenges faced by companies in this area are the limited availability of some sustainable products, the lack of data from suppliers, and the soaring prices and lower quality of some sustainable products. While some companies have a project with a supplier that has gone far, others are still waiting for more

requirements to come to make it easier for them to handle some suppliers that should think more about the environment.

3.3.2. Drivers of change toward Circular Economy

The transition toward a CE is driven by a range of factors, including the changing preferences of customers, government policies, investor demand, and collaborations among stakeholders. Customers play a critical role in driving change toward CE practices, as they increasingly demand products and services that are sustainable and environmentally responsible. This demand for sustainability is further amplified by government policies that incentivize and regulate businesses toward circular practices, such as extended producer responsibility and product design regulations. Investors also play a key role, as they increasingly prioritize companies that adopt CE practices, leading to increased funding and investment in such initiatives.

Collaborations among stakeholders are also important drivers of change toward a CE. Such collaborations bring together different perspectives and expertise to develop innovative solutions for circular practices. Collaboration among companies can also lead to economies of scale, reducing costs and improving the adoption of circular practices.

3.3.4. Role of stakeholders

The answers from the companies regarding the role of the government in CE implementation are varied. Some companies, such as Company A, seem to feel that the government has not been providing sufficient requirements and guidance for implementing CE practices. Company E echoes this sentiment, indicating that guidelines at the EU level are necessary to make it easier for companies to comply with sustainability and carbon reporting requirements. Other companies, such as Company B, Company F, and Company J, indicate that they are aware of the importance of sustainability and CE practices, but find it difficult to identify what is relevant for their specific operations. Company K notes that while there are guidelines in place, there is a lack of ongoing support from the government once a company has made the transition to CE practices. Overall, it appears that while companies recognize the importance of CE practices and government involvement, there is a need for more concrete guidance and ongoing support from the government to facilitate their implementation.

The responses from the companies regarding the role of customers in CE implementation are varied. Company A and Company F both suggest that customers have a significant role to play in driving changes toward CE practices, as they demand more environmentally sustainable products and services. Company B highlights the challenge of reconciling sustainability with the customers' desire for cheap and fast products. Company C suggests that customers prioritize price over environmental impact, but pressure from customers would still be positive. Company D notes that customers are starting to demand more sustainable products and are evaluating products more thoroughly. Company E highlights the need for global guidelines and regulations to facilitate CE implementation. Company G suggests that customers prioritize quality and price, but the company is motivated to find solutions that satisfy both. Company H notes that customers are interested in sustainable packaging but may need more education on the topic. Company I suggests that customers have a lot to say but meeting all demands can be challenging and Company J notes that customers demand sustainability for reputation purposes. Finally, Company K highlights the pressure that customers put on their processes. Overall, the responses suggest that customers are becoming increasingly important in driving CE implementation but there are still challenges in reconciling sustainability with customers' desires for affordable and high-quality products.

The responses from the different companies vary widely in terms of the role that investors play in pushing their CE practices. Company A suggests that investors are not a barrier, but they do not explicitly mention any specific role. Company B indicates that investors are happy with the results, and there are no signals that suggest any further action is needed. Company C provides a simple response of “No" and does not elaborate further. Company D suggests that investors are closely tied to the management team and focus on good numbers and increasing turnover. They do acknowledge that environmental concerns are important to the company and their customers. Company E indicates that they would like more investors to invest in sustainability, but financial constraints make this difficult. Company F suggests that investors are involved and that not being on board with sustainability could lead to losing customers, creating competitive and economic motivation. Company G indicates that investors are increasingly interested in sustainability, making it easier for managers to implement sustainable practices. Company H suggests that the company board is interested in sustainability, which is positive. The company I note that investors have clear demands, such as reducing emissions by 20% by 2030. Company J suggests that investors prioritize sustainability, as it is an important aspect of annual reports that can attract new investors. Companies K and L indicate that there is a lot of pressure from investors to prioritize

sustainability, but it is not always clear what to prioritize, and more involvement from stakeholders is needed.

Out of the 12 companies, 5 of them (Company B, D, E, G, and J) have engaged with universities in developing their CE practices. Companies B and G have had students from universities conduct research on their companies. Company D collaborates with a steel non-governmental organization, which is knowledgeable in its area. Company E is continually active in collaborating with colleges and universities to construct sustainable products for the future. Company J collaborated with a university in town to analyze their emissions. 6 companies (Company A, C, F, H, K, and L) have not engaged with universities, but some of them expressed a willingness to collaborate in the future. The company I stated that they get students who work with them for a few weeks and provide a fresh perspective on their methods.

3.4. Change management process

This section provides the key elements of CM for CE, namely the role of managerial commitment, company culture, technology and knowledge, and stakeholders. Managers must set clear objectives, create a strategic roadmap, and allocate resources toward circularity efforts. Company culture should embrace innovation, experimentation, and continuous improvement. Technology adoption and investment in knowledge development are essential to improve processes and adapt to changing trends and regulations. Finally, organizations must engage with stakeholders to identify new opportunities and gain access to resources, which can help drive circularity efforts forward.

The change process has not been an easy task for the companies, the responses are mixed in terms of the progress made toward transitioning to more CE practices. Some respondents believe that the transition is ongoing and has been happening gradually over time due to external factors such as climate change, pressure from customers, and regulatory requirements. Others think that there has not been a significant transition yet, and education and coordination from authorities are needed. Some respondents mention financial aspects as a hindering factor, but others see it as an opportunity to attract customers and employees. Overall, the responses suggest that the transition to sustainability is a continuous process that requires ongoing efforts and coordination.

As companies transition toward CE practices, they develop new knowledge and capabilities that enable them to operate more sustainably and efficiently. This knowledge and capabilities can include modern technologies, business models, and strategies for managing resources. To develop the necessary knowledge and capabilities, companies often need to collaborate with stakeholders across their value chain, including suppliers, customers, and even competitors. By working together, they can share best practices, leverage each other's expertise, and drive innovation toward a more sustainable future.

While making the change, the companies realize gaps in the strategies and aim to develop them to keep the change relevant. This includes the need for better control over production processes and the importance of improving knowledge and implementing guidelines from the government. There is also a focus on the development of equipment and products that can extend the life cycle of products and better manage resources. Additionally, there is a call for increased awareness, money, infrastructure, and supplier involvement, as well as the need to collaborate and have a common strategy for CE. The responses also emphasize the importance of acquiring more knowledge about how to effectively reuse and manage materials, as well as the need to read and learn about competitors' CE practices to remain competitive.

In addition, several companies underline the importance of knowledge and education in improving CE practices in the industry. Workshops have been conducted with employees and managers to improve their understanding of the forest and how machines affect the soil. However, more education is needed to improve production and profitability, and managers should receive more specific education on product lines. There is a lack of resources to train staff with the necessary capabilities, and more insight is needed to implement circular thinking. Knowledge is needed to understand certifications and make informed decisions, and past successes and failures should be studied to prepare for the future. Overall, knowledge and skills are essential to implementing CE practices in the industry.

Upon in-depth discussion of the change process, the role of suppliers, customers, and industry in promoting CE practices was revealed. Some participants state that CE is necessary, and a good reputation is important, but customers are not always willing to pay for it. Some discuss working with both sustainable and non-sustainable suppliers and the need to find suppliers that meet sustainable standards. Others mention the importance of social sustainability, in addition to circularity. They also discuss the challenges of finding circular suppliers and the need for more

pressure from customers for sustainability. The Stockholm Environment Institute is mentioned as a source of information and guidance for sustainability issues. The EU Taxonomy is also mentioned to promote the financing of CE solutions. Communication with suppliers and a network of quality managers is also discussed as essential to promoting sustainability.

The role of government and state regulations also play a crucial role in the change process and act as enablers or barriers to managing the change, according to companies. Most companies acknowledge the existence of guidelines and regulations, but some express difficulty in understanding and implementing them. Some note the lack of clear incentives and support from the government, while others mention financial support in the form of tax reductions and funding for sustainable projects. The complexity of regulations and requirements for handling waste and circular products is also noted. The need for clearer and specific guidelines is mentioned, along with the challenge of reporting on environmental impact. Some individuals express interest in improving CE practices and welcome increased demand for environmentally friendly products and services.

Furthermore, the CM process of SMEs, managerial commitment, company culture, technology and knowledge, and stakeholder engagement were found to be success factors. In terms of managerial commitment, SMEs that have strong leadership commitment toward CE practices tend to have a clearer vision, stronger motivation, and greater resources allocated toward achieving their CE goals which ease the change process. The establishment of a culture that values sustainability and circularity is another success factor for SMEs to achieve effective and lasting change toward a CE implementation. In addition, the availability and accessibility of relevant knowledge, information, and technology are important for SMEs to adopt and implement CE practices. Engaging and collaborating with stakeholders such as suppliers, customers, and industry peers is crucial for SMEs to achieve buy-in, support, and feedback throughout the CM process, leading to the more successful implementation of CE practices.

SMEs that consider these critical success factors are more likely to successfully transition toward CE practices and enjoy the associated benefits of cost savings, resource efficiency, and environmental sustainability. The success factors can be seen in Figure 10 below and represent the key success factors.

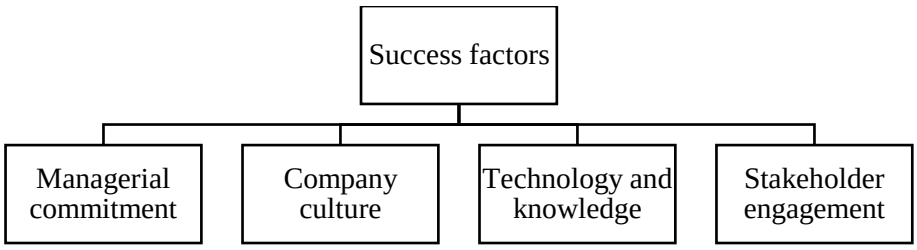

Figure 10. Findings on success factors for implementing CE for SMEs
Source: Author's own on the basis of data shown in Appendix 3 compiled by the author

To summarize, Figure 11 presented below contains the key findings and results of the comprehensive research study. These findings were obtained after a careful analysis and diligent research efforts, and as such, they provide valuable insights into the field of study. It is hoped that the information presented will be useful to researchers and practitioners in the field.

Motivation	Circular practices	Enabelers	Barriers	Success factors
•Environmental concerns •Legal requirements and government regulations •Customer demands and image considerations •Survival and competitiveness •Personal values of top management	•Reuse •Redesign •Refurbish •Recycle •Recover	•Customers •Government policies • Investor demand •Collaborations among stakeholders	•Lack of resources and knowledge •Not being open to new ideas •Communication and lack of clear direction •Limited sustainable products	•Managerial commitment •Company culture •Technology and knowledge •Stakeholder engagement

Figure 11. Main findings from participants
Source: Author's own on the basis of data shown in Appendix 3 compiled by the author

4. DISCUSSION

The discussion section of this thesis provides an opportunity to interpret and analyze the findings of the study in the context of the literature review. The implications of the findings will be discussed with the aim to provide a comprehensive understanding of the research outcomes and contributing to the existing knowledge base in the field.

The study focused on identifying the primary sources of motivation for SMEs in Sweden and how they implemented CE, as well as the most common barriers and enablers for such implementation and how they managed the change. By addressing the research problem, aim, and questions, the study sought to provide insights into how SMEs successfully can adopt CE practices and contribute to sustainable development. The results were obtained through semi-structured interviews of 12 SMEs from the manufacturing sector, it is advisable to exercise caution while generalizing these findings to the entire population of Swedish SMEs as the sample was undersized. Furthermore, the author found that organizational culture is a significant driving force for implementing CE, and comprehensive OCM strategies are crucial for success.

The responses from the participants in the study suggest that there are several obstacles when adopting sustainability practices. One issue faced by the respondents was a lack of finances, and this is considered a key barrier gathered from the literature review (Paolillo *et al*., 2015; García & Sanz, 2018). Despite the hindering factor, some participants see CE as an opportunity to increase income by attracting new customers and employees and are willing to invest their finances in this area. This is also stated by the Ellen MacArthur Foundation (2019) which claims that adopting a CBM can cut down on resource use and waste production while boosting profitability.

It is further pressed that the importance of the transition toward a CE is driven by a range of environmental, economic, and social benefits. For example, the implementation of a CBM focused on remanufacturing can stimulate job creation and bolster local economic growth (OECD, 2023). CE can increase resource security by reducing reliance on finite resources and increasing the use

of renewable resources and improve reputation. This can lead to reduced price volatility and supply chain risks.

Reputation and competition was also mentioned by the participants as a key factor of motivation, and the desire to have a positive impact on future generations and survival. CE actions can draw in customers who care about the environment and are willing to pay more for ecologically friendly goods (Atasu, 2021; Sachs *et al*., 2019. However, the participants stated that the customers and suppliers are hesitant to pay more for circular goods. The participants further mention the unreasonable prices and lower quality of some sustainable products. The implication here is that corporations might have to allocate resources toward sustainable strategies and that making short-sighted tactical choices could jeopardize their future outcomes.

The author's intention is to emphasize the great significance of suppliers in the transition toward a CE, as their involvement is critical in this process. One significant obstacle is the difficulty in finding suppliers who can provide sustainable materials. Some of the participants stated that this is due to the lack of transparency and awareness from the suppliers, as well as the limited availability of sustainable goods and higher prices. Identifying themselves as small, the companies interviewed were reliant on their suppliers and encounter challenges in pressuring them to adopt more sustainable practices. However, the literature emphasizes the importance of involving suppliers in the CE transition, as they play a critical role in providing sustainable materials and implementing CBMs. This collaboration can lead to increased efficiency, cost savings, and new revenue streams, fostering innovation and benefiting the environment and society (Ellen MacArthur Foundation, 2015; Lieder & Rashid, 2016).

To enhance the relationship with the supplier, the author suggests that the companies need to develop a comprehensive OCM strategy that includes information exchange between organizations, suppliers, and the government. Companies should also work closely with their suppliers and discuss circularity with them, incentivizing and encouraging them to transition. Overall, the importance of collaboration and cooperation between companies and their suppliers in transitioning toward a CE is crucial. While challenges exist, there is a growing awareness amongst the participants of the need for circular suppliers, and the companies should continue to work toward creating a more sustainable supply chain.

Shifting the focus to another obstacle, the issue of insufficient knowledge and information among SMEs. The participants encountered challenges in managing waste materials, a common hurdle faced by SMEs (Ormazabal *et al*., 2016). Insufficient knowledge can result in a limited adoption of modern technologies, including those that pertain to the CE and improving waste management. Furthermore, none of the participants were aware of any technology utilized for enabling circularity within their organization. Both the literature review and findings underscore the challenge posed by the lack of knowledge and skills required for implementing CE (Bocken *et al*., 2014; Nazlı, 2021). Hence, there is a pressing need for greater sharing of knowledge and information among companies to facilitate the adoption of CE principles. In addition, the study reveals that the participants display an inadequacy of knowledge concerning sustainability practices, and a dearth of precise direction from leadership to tackle this matter.

To tackle these challenges, many companies have sought to enhance their CE practices through collaborations with universities. For instance, enlisted the help of university students to conduct research on their operations, formed a partnership with a specialist in the steel manufacturing field, engaged in working with colleges and universities to design sustainable products for the future, or teamed up with a local university to analyze their emissions. By engaging with universities, companies can gain access to sustainability experts and CE practitioners and deepen their knowledge and expertise in these areas. Studies have also shown that collaboration with universities and other research institutions can lead to innovation and the development of new CE practices (Korhonen *et al*., 2018; Filho *et al*., 2018). Universities can provide companies with research and development capabilities, access to advanced technology and equipment, and a pool of highly skilled students and researchers. Moreover, The Ellen Macarthur Foundation (2015) and Kotter (2009) also emphasize the importance of developing a comprehensive strategy to address barriers and enable a successful transition which collaboration which universities can assist with.

Regarding the companies' motivation to become more circular. The participants in the study exhibit a general willingness to change and acknowledge that CE is becoming increasingly relevant. Some companies have already adjusted their business plans to incorporate sustainability practices. However, despite incorporating circularity elements, none of the participants believed that they possessed a CBM. The author posits that the reason behind the SMEs' reluctance to label themselves as circular is the insufficient information and knowledge about circularity, due to varying definitions and requirements. However, they are employing various circular practices such as exploring the reuse of energy, improving insulation, buying back waste, and utilizing sustainable

materials. Some companies see CE as a way to increase profit which is stated in literature as well (Ellen MacArthur Foundation (2015), while others emphasize the need to eliminate unnecessary plastic items and ensure that the plastics, they do use are reusable, recyclable, or compostable. This indicates that there is a range of approaches to implementing CE practices, and different companies prioritize various aspects of sustainability in their operations.

Moving on, the interviews conducted on SMEs reveal that their motivation to pursue CE practices are defined as success factors in the literature review (Lieder & Rashid, 2016; Seth & Rehman, 2022) such as legal requirements, stakeholder pressures, personal values of top leaders, competitiveness, customer demand, image considerations, and a desire to contribute to a better environment. Furthermore, the mindset of top management and employees influences the adoption and success of CE practices and according to one of the participants that stated ”Maybe it's us in management who haven't implemented that kind of thinking and made it an important factor”, shows the importance. Liu & Bai (2014) adds on this, meaning that leadership and organizational culture is promoting sustainability. Companies that prioritize sustainability and have a culture of innovation and experimentation may be more likely to adopt CE practices.

The respondents are aware of the environmental impact of their activities and motivated by the desire to have a positive impact on future generations, they also recognize the significance of CE in building a sustainable future but most of them lack a clear strategy, which the author state as important (Frishammar & Parida, 2019; The Ellen Macarthur Foundation, 2015; Kotter 2009). The literature further emphasizes the importance of a strategic approach and cross-functional collaboration in the successful implementation of CE practices (Geissdoerfer *et al*., 2018), which co-occur with another study that emphasizes the role of innovation and product design in enabling the transition to CE (Borghesi *et al*., 2015).

Furthermore, the findings presented suggest that the transition toward a CE is driven by multiple factors, including changing customer preferences, government policies, investor demand, collaborations among stakeholders, and pressure. These factors align with the success factors cited in the literature review, including policy and regulation-related factors and stakeholder pressure (Rizos *et al*., 2016). For example, government policies that incentivize CE practices can act as a success factor, while a lack of supportive policies and regulations can hinder progress toward a CE (Lieder & Rashid, 2016; Tura *et al*., 2019). While analyzing, the author identified these two predicaments, the complexity of how SMEs view government support as both an enabler and a

barrier toward a CE transition. It is important for SMEs to have a clear understanding of government guidelines to benefit from the support provided. This underscores the importance of straightforward and unambiguous government policies and regulations that can facilitate the transition toward a CE.

In terms of managerial commitment, SMEs that have strong leadership commitment toward CE practices tend to have a clearer vision, stronger motivation, and greater resources allocated toward achieving their CE goals which ease the change process (Yang *et al*., 2021). The establishment of a culture that values sustainability and circularity is another success factor for SMEs to achieve effective and lasting change toward CE practice and corporate culture is crucial in the transition toward a CE, as supported by the literature review (Rizos *et al*., 2016; Liu & Bai, 2014). As indicated by Dissanayake & Weerasinghe (2021), there is a lack of employee education on corporate sustainability and limited awareness of the social and environmental impacts of the company's behavior. In contrast, the participants in this study were aware of their impact, but few had provided sustainability education to their employees, which could be a crucial factor in becoming more circular. These findings were consistent with prior research, which has shown that the implementation of circular practices requires a comprehensive approach that involves addressing all relevant factors (Ellen McArthur Foundation, 2015).

To conclude, the Swedish SMEs interviewed have identified the need for further efforts to replace outdated Linear Business Models with CE practices. The author adds that for a successful transition, it is crucial to have a comprehensive understanding of CE principles to facilitate the shift from traditional linear business operations to circular ones. The successful implementation of circular practices will require a collaborative effort between all stakeholders to create a more sustainable future.

CONCLUSION

This section allows for a concise summary of the primary findings, significant aspects of the researched topic, and the provision of answers to the research questions. It also includes recommendations and outlines the contributions to the field and fresh perspectives on SMEs, CE, and CM and the limitations.

According to the study, the successful adoption of CE practices in SMEs is influenced by multiple factors. Integrating these factors into tailored management strategies can lead to a smoother and more efficient transformation toward CE practices and long-term sustainable growth. This study showed connections between current business practices, sustainability, market pressure, government efforts, and information distribution. Additionally, the study emphasizes the need for further research on CE practices in the manufacturing industry, where current research is insufficient. Nonetheless, it is advised to be cautious when extrapolating these findings, as the research only included a limited number of SMEs. The outcomes of the study can not be generalizable to the entire population of Swedish SMEs, given the restricted sample size and duration of the research. Although there are limitations to the study, its results are of great significance for the manufacturing sector in Sweden as it emphasizes the importance of transitioning toward CE and highlights the need for further research in this area, as well.

The primary objective of this study was to offer a substantive response to the set of research questions.

1. What are the main sources of motivation, most common barriers (resistant forces), and enablers (driving forces) for the implementation of CE practices by SMEs?

2. How do SMEs effectively manage the change process, and what are the critical success factors for managing the change process toward the implementation of CE practices in SMEs?

For the first research question, the study's findings suggest that the adoption of CE practices in SMEs is affected by various barriers and enablers which are both internal and external. Nonetheless, the main sources of motivation for the SMEs to implement CE practices include environmental concerns, customer demand, reputation, competition, regulatory requirements, potential cost savings, and values from top management. Moving on to the most common barriers (resistant forces) include lack of knowledge and technical expertise, lack of communication and clear direction, financial constraints, resistance to change, and lack of supportive environmental infrastructure. Lastly, the enablers (driving forces) for CE implementation include customers, investor demand, financial incentives, support from the government, collaborations amongst stakeholders, and public institutions. However, the impact of these factors may vary depending on the unique production processes and financial situations of the individual SME. Therefore, developing a comprehensive CM strategy is crucial for SMEs to overcome these barriers and make use of the enablers, and successfully adopt CE practices. When comparing the findings to the literature the author found that the Swedish SMEs perspective is consistent across different countries, suggesting a global pattern rather than country-specific when it comes to the transition toward circular practices.

For the second research question, the application of Lewin's three-step model can offer valuable insights into how SMEs can proficiently manage the process of change while implementing CE practices by using the success factors. To initiate the unfreezing process, the first step involves creating awareness and effectively communicating the necessity for change to all stakeholders. The leadership's effectiveness is pivotal in driving the change and ensuring the organization's alignment with the objectives of the CE transition, which some SMEs found challenging. The leaders should focus on the success factors that were identified that prompt SMEs to adopt CE practices, such as managerial commitment, the company culture, technology and knowledge, and stakeholder engagement. However, despite taking these steps, the SMEs still had varying degrees of success in managing the change process toward implementing CE practices.

During the second step of the change process, SMEs seeking to adopt CE practices must formulate a comprehensive CM strategy that considers both the enablers and barriers specific to their business. The interviewed SMEs did not mention any specific strategy but had different implementations of circular practices. However, some SMEs had limited communication, education, and training for their employees, resulting in inadequate knowledge and technical

expertise in implementing CE practices. The study reveals that the ability of Swedish SMEs to transition toward more CE practices is inconsistent, primarily due to a lack of information and inadequate ways to access it. Information from within the company and the government receives the most attention, with most, but not all, SMEs believing that it could be improved. Furthermore, it is essential to highlight the significance of clear and consistent communication to guarantee that all stakeholders comprehend the objectives and advantages of the CE transition. This is especially critical because some SMEs encountered challenges in identifying sustainable suppliers or putting pressure on existing ones. Thus, SMEs may need to collaborate with other organizations and stakeholders to exchange knowledge, resources, and best practices more than they do today. Additionally, it is crucial to allocate sufficient resources, including funding and time, to support the implementation of CE practices. However, around half of the SMEs had some sort of collaboration with universities and the other half showed some interest.

Since some of the SMEs had successfully implemented some CE practices, for this to prosper the SMEs must reinforce and institutionalize the changes made during the refreezing stage. The author also noticed that the SMEs seemed to monitor and evaluate the effectiveness of the implemented CE practices. However, they did not mention making any specific necessary adjustments. Furthermore, some of the SMEs showed that they celebrated the transition toward adopting CE practices by speaking positively about the changes. By doing so, SMEs can maintain momentum and commitment and continue to drive positive outcomes for their business and the environment. Nevertheless, SMEs need to be flexible and adaptable to change which the author acknowledged a few SMEs to be, as the CE transition may involve new processes, technologies, and ways of doing things. The CE transition is an ongoing process, and SMEs need to continuously evaluate and improve their practices to ensure that they are meeting their goals and objectives.

The recommendations provided in this research include the need for improved policy frameworks, support mechanisms, and the implementation of support programs for enterprises and industry organizations. Which can help expedite the transition of SMEs toward CE practices. Additionally, industry organizations, academics, and advanced education institutes can play a key role in raising awareness and training individuals for green professions. Based on the findings of the examination of Swedish SMEs' engagement in circular practices, policymakers are given some recommendations to help expedite the transition of Swedish SMEs to CE. To facilitate the transition to a CE, a policy framework must be strengthened, adding more of a variety of support

mechanisms. In addition to institutional assistance, the implementation of support programs for enterprises at all levels of understanding must be developed.

One of the notable contributions of this research is the comprehensive understanding and gained insight into the motivations, barriers, and enablers faced by the Swedish SMEs during the implementation of CE practices, and how they managed the change. This highlights the need for SMEs to develop a comprehensive CM strategy to address the barriers and enable a successful transition to CE practices. Moreover, the study confirms that inadequate knowledge and technical expertise are significant barriers in the Swedish SMEs interviewed. Therefore, providing SMEs with education and training on corporate sustainability and the environmental and social implications of their behavior is essential. Overall, the research emphasizes the need for a collaborative approach that involves stakeholders from various sectors. The contributions of the research can inform policymakers, SME decision-makers, and researchers to develop evidence-based initiatives and strategies that can help overcome the barriers and enable a successful transition to CE practices.

Regarding limitations, the availability of participants and time constraints were significant in this study. In addition, trust between participants and the study was problematic, which is consistent with findings in the literature that describe reluctance to share information as a hindrance to data collection and development. Furthermore, some SMEs found the purpose for which the data was intended contentious, which contributed to the limited number of participants in the study. Technical difficulties and internet issues were also encountered during the remote Google Meet interviews, and it was challenging and time-consuming to find suitable interview candidates. The author acknowledged time and resource constraints as limitations when designing the study.

In conclusion, several future study options are recommended based on the findings, which might assist in better understanding the determinants of CE transition acceptance among Swedish SMEs. For example, a detailed examination of SMEs is necessary. Furthermore, future studies should look at organizational aspects to better understand SMEs' interpersonal problems when they try to transition into CE. Other research might investigate the knowledge the employees need, to assist the move from traditional to circular practices in the specific field. Or the influence of public incentives for CE adoption among enterprises of assorted sizes and industries might be studied. Researchers might also investigate how much a company's preference for the CE impacts its

creditworthiness. Finally, a study in the realm of management motivation is suggested to better understand the significance of CE planning and control in SMEs.

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APPENDICES

Appendix 1. Interview questions

Block 1: Personal attitude towards and motivation for CE.

Why does CE matter?

● What was your main motivation behind your decision for a Circular Business Model?

● Was there a special cause or incident that influenced your decision?

● If you needed to take a position between your personal conviction of CE or 'doing for good' motivation, and financial reasons: where would be your position?

Block 2: Explanation of the organisation's Circular Business Model.

● Please explain the circular business model you implemented/are implementing. (describe your process of starting up? From your first idea until today?)

● What is the circular aspect in the business model?

Block 3: Description of the barriers encountered with the circular business model.

● Were the perceived barriers rather internal or external?

● Which internal barriers did you face when implementing the circular business model?

o Difficulties on organisational level

o Difficulties on employee level (motivation, knowledge, etc.)

o Difficulties on managerial level (motivation, knowledge, etc.)

o Financial barrier as a lack of budget

o Lack of knowledge, innovation and technology

o Company culture: aversion to change

o Lack of information/communication

o Conflict of interest within company (such as company goals, etc.)

● Which external barriers did you face when implementing the circular business model?

o the availability of circular suppliers or solutions in affordable and competitive prices

o poor market co-ordination and collaboration
o Lack of national guidelines and policies
● Impulses from external stakeholders:
o Government
o Customer
o Investors
o R&D cooperation with Partners or Universities (Industry cooperation)

Block 4: Capabilities for the implementation
● What capabilities are needed to implement and sustain a circular business model? Have you developed any specific strategies/ capabilities?
● Capabilities are:
● Skills or knowledge-based capabilities:
o Knowledge or skills gain by hiring new employees with a specific
profile to do tasks for circularity implementation
o Education of workers, for example, skills workshop about CE
o Education of managers
o Hiring external consultants
o Technological capabilities:
o IT/software to facilitate circularity in the firm
o innovative 'circular' /remanufacturing technologies
o other?

Block 5: Change management aspect
How the transition was managed?
● Which factors hinder or facilitate the implementation of circular business models/circular practices?
o Employee commitment
o Managerial commitment
o Organisational culture
o Technology and technological know-how
o role of communication/collaboration
o Role of suppliers / customers / industry associations / NGOs / external advice
o State guidelines / financial or other incentives from the state/municipalities

Appendix 2. Background of interviews

Participant Overview						
Company	Position	Industry	Time	Date	Company size	Year Founded
A	head of Logistics	Agricultural	29:54	05.01.2023	Small	1980
B	site manager	machines, cables, motors, generators, and ventilation	35:66	05.01.2023	Small	1974
C	sustainability manager	manufacture of motor vehicles, engines	37:05	09.01.2023	Medium	1957
D	product manager	manufacture of pipes, wires, plastic	35:36	20.01.2023	Small	1986
E	sustainability manager	manufacture of heat pumps, water heaters, solar cells, electric boilers	49:13	25.01.2023	Medium	1989
F	director of technology	manufacture of metals	43:49	26.01.2023	Small	1940
G	sustainability manager	manufacturing of lifting and goods handling devices	27:58	27.01.2023	Medium	1959
H	head of sustainability	manufacture of steel barrels	33:05	27.01.2023	Small	1907
I	head of logistics	manufacturing of plastic parts	25:41	30.01.2023	Medium	1941
J	head of logistics	manufacturing of rubber goods, accessories and engines	28:18	30.01.2023	Medium	1963
K	head of logistics	manufacturing of different metal	24:61	02.02.2023	Medium	1995
L	head of logistics	manufacture of trucks, heavy motor vehicles	29:43	02.02.2023	Medium	1917

Source: Compiled by the author

Appendix 2 continued

Transcripits:

https://drive.google.com/drive/folders/1BAf6YMBhWD64RF5CxxaEnhDHtTmIXWQD

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